CITY OF HOLLY HILL, FLORIDA

CITY COMMISSION

AGENDA ● JANUARY 25, 2022

City Commission Chamber	Regular City Commission Meeting	6:00 PM

CITY HALL
1065 RIDGEWOOD AVENUE
HOLLY HILL, FL 32117

City Clerk's office: (386) 248-9441 - Fax: (386) 248-9448

HOLLY HILL
FLORIDA

City Commission Chamber
City Hall
1065 Ridgewood Avenue
Holly Hill, FL 32117

CITY COMMISSION MEMBERS

Mayor
Chris Via

District 1 - Commissioner
John Penny

District 2 - Commissioner
Penny Currie

District 3 - Commissioner
John C. Danio

District 4 - Commissioner
Roy Johnson

CITY MANAGER
Joseph Forte

CITY CLERK
Valerie Manning

1. CALL TO ORDER

a. Roll Call
b. Invocation by City Commissioner Roy Johnson
c. Pledge of Allegiance

2. PRESENTATIONS

1. Promotion of Lieutenant Chris Yates to Police Captain

   (Requested by Valerie Manning, City Clerk)

2. R & R Industries, Inc. - Christmas Club Food Boxing Recognition

   (Requested by Valerie Manning, City Clerk)

3. RECESS THE CC MTG & CONVENE AS THE CRA

4. CRA AGENDA

1. –2022-R-4 A Resolution of the City of Holly Hill, Community Redevelopment Agency, Florida, Authorizing the City Manager to Execute a Purchase and Sale Agreement with 627 Ridgewood LLC for the Property Located at 627 Ridgewood Avenue Parcel # 424401150080 Identified As, E 100 Ft of Lots 7&8 and Lots 9&10 Exc Road Blk 15M & C Holly Hill Per or 5715 Pg 2126 Per or 6656 Pg 1936 of the Public Records of Volusia County, Florida, and Authorizing the City Manager to Execute All Closing Documents, Providing for Severability; and Providing an Effective Date.

   (Requested by Joseph Forte, City Manager)

5. ADJOURN AS THE CRA & RECONVENE THE CC MTG

6. PUBLIC COMMENTS

7. APPROVAL OF MINUTES

1. Minutes - January 11, 2022 Regular City Commission Meeting

   (Requested by Valerie Manning, City Clerk)

8. CONSENT AGENDA - ITEMS (1 - 4)

The action proposed is stated for each item on the Consent Agenda. Unless a City Commissioner removes an item from the Consent Agenda, no discussion on individual items will occur and a single motion will approve all items. Is there anyone in the audience who wishes to speak on any item on the Consent Agenda?

1. Resolution –2022-R-5 A Resolution of the City of Holly Hill, Florida, Authorizing the City Manager to Execute a Purchase and Sale Agreement with 627 Ridgewood LLC for the Property Located at 627 Ridgewood Avenue Parcel # 424401150080 Identified As, E 100 Ft of Lots 7&8 and Lots 9&10 Exc Road Blk 15M & C Holly Hill Per or 5715 Pg 2126 Per or 6656 Pg 1936 of the Public Records of Volusia County, Florida, and Authorizing the City Manager to Execute All Closing Documents; Providing for Severability; and Providing for an Effective Date.

   (Requested by Joseph Forte, City Manager)

2. Resolution –2022-R-6 A Resolution of the City of Holly Hill, Volusia County, Florida Adopting an Infrastructure Priority List for the Coronavirus Local Fiscal Recovery Fund Established Under the American Rescue Plan Act; Providing for Conflicting Resolutions; Providing for Severability; and Providing for an Effective Date.

   (Requested by Antoine Khoury, Public Works)

3. Resolution –2022-R-7 A Resolution of the City Commission of the City of Holly Hill, Florida, Approving Continuing Contracts with Previously Approved Engineering Firms Selected through the Consultants Competitive Negotiations Act and Authorizing the City Manager to Execute Continuing Contracts with Each Selected Firm; Providing for Severability; and Providing for an Effective Date.

   (Requested by Antoine Khoury, Public Works)

4. Resolution –2022-R-8 A Resolution of the City of Holly Hill, Florida, Authorizing a Piggyback Contract for the Purchase of a P25 Radio Communications Equipment Using Volusia County Radio Purchasing Contract; Providing for Severability; and Providing for an Effective Date.

   (Requested by Valerie Manning, City Clerk)

9. REGULAR AGENDA

1. Resolution –2022-R-9 A Resolution of the City of Holly Hill, Florida, Approving the ECHO Grants-In-Aid Letter Contract, Legal Description of Project Property and Recording of Restrictive Covenants and Authorizing the City Manager to Execute These Documents; Providing for Severability; and Providing for an Effective Date.

   (Requested by Joseph Forte, City Manager)

2. Reorganization of Police Department to Include Reclassification of Positions and Hiring New Positions

   (Requested by Joseph Forte, City Manager)

10. PUBLIC HEARINGS - NONE

Please silence any cell phone, pager or noise making device as not to interrupt the meeting. Staff will introduce each item for consideration, with comments and recommendations. The applicant or appellant and supporters will be heard first. Those in opposition to the request will be heard next. Comments should be restricted to pertinent information regarding the agenda item under discussion. Out of courtesy to others, we ask that speakers keep their comments brief and try to limit these comments to information not previously discussed. Speakers should state their name and address clearly for the record. The City Clerk's office is required to retain any documents, photographs,

drawings, etc. that are shown to the City Commissioners in support of a position. The City Commission may ask questions of speakers or of staff members. The Mayor will then ask the City Commission to make a recommendation or motion. Once a motion has been made and seconded, discussion will be closed to the floor. Following City Commission discussion, a vote will be taken. During voting, Commissioners who do not cast objecting votes are considered to have voted in support of the motion.

11. COMMUNICATIONS

A. City Manager & Staff Comments
B. City Attorney Comments
C. City Commission Comments
D. Mayor's Comments

12. ADJOURNMENT

Website Address – www.hollyhillfl.org (City Clerk)

NOTICE – If any person decides to appeal any decision of the City Commission at this meeting, he/she will need a record of the proceedings and, for that purpose, he/she may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based. The City does not prepare or provide such a record.

For special accommodations, please notify the City Clerk's Office at least 72 hours in advance. (386) 248-9441

Help for the hearing impaired is available through the Assistive Listening System. Receivers can be obtained from the City Clerk's Office.

In accordance with the Americans with Disabilities Act (ADA), persons needing a special accommodation to participate in the Commission proceedings should contact the City Clerk's Office no later than three (3) days prior to the proceedings.

HOLLY HILL
FLORIDA

City Commission
1065 Ridgewood Ave
Holly Hill, FL 32117

SCHEDULED

Meeting: 01/25/22 06:00 PM
Department: City Clerk
Category: Presentation
Prepared By: Valerie Manning
Initiator: Valerie Manning
Sponsors:
DOC ID: 3608

PRESENTATION (ID # 3608)

Promotion of Lieutenant Chris Yates to Police Captain

A Message from Police Chief Miller:

It is with great pride and excitement that I, Chief Miller, announce the promotion of Chris Yates to the rank of Police Captain.

Captain Yates has been with the Holly Hill Police Department since 2004 and has served as a Patrol Officer and Investigator before rising through the ranks to the position of Captain.

I've been extremely honored to work alongside him and I know all of you feel the same way. He has truly been an asset to the Holly Hill Police Department.

City Commission
1065 Ridgewood Ave
Holly Hill, FL 32117

SCHEDULED

Meeting: 01/25/22 06:00 PM
Department: City Clerk
Category: Proclamation
Prepared By: Valerie Manning
Initiator: Valerie Manning
Sponsors:
DOC ID: 3605

PRESENTATION (ID # 3605)

R & R Industries, Inc. - Christmas Club Food Boxing Recognition

DISCUSSION:

For the past several years, R & R Industries, Inc., has provided a location for the Christmas Club's food boxing. R & R Industries, Inc., has worked out the process utilizing their employees to assist and have streamlined the process to box 1,000 meals to the community.

HOLLY HILL
FLORIDA

PROCLAMATION
BY THE MAYOR OF THE CITY OF HOLLY HILL, FLORIDA
RECOGNIZING AND APPRECIATING
R & R INDUSTRIES, INC.

WHEREAS, the Christmas Club was founded in 1931 by Julius Davidson to help families in need and has helped thousands of families since then; and

WHEREAS, R&R Industries has been in continuous operation from the same location in Holly Hill since 1948; and

WHEREAS, R&R Industries has played a major part in the success of the Christmas Club for the last three years; and

WHEREAS, R&R Industries provides a temporary home for the Christmas Club as way to help them do their good work; and

WHEREAS, this year, the Christmas Club bought and packed over 950 boxes of food that helped families in our communities who are in need.

Now, Therefore, I, Chris Via, Mayor of the City of Holly Hill, Florida and on behalf of the Holly Hill City Commission, do hereby recognize and appreciate R & R Industries, Inc., for participating in the annual Christmas Club for the community at-large during the holiday season.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the Seal of the City to be affixed this 25th day of January, 2022.

City of Holly Hill, Florida

_____
Chris Via, Mayor

Attachment: Proclamation - R & R Industries, Inc. - Christmas Club (3605 : R & R Industries, Inc. - Christmas Club Food Boxing Recognition)

STAFF REPORT
CITY OF HOLLY HILL, FLORIDA

City Commission
CRA Resolution

MEETING DATE: **January 25, 2022**
FROM: **Joseph Forte**
SUBJECT: **A Resolution of the City of Holly Hill, Community Redevelopment Agency, Florida, Authorizing the City Manager to Execute a Purchase and Sale Agreement with 627 Ridgewood LLC for the Property Located at 627 Ridgewood Avenue Parcel # 424401150080 Identified As, E 100 Ft of Lots 7&8 and Lots 9&10 Exc Road Blk 15M & C Holly Hill Per or 5715 Pg 2126 Per or 6656 Pg 1936 of the Public Records of Volusia County, Florida, and Authorizing the City Manager to Execute All Closing Documents, Providing for Severability; and Providing an Effective Date.**
NUMBER: **2022-R-4**
APPLICANT:
PLANNER:

DISCUSSION:

In 2011, the City of Holly Hill Community Redevelopment Agency purchased the property located at 627 Ridgewood Avenue for the purpose of eliminating a blighted property and to seek redevelopment of the property with a new building with a community purpose. Over the past ten years changes in the real-estate market has made it difficult to find a developer willing to purchase the property and construct a build and business acceptable to the city. Recently, Daytona Climbing, now known as 627 Ridgewood Avenue, have approached the city staff with a plan to develop a building with a minimum footprint of 16,000 sq. ft for the purpose of an indoor rock climbing wall business and associate businesses.

With the development of Pictona, Flight Gymnastics, Volusia Indoor Sports complex, and Tasso's gym, Daytona Climbing will be an exciting added fiscal fitness business opening in the City of Holly Hill.

FISCAL ANALYSIS:

The City will receive $200,000.00 for the sale of this property, which is consistent with an additional $50,000 be placed in escrow that upon completion of the project and a final certificate of occupancy will be reimbursed back to the developer.

STAFF RECOMMENDATION:

Staff recommends selling this property for the purpose redevelopment.

COMMISSION GOAL:

Goal #4: Provide proficient public health and safety services in terms of police and fire protection, water, storm water, waste water and solid waste management and disaster preparedness with a focus on intergovernmental collaboration, private sector partnerships, and utilization of technologies and proven innovations.

MOTION:

TO AUTHORIZE THE CITY MANAGER TO EXECUTE A PURCHASE AND SALE AGREEMENT AND AUTHORIZING THE CITY MANAGER TO EXECUTE ALL CLOSING DOCUMENTS ON BEHALF OF THE CITY AND THE COMMUNITY REDEVELOPMENT AGENCY.

ATTACHMENTS:

- 627 N Ridgewood Avenue - Executed Contract (PDF)
- EXHIBIT - B, Daytona Climbing Company (1) (PDF)
- Holly Hill Escrow Agreement, Daytona Climbing Company (PDF)

CRA Resolution No. 2022-4

A RESOLUTION OF THE CITY OF HOLLY HILL, COMMUNITY REDEVELOPMENT AGENCY, FLORIDA, AUTHORIZING THE CITY MANAGER TO EXECUTE A PURCHASE AND SALE AGREEMENT WITH 627 RIDGEWOOD LLC FOR THE PROPERTY LOCATED AT 627 RIDGEWOOD AVENUE PARCEL # 424401150080 IDENTIFIED AS, E 100 FT OF LOTS 7&8 AND LOTS 9&10 EXC ROAD BLK 15M & C HOLLY HILL PER OR 5715 PG 2126 PER OR 6656 PG 1936 OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, AND AUTHORIZING THE CITY MANAGER TO EXECUTE ALL CLOSING DOCUMENTS, PROVIDING FOR SEVERABILITY; AND PROVIDING AN EFFECTIVE DATE.

A RESOLUTION OF THE CITY OF HOLLY HILL, COMMUNITY REDEVELOPMENT AGENCY, FLORIDA, AUTHORIZING THE CITY MANAGER TO EXECUTE A PURCHASE AND SALE AGREEMENT WITH 627 RIDGEWOOD LLC FOR THE PROPERTY LOCATED AT 627 RIDGEWOOD AVENUE PARCEL # 424401150080 IDENTIFIED AS, E 100 FT OF LOTS 7&8 AND LOTS 9&10 EXC ROAD BLK 15M & C HOLLY HILL PER OR 5715 PG 2126 PER OR 6656 PG 1936 OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, AND AUTHORIZING THE CITY MANAGER TO EXECUTE ALL CLOSING DOCUMENTS, PROVIDING FOR SEVERABILITY; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the City of Holly Hill, Community Redevelopment Agency (CRA), purchased the property located at 627 Ridgewood Avenue for $350,000; and

WHEREAS, the purpose of the purchase was to eliminate a blighted area and consider a project for redevelopment; and

WHEREAS, the city and CRA has made several attempts to sell the property through public bidding and requests for proposals; and

WHEREAS, the City and CRA contracted with Marta Pasqual to sell the property with the city's approval of the buyer and buyers project; and

WHEREAS, the buyers 627 Ridgewood LLC has made an offer on the property of $200,000 in addition to an escrow payment of $50,000 that will be reimbursed upon the satisfactory completion of the project and a final certificate of occupancy.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY OF HOLLY HILL, COMMUNITY REDEVELOPMENT AGENCY, FLORIDA:

SECTION 1. The City of Holly Hill and the Holly Hill Community Redevelopment Agency is the owner of the property located at 627 Ridgewood Avenue.

SECTION 2. 627 Ridgewood LLC is a willing buyer and the City of Holly Hill and the Community Redevelopment Agency are willing sellers.

SECTION 3. The Community Redevelopment Agency authorizes the City Manager to execute a Purchase and Sale Agreement and to execute all related closing documents with the title company.

SECTION 4. SEVERABILITY. If any section, subsection sentence, clause, phrase or portion of the Resolution, or application hereof, is for any reason held invalid or unconstitutional by any Court, such portion or application shall be deemed a separate, distinct, and independent provision, and such holding shall not affect the validity of the remaining portions or application hereof.

SECTION 5. That all resolutions made in conflict with this resolution are hereby repealed.

SECTION 6. EFFECTIVE DATE. That this resolution become effective immediately upon its adoption.

APPROVED AND AUTHENTICATED on this 25th day of JANUARY, 2022.

Authentisign ID: B32FE25D-5173-EC11-94F6-281878CED430

Vacant Land Contract

1. Sale and Purchase: City of Holly Hill ("**Seller**") and 627 Ridgewood LLC ("**Buyer**") (the "parties") agree to sell and buy on the terms and conditions specified below the property ("Property") described as:
Address: 627 N RIDGEWOOD AVE, HOLLY HILL, FL 32117 - vacant land
Legal Description: E 100 FT OF LOTS 7 & 8 & LOTS 9 &10 EXC ROAD BLK 15 M & C HOLLY HILL PER OR 5715 PG 2126 PER OR 6656 PG 1936

SEC ___/TWP /___/RNG ___ of VOLUSIA County, Florida. Real Property ID No.: 424401150080
including all improvements existing on the Property and the following additional property: _____

2. Purchase Price: (U.S. currency) ..... $ 200,000.00
All deposits will be made payable to "Escrow Agent" named below and held in escrow by:
Escrow Agent's Name: Adams Cameron Title Services
Escrow Agent's Contact Person: Margie Patchett
Escrow Agent's Address: 444 Seabreeze Blvd., Suite 170, Daytona Beach, FL 32118
Escrow Agent's Phone: 386-258-3425
Escrow Agent's Email: orders@adamscamerontitle.com

(a) Initial deposit ($0 if left blank) (**Check if applicable**)
☐ accompanies offer
☒ will be delivered to Escrow Agent within 3 days (3 days if left blank)
after Effective Date ..... $ 5,000.00

(b) Additional deposit will be delivered to Escrow Agent (**Check if applicable**)
☐ within _____ days (10 days if left blank) after Effective Date
☐ within _____ days (3 days if left blank) after expiration of Feasibility Study Period ..... $ _____

(c) Total Financing (see Paragraph 6) (express as a dollar amount or percentage) ..... _____

(d) Other: _____ ..... $ _____

(e) Balance to close (not including **Buyer's** closing costs, prepaid items, and prorations) to be paid at closing by wire transfer or other Collected funds ..... $ 195,000.00

(f) ☐ (Complete only if purchase price will be determined based on a per unit cost instead of a fixed price.) The unit used to determine the purchase price is ☐ lot ☐ acre ☐ square foot ☐ other (specify): _____ prorating areas of less than a full unit. The purchase price will be $_____ per unit based on a calculation of total area of the Property as certified to **Seller** and **Buyer** by a Florida licensed surveyor in accordance with Paragraph 8(c). The following rights of way and other areas will be excluded from the calculation: _____

3. Time for Acceptance; Effective Date: Unless this offer is signed by **Seller** and **Buyer** and an executed copy delivered to all parties on or before January 12, 2022, this offer will be withdrawn and **Buyer's** deposit, if any, will be returned. The time for acceptance of any counter-offer will be 3 days after the date the counter-offer is delivered. **The "Effective Date" of this contract is the date on which the last one of the Seller and Buyer has signed or initialed and delivered this offer or the final counter-offer.**

4. Closing Date: This transaction will close on March 29, 2022 ("Closing Date"), unless specifically extended by other provisions of this contract. The Closing Date will prevail over all other time periods including, but not limited to, Financing and Feasibility Study periods. However, if the Closing Date occurs on a Saturday, Sunday, or national legal holiday, it will extend to 5:00 p.m. (where the Property is located) of the next business day. In the event insurance underwriting is suspended on Closing Date and **Buyer** is unable to obtain property insurance, **Buyer** may postpone closing for up to 5 days after the insurance underwriting suspension is lifted. If this transaction does not close for any reason, **Buyer** will immediately return all **Seller** provided documents and other items.

5. Extension of Closing Date: If Paragraph 6(b) is checked and Closing Funds from Buyer's lender(s) are not available on Closing Date due to Consumer Financial Protection Bureau Closing Disclosure delivery requirements

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Attachment: 627 N Ridgewood Avenue - Executed Contract (2022-R-4 : Sale of CRA Owned Property Located at 627 Ridgewood Avenue)

Electronically Signed using eSignOnline™ [Session ID : 2d36ebec-3824-46fd-8aee-23914d351b2b]

Authentisign ID: B32FE25D-5173-EC11-94F6-281878CED430

("CFPB Requirements"), if applicable, then Closing Date shall be extended for such period necessary to satisfy CFPB Requirements, provided such period shall not exceed 10 days.

6. Financing: (**Check as applicable**)

(a) ☒ **Buyer** will pay cash for the Property with no financing contingency.

(b) ☐ This contract is contingent on **Buyer** qualifying for and obtaining the commitment(s) or approval(s) specified below ("Financing") within _____ days after Effective Date (Closing Date or 30 days after Effective Date, whichever occurs first, if left blank) ("Financing Period"). **Buyer** will apply for Financing within _____ days after Effective Date (5 days if left blank) and will timely provide any and all credit, employment, financial, and other information required by the lender. If **Buyer**, after using diligence and good faith, cannot obtain the Financing within the Financing Period, either party may terminate this contract and **Buyer's** deposit(s) will be returned.

(1) ☐ **New Financing: Buyer** will secure a commitment for new third party financing for $_____ or _____% of the purchase price at (**Check one**) ☐ a fixed rate not exceeding _____% ☐ an adjustable interest rate not exceeding _____% at origination (a fixed rate at the prevailing interest rate based on **Buyer's** creditworthiness if neither choice is selected). **Buyer** will keep **Seller** and Broker fully informed of the loan application status and progress and authorizes the lender or mortgage broker to disclose all such information to **Seller** and Broker.

(2) ☐ **Seller Financing: Buyer** will execute a ☐ first ☐ second purchase money note and mortgage to **Seller** in the amount of $_____, bearing annual interest at _____% and payable as follows:

_____

The mortgage, note, and any security agreement will be in a form acceptable to **Seller** and will follow forms generally accepted in the county where the Property is located; will provide for a late payment fee and acceleration at the mortgagee's option if **Buyer** defaults; will give **Buyer** the right to prepay without penalty all or part of the principal at any time(s) with interest only to date of payment; will be due on conveyance or sale; will provide for release of contiguous parcels, if applicable; and will require **Buyer** to keep liability insurance on the Property, with **Seller** as additional named insured. **Buyer** authorizes **Seller** to obtain credit, employment, and other necessary information to determine creditworthiness for the financing. **Seller** will, within 10 days after Effective Date, give **Buyer** written notice of whether or not **Seller** will make the loan.

(3) ☐ **Mortgage Assumption: Buyer** will take title subject to and assume and pay existing first mortgage to

_____

LN#_____ in the approximate amount of $_____ currently payable at $_____ per month, including principal, interest, ☐ taxes and insurance, and having a ☐ fixed ☐ other (describe) _____ interest rate of _____% which ☐ will ☐ will not escalate upon assumption. Any variance in the mortgage will be adjusted in the balance due at closing with no adjustment to purchase price. **Buyer** will purchase **Seller's** escrow account dollar for dollar. If the interest rate upon transfer exceeds _____% or the assumption/transfer fee exceeds $_____, either party may elect to pay the excess, failing which this contract will terminate; and **Buyer's** deposit(s) will be returned. If the lender disapproves **Buyer**, this contract will terminate; and **Buyer's** deposit(s) will be returned.

7. Assignability: (**Check one**) **Buyer** ☐ may assign and thereby be released from any further liability under this contract, ☐ may assign but not be released from liability under this contract, or ☒ may not assign this contract.

8. Title: Seller has the legal capacity to and will convey marketable title to the Property by ☒ statutory warranty deed ☐ special warranty deed ☐ other (specify) _____, free of liens, easements, and encumbrances of record or known to **Seller**, but subject to property taxes for the year of closing; covenants, restrictions, and public utility easements of record; existing zoning and governmental regulations; and (list any other matters to which title will be subject) _____, provided there exists at closing no violation of the foregoing.

(a) Title Evidence: The party who pays for the owner's title insurance policy will select the closing agent and pay for the title search, including tax and lien search (including municipal lien search) if performed, and all other fees charged by closing agent. **Seller** will deliver to **Buyer**, at (**Check one**) ☒ **Seller's** ☐ **Buyer's** expense and (**Check one**) ☒ within 30 days after Effective Date ☐ at least _____ days before Closing Date, (**Check one**)

(1) ☒ a title insurance commitment by a Florida licensed title insurer setting forth those matters to be discharged by **Seller** at or before closing and, upon **Buyer** recording the deed, an owner's policy in the

Attachment: 627 N Ridgewood Avenue - Executed Contract (2022-R-4 : Sale of CRA Owned Property Located at 627 Ridgewood Avenue)

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amount of the purchase price for fee simple title subject only to the exceptions stated above. If **Buyer** is paying for the owner's title insurance policy and **Seller** has an owner's policy, **Seller** will deliver a copy to **Buyer** within 15 days after Effective Date.

(2) ☐ an abstract of title, prepared or brought current by an existing abstract firm or certified as correct by an existing firm. However, if such an abstract is not available to **Seller**, then a prior owner's title policy acceptable to the proposed insurer as a base for reissuance of coverage may be used. The prior policy will include copies of all policy exceptions and an update in a format acceptable to **Buyer** from the policy effective date and certified to **Buyer** or **Buyer's** closing agent together with copies of all documents recited in the prior policy and in the update. If such an abstract or prior policy is not available to **Seller**, then (1) above will be the title evidence.

(b) Title Examination: After receipt of the title evidence, **Buyer** will, within 10 days (10 days if left blank) but no later than Closing Date, deliver written notice to **Seller** of title defects. Title will be deemed acceptable to **Buyer** if (i) **Buyer** fails to deliver proper notice of defects or (ii) **Buyer** delivers proper written notice and **Seller** cures the defects within 30 days (30 days if left blank) ("Cure Period") after receipt of the notice. If the defects are cured within the Cure Period, closing will occur within 10 days after receipt by **Buyer** of notice of such cure. **Seller** may elect not to cure defects if **Seller** reasonably believes any defect cannot be cured within the Cure Period. If the defects are not cured within the Cure Period, **Buyer** will have 10 days after receipt of notice of **Seller's** inability to cure the defects to elect whether to terminate this contract or accept title subject to existing defects and close the transaction without reduction in purchase price.

(c) Survey: Buyer may, at **Buyer's** expense, have the Property surveyed and must deliver written notice to **Seller**, within 5 days after receiving survey but not later than 5 days before Closing Date, of any encroachments on the Property, encroachments by the Property's improvements on other lands, or deed restriction or zoning violations. Any such encroachment or violation will be treated in the same manner as a title defect and **Seller's** and **Buyer's** obligations will be determined in accordance with Paragraph 8(b).

(d) Ingress and Egress: Seller warrants that the Property presently has ingress and egress.

9. Property Condition: Seller will deliver the Property to **Buyer** at closing in its present "as is" condition, with conditions resulting from **Buyer's** Inspections and casualty damage, if any, excepted. **Seller** will not engage in or permit any activity that would materially alter the Property's condition without the **Buyer's** prior written consent.

(a) Inspections: (**Check (1) or (2)**)

(1) ☒ **Feasibility Study: Buyer** will, at **Buyer's** expense and within 60 days (30 days if left blank) ("Feasibility Study Period") after Effective Date and in **Buyer's** sole and absolute discretion, determine whether the Property is suitable for **Buyer's** intended use. During the Feasibility Study Period, **Buyer** may conduct a Phase 1 environmental assessment and any other tests, analyses, surveys, and investigations ("Inspections") that **Buyer** deems necessary to determine to **Buyer's** satisfaction the Property's engineering, architectural, and environmental properties; zoning and zoning restrictions; subdivision statutes; soil and grade; availability of access to public roads, water, and other utilities; consistency with local, state, and regional growth management plans; availability of permits, government approvals, and licenses; and other inspections that **Buyer** deems appropriate. If the Property must be rezoned, **Buyer** will obtain the rezoning from the appropriate government agencies. **Seller** will sign all documents **Buyer** is required to file in connection with development or rezoning approvals. **Seller** gives **Buyer**, its agents, contractors, and assigns, the right to enter the Property at any time during the Feasibility Study Period for the purpose of conducting Inspections, provided, however, that **Buyer**, its agents, contractors, and assigns enter the Property and conduct Inspections at their own risk. **Buyer** will indemnify and hold **Seller** harmless from losses, damages, costs, claims, and expenses of any nature, including attorneys' fees, expenses, and liability incurred in application for rezoning or related proceedings, and from liability to any person, arising from the conduct of any and all Inspections or any work authorized by **Buyer**. **Buyer** will not engage in any activity that could result in a construction lien being filed against the Property without **Seller's** prior written consent. If this transaction does not close, **Buyer** will, at **Buyer's** expense, (i) repair all damages to the Property resulting from the Inspections and return the Property to the condition it was in before conducting the Inspections and (ii) release to **Seller** all reports and other work generated as a result of the Inspections.

Before expiration of the Feasibility Study Period, **Buyer** must deliver written notice to **Seller** of **Buyer's** determination of whether or not the Property is acceptable. **Buyer's** failure to comply with this notice requirement will constitute acceptance of the Property as suitable for **Buyer's** intended use in its "as is" condition. If the Property is unacceptable to **Buyer** and written notice of this fact is timely delivered to **Seller**, this contract will be deemed terminated, and **Buyer's** deposit(s) will be returned.

Attachment: 627 N Ridgewood Avenue - Executed Contract (2022-R-4 : Sale of CRA Owned Property Located at 627 Ridgewood Avenue)

Electronically Signed using eSignOnline™ [Session ID : 2d36ebec-3824-46fd-8aee-23914d351b2b]

(2) ☐ **No Feasibility Study: Buyer** is satisfied that the Property is suitable for **Buyer's** purposes, including being satisfied that either public sewerage and water are available to the Property or the Property will be approved for the installation of a well and/or private sewerage disposal system and that existing zoning and other pertinent regulations and restrictions, such as subdivision or deed restrictions, concurrency, growth management, and environmental conditions, are acceptable to **Buyer**. This contract is not contingent on **Buyer** conducting any further investigations.

(b) Government Regulations: Changes in government regulations and levels of service which affect **Buyer's** intended use of the Property will not be grounds for terminating this contract if the Feasibility Study Period has expired or if Paragraph 9(a)(2) is selected.

(c) Flood Zone: Buyer is advised to verify by survey, with the lender, and with appropriate government agencies which flood zone the Property is in, whether flood insurance is required, and what restrictions apply to improving the Property and rebuilding in the event of casualty.

(d) Coastal Construction Control Line ("CCCL"): If any part of the Property lies seaward of the CCCL as defined in Section 161.053, Florida Statutes, **Seller** will provide **Buyer** with an affidavit or survey as required by law delineating the line's location on the Property, unless **Buyer** waives this requirement in writing. The Property being purchased may be subject to coastal erosion and to federal, state, or local regulations that govern coastal property, including delineation of the CCCL, rigid coastal protection structures, beach nourishment, and the protection of marine turtles. Additional information can be obtained from the Florida Department of Environmental Protection, including whether there are significant erosion conditions associated with the shore line of the Property being purchased.

☒ **Buyer** waives the right to receive a CCCL affidavit or survey.

10. Closing Procedure; Costs: Closing will take place in the county where the Property is located and may be conducted by mail or electronic means. If title insurance insures **Buyer** for title defects arising between the title binder effective date and recording of **Buyer's** deed, closing agent will disburse at closing the net sale proceeds to **Seller** (in local cashier's check if **Seller** requests in writing at least 5 days before closing) and brokerage fees to Broker as per Paragraph 21. In addition to other expenses provided in this contract, **Seller** and **Buyer** will pay the costs indicated below.

(a) Seller Costs:
Taxes on deed
Recording fees for documents needed to cure title
Title evidence (if applicable under Paragraph 8)
Estoppel Fee(s)
Other: _____

(b) Buyer Costs:
Taxes and recording fees on notes and mortgages
Recording fees on the deed and financing statements
Loan expenses
Title evidence (if applicable under Paragraph 8)
Lender's title policy at the simultaneous issue rate
Inspections
Survey
Insurance
Other: _____

(c) Prorations: The following items will be made current and prorated as of the day before Closing Date: real estate taxes (including special benefit tax liens imposed by a CDD), interest, bonds, assessments, leases, and other Property expenses and revenues. If taxes and assessments for the current year cannot be determined, the previous year's rates will be used with adjustment for any exemptions.

(d) Special Assessment by Public Body: Regarding special assessments imposed by a public body, **Seller** will pay (i) the full amount of liens that are certified, confirmed, and ratified before closing and (ii) the amount of the last estimate of the assessment if an improvement is substantially completed as of Effective Date but has not resulted in a lien before closing; and **Buyer** will pay all other amounts. If special assessments may be paid in installments, ☐ **Seller** ☒ **Buyer** (**Buyer** if left blank) will pay installments due after closing. If **Seller** is checked, **Seller** will pay the assessment in full before or at the time of closing. Public body does not include a Homeowners' or Condominium Association.

(e) PROPERTY TAX DISCLOSURE SUMMARY: BUYER SHOULD NOT RELY ON THE **SELLER'S** CURRENT PROPERTY TAXES AS THE AMOUNT OF PROPERTY TAXES THAT **BUYER** MAY BE OBLIGATED TO PAY IN THE YEAR SUBSEQUENT TO PURCHASE. A CHANGE OF OWNERSHIP OR PROPERTY

Attachment: 627 N Ridgewood Avenue - Executed Contract (2022-R-4 : Sale of CRA Owned Property Located at 627 Ridgewood Avenue)

Authentisign ID: B32FE25D-5173-EC11-94F6-281878CED430

IMPROVEMENTS TRIGGERS REASSESSMENTS OF THE PROPERTY THAT COULD RESULT IN HIGHER PROPERTY TAXES. IF YOU HAVE ANY QUESTIONS CONCERNING VALUATION, CONTACT THE COUNTY PROPERTY APPRAISER'S OFFICE FOR FURTHER INFORMATION.

(f) Foreign Investment in Real Property Tax Act ("FIRPTA"): If **Seller** is a "foreign person" as defined by FIRPTA, **Seller** and **Buyer** will comply with FIRPTA, which may require **Seller** to provide additional cash at closing.

(g) 1031 Exchange: If either **Seller** or **Buyer** wish to enter into a like-kind exchange (either simultaneously with closing or after) under Section 1031 of the Internal Revenue Code ("Exchange"), the other party will cooperate in all reasonable respects to effectuate the Exchange including executing documents, provided, however, that the cooperating party will incur no liability or cost related to the Exchange and that the closing will not be contingent upon, extended, or delayed by the Exchange.

11. Computation of Time: Calendar days will be used when computing time periods, except time periods of 5 days or less. Time periods of 5 days or less will be computed without including Saturday, Sunday, or national legal holidays specified in 5 U.S.C. 6103(a). Any time period ending on a Saturday, Sunday, or national legal holiday will extend until 5:00 p.m. (where the Property is located) of the next business day. **Time is of the essence in this contract.**

12. Risk of Loss; Eminent Domain: If any portion of the Property is materially damaged by casualty before closing or **Seller** negotiates with a governmental authority to transfer all or part of the Property in lieu of eminent domain proceedings or an eminent domain proceeding is initiated, **Seller** will promptly inform **Buyer**. Either party may terminate this contract by written notice to the other within 10 days after **Buyer's** receipt of **Seller's** notification, and **Buyer's** deposit(s) will be returned, failing which **Buyer** will close in accordance with this contract and receive all payments made by the governmental authority or insurance company, if any.

13. Force Majeure: Seller or **Buyer** will not be required to perform any obligation under this contract or be liable to each other for damages so long as the performance or non-performance of the obligation is delayed, caused, or prevented by an act of God or force majeure. An "act of God or "force majeure" is defined as hurricanes, earthquakes, floods, fire, unusual transportation delays, wars, insurrections, and any other cause not reasonably within the control of **Seller** or **Buyer** and which by the exercise of due diligence the non-performing party is unable in whole or in part to prevent or overcome. All time periods, including Closing Date, will be extended for the period that the act of God or force majeure is in place. However, in the event that such act of God or force majeure event continues beyond 30 days, either party may terminate this contract by delivering written notice to the other; and **Buyer's** deposit(s) will be returned.

14. Notices: All notices will be in writing and delivered to the parties and Broker by mail, personal delivery, or electronic means. **Buyer's failure to timely deliver written notice to Seller, when such notice is required by this contract, regarding any contingency will render that contingency null and void, and this contract will be construed as if the contingency did not exist. Any notice, document, or item delivered to or received by an attorney or licensee (including a transactions broker) representing a party will be as effective as if delivered to or received by that party.**

15. Complete Agreement; Persons Bound: This contract is the entire agreement between **Seller** and **Buyer**. **Except for brokerage agreements, no prior or present agreements will bind Seller, Buyer, or Broker unless incorporated into this contract.** Modifications of this contract will not be binding unless in writing, signed or initialed, and delivered by the party to be bound. Electronic signatures will be acceptable and binding. This contract, signatures, initials, documents referenced in this contract, counterparts, and written modifications communicated electronically or on paper will be acceptable for all purposes, including delivery, and will be binding. Handwritten or typewritten terms inserted in or attached to this contract prevail over preprinted terms. If any provision of this contract is or becomes invalid or unenforceable, all remaining provisions will continue to be fully effective. **Seller** and **Buyer** will use diligence and good faith in performing all obligations under this contract. This contract will not be recorded in any public record. The terms "**Seller**," "**Buyer**," and "Broker" may be singular or plural. This contract is binding on the heirs, administrators, executors, personal representatives, and assigns, if permitted, of **Seller**, **Buyer**, and Broker.

16. Default and Dispute Resolution: This contract will be construed under Florida law. This Paragraph will survive closing or termination of this contract.

(a) Seller Default: If **Seller** fails, neglects, or refuses to perform **Seller's** obligations under this contract, **Buyer** may elect to receive a return of **Buyer's** deposit(s) without thereby waiving any action for damages resulting from **Seller's** breach and may seek to recover such damages or seek specific performance. **Seller** will also be liable for the full amount of the brokerage fee.

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(b) Buyer Default: If **Buyer** fails, neglects, or refuses to perform **Buyer's** obligations under this contract, including payment of deposit(s), within the time(s) specified, **Seller** may elect to recover and retain the deposit(s), paid and agreed to be paid, for the account of **Seller** as agreed upon liquidated damages, consideration for execution of this contract, and in full settlement of any claims, whereupon **Seller** and **Buyer** will be relieved from all further obligations under this contract; or **Seller**, at **Seller's** option, may proceed in equity to enforce **Seller's** rights under this contract.

17. Attorney's Fees; Costs: In any litigation permitted by this Contract, the prevailing party shall be entitled to recover from the non-prevailing party costs and fees, including reasonable attorney's fees, incurred in conducting the litigation. This Paragraph 17 shall survive Closing or termination of this Contract.

18. Escrow Agent; Closing Agent: **Seller** and **Buyer** authorize Escrow Agent and closing agent (collectively "Agent") to receive, deposit, and hold funds and other items in escrow and, subject to Collection, disburse them upon proper authorization and in accordance with Florida law and the terms of this contract, including disbursing brokerage fees. "Collection" or "Collected" means any checks tendered or received have become actually and finally collected and deposited in the account of Agent. The parties agree that Agent will not be liable to any person for misdelivery of escrowed items to **Seller** or **Buyer**, unless the misdelivery is due to Agent's willful breach of this contract or gross negligence. If Agent interpleads the subject matter of the escrow, Agent will pay the filing fees and costs from the deposit and will recover reasonable attorneys' fees and costs to be paid from the escrowed funds or equivalent and charged and awarded as court costs in favor of the prevailing party.

19. Professional Advice; Broker Liability: Broker advises **Seller** and **Buyer** to verify all facts and representations that are important to them and to consult an appropriate professional for legal advice (for example, interpreting this contract, determining the effect of laws on the Property and this transaction, status of title, foreign investor reporting requirements, the effect of property lying partially or totally seaward of the CCCL, etc.) and for tax, property condition, environmental, and other specialized advice. **Buyer** acknowledges that Broker does not reside in the Property and that all representations (oral, written, or otherwise) by Broker are based on **Seller** representations or public records. **Buyer agrees to rely solely on Seller, professional inspectors, and government agencies for verification of the Property condition and facts that materially affect Property value. Seller** and **Buyer** respectively will pay all costs and expenses, including reasonable attorneys' fees at all levels, incurred by Broker and Broker's officers, directors, agents, and employees in connection with or arising from **Seller's** or **Buyer's** misstatement or failure to perform contractual obligations. **Seller** and **Buyer** hold harmless and release Broker and Broker's officers, directors, agents, and employees from all liability for loss or damage based on (i) **Seller's** or **Buyer's** misstatement or failure to perform contractual obligations; (ii) the use or display of listing data by third parties, including, but not limited to, photographs, images, graphics, video recordings, virtual tours, drawings, written descriptions, and remarks related to the Property; (iii) Broker's performance, at **Seller's** or **Buyer's** request, of any task beyond the scope of services regulated by Chapter 475, Florida Statutes, as amended, including Broker's referral, recommendation, or retention of any vendor; (iv) products or services provided by any vendor; and (v) expenses incurred by any vendor. **Seller** and **Buyer** each assume full responsibility for selecting and compensating their respective vendors. This Paragraph will not relieve Broker of statutory obligations. For purposes of this Paragraph, Broker will be treated as a party to this contract. This Paragraph will survive closing.

20. Commercial Real Estate Sales Commission Lien Act: If the Property is commercial real estate as defined by Section 475.701, Florida Statutes, the following disclosure will apply: The Florida Commercial Real Estate Sales Commission Lien Act provides that when a broker has earned a commission by performing licensed services under a brokerage agreement with you, the broker may claim a lien against your net sales proceeds for the broker's commission. The broker's lien rights under the act cannot be waived before the commission is earned.

21. Brokers: The brokers named below are collectively referred to as "Broker." **Instruction to closing agent: Seller** and **Buyer** direct closing agent to disburse at closing the full amount of the brokerage fees as specified in separate brokerage agreements with the parties and cooperative agreements between the Brokers, except to the extent Broker has retained such fees from the escrowed funds. This Paragraph will not be used to modify any MLS or other offer of compensation made by **Seller** or **Seller's** Broker to **Buyer's** Broker.

(a) Adams Cameron & Co. REALTORS (**Seller's** Broker) will be compensated by ☒ **Seller** ☐ **Buyer** ☐ both parties pursuant to ☒ a listing agreement ☐ other (specify): _____

(b) eXp Realty (**Buyer's** Broker) will be compensated by ☐ **Seller** ☐ **Buyer** ☐ both parties ☒ **Seller's** Broker pursuant to ☒ a MLS offer of compensation ☐ other (specify): _____

Buyer (JF) (____) and Seller (JF) (____) acknowledge receipt of a copy of this page, which is 6 of 7 pages.

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22. Addenda: The following additional terms are included in the attached addenda and incorporated into this Contract (**Check if applicable**)

☐ A. Back-up Contract

☐ B. Other _____

23. Additional Terms: Attached:

Articles of Organization for 627 Ridgewood LLC showing Garrett D Zinke as authorized representative

~~Exhibit "B" showing Requirements for 627 Ridgewood LLC Project~~ Exhibit B/Addendum JF

$50,000 Escrow Agreement

COUNTER-OFFER/REJECTION

☐ Seller counters Buyer's offer (to accept the counter-offer, Buyer must sign or initial the counter-offered terms and deliver a copy of the acceptance to Seller).

☐ Seller rejects Buyer's offer

This is intended to be a legally binding contract. If not fully understood, seek the advice of an attorney before signing.

Buyer: _____ Date: 01/11/22

Print name: 627 Ridgewood LLC

Buyer: _____ Date: _____

Print name: _____

Buyer's address for purpose of notice:

Address: 107 Park Avenue, Daytona Beach, FL 32118

Phone: _____ Fax: _____ Email: _____

Seller: Joseph Forte Date: 01/11/2022 10:52 AM EST

Print name: CITY OF HOLLY HILL - Joe Forte

Seller: _____ Date: _____

Print name: _____

Seller's address for purpose of notice:

Address: 1065 Ridgewood Ave, Holly Hill, FL 32117

Phone: 386-248-9438 Fax: _____ Email: jforte@hollyhillfl.org

Effective Date: _____ **(The date on which the last party signed or initialed and delivered the final offer or counter offer.)**

Florida REALTORS® makes no representation as to the legal validity or adequacy of any provision of this form in any specific transaction. This standardized form should not be used in complex transactions or with extensive riders or additions. This form is available for use by the entire real estate industry and is not intended to identify the user as REALTOR®. REALTOR® is a registered collective membership mark which may be used only by real estate licensees who are members of the NATIONAL ASSOCIATION OF REALTORS® and who subscribe to its Code of Ethics. The copyright laws of United States (17 U.S. Code) forbid the unauthorized reproduction of this form by any means including facsimile or computerized forms.

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ADDENDUM

WHEREAS, on the 11th day of January, 2021, the City of Holly Hill (City) and 627 Ridgewood, LLC (Buyer) have entered into a Purchase and Sale Agreement for the purchase of the Subject Property for a purchase price of $200,000.00.

WHEREAS, the City is selling the Subject Property to the Buyer due to the Buyer's proposed development plans for the Subject Property. The proposed development is described in Exhibit A hereto.

WHEREAS, the City would not sell the Subject Property for this purchase price if the Buyer was not going to develop the Subject Property.

WHEREAS, the City requires assurance that the Buyer will develop the Subject Property pursuant to development plans attached as Exhibit A within a reasonable time of acquiring title to the Subject Property.

NOW, THEREFORE, for and in mutual consideration provided herein and the terms and conditions of the Purchase and Sale Agreement, the undersigned parties hereby agree to the following:

1) At the closing of the transaction in the Purchase and Sale Agreement, the Buyer shall deposit $50,000.00 to be held by escrow agent, Scott E. Simpson, PA, pursuant to the terms and conditions herein and the Escrow Agreement attached as Exhibit B.

2) The terms and conditions of the Escrow Agreement shall be the following:

a) If the Buyer receives a Certificate of Occupancy from the City by June 28, 2024 for the development described in Exhibit A, the Escrow Agent shall release the $50,000.00 to the Buyer.

b) If the Buyer does not receive a Certificate of Occupancy from the City by June 28, 2024 for the development described in Exhibit A and deliver it to the Escrow Agent by July 8, 2024, the Escrow Agent shall release the $50,000 to the City.

3) The Escrow Agent shall be Scott E. Simpson, PA and shall serve according to the terms and conditions of the Escrow Agreement attached as Exhibit B.

City of Holly Hill

BY: _____

TITLE: City Manager

DATE: 1-11-2022

627 Ridgewood, LLC

BY: _____

TITLE: Managing Member

DATE: 01/11/22

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EXHIBIT "B"

627 N Ridgewood Ave, Holly Hill, FL 32117

Requirements for the 627 Ridgewood LLC Project shall be:

1) Buyer shall request to rezone the Subject Property to a planned development (PD) zoning.

2) The Project shall be a building with a minimum footprint of 16,000 sq. ft. with a construction budget of approximately $2.5 million.

3) The building shall be constructed of a steel frame with a façade consistent with the Community Development Agency design standards. The Buyer shall request during the PD negotiation process for the building to have a ceiling height of 40 feet and will include as many windows on the west side facing Ridgewood Avenue as reasonably possible. The remaining space, where possible, will have a second floor outdoor patio space and additional seating at the ground level.

4) The Buyer will occupy at least 50% of the space of the building for its rock climbing operations. The remaining space may be designed and constructed with the intention of leasing the space to other businesses whose uses shall be consistent with the modified CC1 and Overlay District and approved in the Planned Development Agreement.

Joseph Forte AuthentiSIGN 01/11/22

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ESCROW AGREEMENT

THIS ESCROW AGREEMENT (the "Agreement") is made and entered into this 10 day of January, 2022, by and among CITY OF HOLLY HILL (City), 627 RIDGEWOOD, LLC (Buyer) and SCOTT E. SIMPSON, PA ("Escrow Agent").

RECITALS

WHEREAS, the Buyer is under contract to purchase from the City a parcel of vacant real property located at 627 Ridgewood Avenue, Holly Hill, Florida and with a legal description attached hereto marked as Exhibit A (Subject Property). Contract for S & P JF

WHEREAS, the City agreed to sell the Subject Property for $200,000.00 due to the development project the Buyer proposed to construct on the Subject Property, a description of the project is attached as Exhibit B./Addendum JF

WHEREAS, to insure that the project proposed by the Buyer is constructed, the City and Buyer entered into an Addendum to the Purchase and Sales Contract to require the Buyer to deposit a performance guarantee of $50,000.00 to be held in escrow.

WHEREAS, if the Buyer obtains a Certificate of Occupancy by a certain date for the project described in Exhibit B, the performance guarantee payment of $50,000.00 will be returned to the Buyer.

WHEREAS, if the Buyer fails to obtain a Certificate of Occupancy for the project described in Exhibit B by a certain date, the performance guarantee of $50,000.00 shall be paid to the City.

NOW THEREFORE, in consideration of the foregoing premises and of the respective agreements and covenants contained herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and intending to be legally bound hereby, the parties hereto agree as follows:

ARTICLE 1
ACCEPTANCE OF APPOINTMENT AND DEPOSIT INTO ESCROW

Section 1.1 WHEREAS Recitals. The recitals in the above WHEREAS are hereby incorporated herein as is specifically set forth.

Section 1.2 Acceptance of Appointment as Escrow Agent. The Escrow Agent hereby accepts the appointment as Escrow Agent and agrees to hold and distribute all Escrow Funds in accordance with the terms and conditions of this Agreement.

Section 1.3 Deposit of Escrow Funds. Upon the full execution of this Agreement and at the closing of the Buyer's acquisition of the Subject Property from the Seller, the Buyer shall deposit the $50,000.00 performance guarantee to be held in the Scott E. Simpson Trust Account pursuant to the terms and condition of this Agreement.

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ARTICLE 2
RELEASE FROM ESCROW

Section 2.1 Release of Escrow Funds. Escrow Agent shall release the $50,000.00 performance guarantee to the Buyer if the Buyer receives a Certificate of Occupancy from the City upon completion of the project described in Exhibit B on the Subject Property by June 28, 2024. In the event the Buyer does not obtain a Certificate of Occupancy from the City for the project described in Exhibit B on the Subject Property by June 28, 2024, the Escrow Agent shall release the $50,000.00 performance guarantee to the City.

The above determination by the Escrow Agent shall be based solely on whether the City has issued a Certificate of Occupancy for the project described in Exhibit B on the Subject Property by June 28, 2024, and a copy of said Certificate of Occupancy must be provided to the Escrow Agent by July 8, 2024.

Section 2.2 Disbursement into Court. Notwithstanding anything in this Agreement to the contrary, if at any time there shall exist any dispute between any of the parties, or any other obligation of the Escrow Agent hereunder, or if at any time the Escrow Agent is unable to determine, to the Escrow Agent's reasonable satisfaction, the proper disposition of the Escrow Funds or the Escrow Agent's proper actions with respect to its obligations hereunder, then the Escrow Agent may, in its reasonable discretion, take either or both of the following actions: (i) suspend the performance of any of its obligations under this Agreement until such dispute or uncertainty shall be resolved to the reasonable satisfaction of the Escrow Agent; and/or (ii) petition (by means of an interpleader action or any other appropriate method) any court of competent jurisdiction in Volusia County, Florida for instructions with respect to such dispute or uncertainty, and pay into and/or deposit with such court all Escrow Funds held by Escrow Agent, and deliver the Escrow Funds for holding and disposition in accordance with the instructions of such court.

ARTICLE 3
RIGHTS/RESPONSIBILITIES OF ESCROW AGENT AND RELEASE OF ESCROW AGENT

Section 3.1 Rights and Responsibilities of the Escrow Agent. The duties and responsibilities of the Escrow Agent shall be limited to those expressly set forth in this Agreement.

ARTICLE 4
MISCELLANEOUS

Section 4.1 Notices. All notices, requests, consents or other communications required or permitted under this Agreement shall be in writing and shall be deemed to have been duly given or delivered by any party: (a) when received by such party if delivered by hand, (b) upon confirmation when delivered by fax, (c) within one day after being sent by recognized overnight delivery service, or (d) within three business days after being mailed by certified U.S. mail, postage prepaid, and in each case addressed as provided for in the Contract. Any party by written notice to the other parties pursuant to this section may change the address or the persons to whom notices or copies thereof shall be directed.

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Section 4.2 Amendment. This Agreement may be amended or modified only by an instrument in writing duly executed by the parties to this Agreement.

Section 4.3 Attorneys' Fees and Costs. In connection with any litigation arising out of the enforcement or interpretation of this Agreement, the prevailing party shall be entitled to recover from the other, all costs incurred, including reasonable attorneys' fees, including without limitation trial and appellate proceedings and in bankruptcy.

Section 4.4 Counterparts, Faxes and Emails: This Agreement may be executed in counterparts, and signatures on copies of this Agreement which are transmitted by facsimile or email shall be deemed originals for all purposes.

The parties hereto have caused this Agreement to be executed by their duly authorized officers as of the day and year first above written.

Witness

Peggy C Collier

Valerie Manning

Peggy C. Collier

Valerie Manning

Escrow Agent

Scott E. Simpson, P.A.

Date: 1/10/22

City of Holly Hill

By:

Title: City Manager

Date: 1 - 11 - 2022

AuthentiSIGN

Nathan Mowery 01/11/22

627 Ridgewood, LLC

AuthentiSIGN

By:

Title: Managing Member

Date: 01/11/22

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AFFILIATED BUSINESS ARRANGEMENT DISCLOSURE STATEMENT

TO: Consumer
FROM: eXp Realty
PROPERTY: 627 Ridgewood Ave, Holly Hill, FL 32117
DATE: 01/11/22

This is to give you notice that eXp World Holdings, Inc., the parent corporation of eXp Realty, LLC, eXp Realty of California, Inc., eXp Realty North, LLC, eXp Realty of Connecticut, LLC, and eXp Realty Associates, LLC (hereinafter collectively referred to as "**eXp Realty**"), has a business relationship with those companies listed in this Disclosure Statement. Because of these relationships, the referral of business to any of the companies listed below may provide us, the related parties noted herein and/or their investors, a financial or other benefit.

In connection with the purchase or sale of this property, you may need mortgage financing, title insurance and/or closing services. We recommend IntroLend First Cloud, LLC ("IntroLend") for mortgage financing, and SilverLine Title & Escrow, LLC ("SilverLine Title") for title insurance and closing services. eXp Realty is a subsidiary of eXp World Holdings, Inc., the parent corporation. eXp World Holdings, Inc. has a 50% ownership interest in First Cloud Investment Group, LLC with the other 50% owned by its affiliated real estate agents that have chosen to purchase an ownership interest. First Cloud Investment Group, LLC owns 100% of IntroLend First Cloud, LLC. Neither eXp World Holdings, Inc. nor any of its subsidiaries have an ownership interest in any other investors that have ownership interests in First Cloud Investment Group, LLC. eXp Silverline Ventures, LLC, a subsidiary of eXp World Holdings, Inc., has a 50% ownership interest in SilverLine Title. Neither eXp World Holdings, Inc. nor any of its subsidiaries have an ownership interest in Orange & Blue Holdings 3.0, LLC, which has ownership interest in SilverLine Title.

eXp Realty has a business relationship with, but no ownership interest in, America's Preferred Home Warranty, Inc. As such, eXp Realty, or its affiliates, may receive financial benefit in the form of marketing fees or fees for services rendered. You are not required to obtain a home warranty and or obtain a home warranty from this America's Preferred Home Warranty, Inc. as a condition to using eXp Realty's brokerage services.

IntroLend First Cloud, LLC is a mortgage broker. The estimated lender fees listed below can vary and could include additional charges depending upon factors such as the loan product you select and the State where the property is located. There may also be other fees/charges relating to services provided by additional third party settlement service providers. The estimated charges for the settlement services provided by IntroLend First Cloud, LLC are detailed on the Good Faith Estimate being provided to you by your loan officer.

Set forth below is the estimated charge or range of charges for the settlement services listed. You are NOT required to use the listed provider as a condition for the purchase, sale, or refinance of the subject property. THERE ARE FREQUENTLY OTHER SETTLEMENT SERVICE PROVIDERS AVAILABLE WITH SIMILAR SERVICES. YOU ARE FREE TO SHOP AROUND TO DETERMINE THAT YOU ARE RECEIVING THE BEST SERVICES AND THE BEST RATE FOR THESE SERVICES.

COMPANY	ESTIMATED CHARGE OR RANGE OF CHARGES
IntroLend First Cloud, LLC ("IntroLend")	Loan Origination Charge 0-3.00% of loan amount (may include 3rd party fees)

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Authentisign ID: B32FE25D-5173-EC11-94F6-281878CED430

COMPANY	ESTIMATED CHARGE OR RANGE OF CHARGES
This company provides various real estate mortgage loan origination activities either as a third-party originator or a mortgage broker, including loan pre-qualification, competitive bid process (when providing third-party origination services), loan origination, loan pre-approval, loan structuring, processing and closing.	Loan Discount Fee/points[1] 0-5% of loan amount Application/Processing Fee[2] $0.00 – $875.00 Flood and tax service: $0.00 - $95.00 Underwriting Fee: $0.00 - $995.00 Document Review Fee: $0.00 - $500.00 Appraisal Fee: $0.00 - $650.00 Credit Report Fee: $0.00 - $65.00 Actual charges may vary according to the particular lender selected, the particular circumstances of the underlying transaction, borrower elections, etc. Some or all of these fees may be charged by third-parties and/or the Member Mortgage Lender/Mortgage Broker. The Member Lenders and Mortgage Brokers have agreed to pay a fee ranging from 0.5% to 2.0% of the loan amount to IntroLend in connection with a range of loan origination services provided by IntroLend to the Member Lender/Mortgage Broker. The fees are paid directly to IntroLend by the Member Lender/Mortgage Broker and are not billed directly to you. [1] The loan discount fee/points are affected by the note rate. Depending upon market conditions, the loan discount fee/points may be higher to adjust for below-market rates. [2] There are other charges imposed in connection with mortgage loans. In addition, a lender may require the use of other service providers, including but not limited to any attorney, credit reporting agency or real estate appraiser chosen to represent the lender's interest. If you apply to any of these companies for a loan, you will receive additional information regarding anticipated charges.
SilverLine Title & Escrow, LLC This company provides title insurance and closing services.	Title Insurance Policy: $950 - $1706 on a $250,000 property. (Rates vary and are dependent on the state, selling price and loan amount on the property.) Title Search Fee: $250 - $325 (where applicable) Closing Fee: $450 - $550

ACKNOWLEDGMENT OF RECEIPT OF DISCLOSURE

I/we have read this Affiliated Business Arrangement Disclosure Statement provided by the Broker, eXp Realty, and understand that eXp Realty is referring me/us to the above-described settlement service(s) and the Broker or its affiliate(s) may receive a financial or other benefit as the result of this referral.

Seller 1:

Signature

Buyer 1:

AuthentiSIGN

Signature

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Version No.: 12.15.20

Attachment: 627 N Ridgewood Avenue - Executed Contract (2022-R-4 : Sale of CRA Owned Property Located at 627 Ridgewood Avenue)

Authentisign ID: B32FE25D-5173-EC11-94F6-281878CED430

Print Name	627 Ridgewood LLC Print Name
Date	01/11/22 Date

Seller 2:

Buyer 2:

Signature	Signature
Print Name	Print Name
Date	Date

Attachment: 627 N Ridgewood Avenue - Executed Contract (2022-R-4 : Sale of CRA Owned Property Located at 627 Ridgewood Avenue)

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Version No.: 12.15.20

EXHIBIT "B"

The requirements for the Project shall be:

1) Buyer shall request to rezone the Subject Property to a planned development (PD) zoning.

2) The Project shall be a building with a minimum footprint of 16,000 sq. ft. with a construction budget of approximately $2.5 million.

3) The building shall be constructed of a steel frame with a façade consistent with the Community Development Agency design standards. The Buyer shall request during the PD negotiation process for the building to have a ceiling height of 40 feet and will include as many windows on the west side facing Ridgewood Ave as reasonably possible. The remaining space, where possible, will have a second floor outdoor patio space and additional seating at the ground level.

4) The Buyer will occupy at least 50% of the space of the building for its rock climbing operations. The remaining space can be designed and constructed with the intention of leasing the space to other businesses whose uses shall be consistent with the modified CC1 and Overlay District and approved in the PD Development Agreement.

Attachment: EXHIBIT - B, Daytona Climbing Company (1) (2022-R-4 : Sale of CRA Owned Property Located at 627 Ridgewood Avenue)

Attachment: Holly Hill Escrow Agreement, Daytona Climbing Company (2022-R-4 : Sale of CRA Owned Property Located at 627 Ridgewood

ESCROW AGREEMENT

THIS ESCROW AGREEMENT (the "Agreement") is made and entered into this ___ day of _____, 2021, by and among CITY OF HOLLY HILL (City), 627 RIDGEWOOD, LLC (Buyer) and SCOTT E. SIMPSON, PA ("Escrow Agent").

RECITALS

WHEREAS, the Buyer acquired from the City a parcel of vacant real property located at 627 Ridgewood Avenue, Holly Hill, Florida and with a legal description attached hereto marked as Exhibit A (Subject Property).

WHEREAS, the City agreed to sell the Subject Property for $200,000.00 due to the development project the Buyer proposed to construct on the Subject Property, a description of the project is attached as Exhibit B.

WHEREAS, to insure that the project proposed by the Buyer is constructed, the City and Buyer entered into an Addendum to the Purchase and Sales Contract to require the Buyer to deposit a performance guarantee of $50,000.00 to be held in escrow.

WHEREAS, if the Buyer obtains a Certificate of Occupancy by a certain date for the project described in Exhibit B, the performance guarantee payment of $50,000.00 will be returned to the Buyer.

WHEREAS, if the Buyer fails to obtain a Certificate of Occupancy for the projected described in Exhibit B by a certain date, the performance guarantee of $50,000.00 shall be paid to the City.

NOW THEREFORE, in consideration of the foregoing premises and of the respective agreements and covenants contained herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and intending to be legally bound hereby, the parties hereto agree as follows:

ARTICLE 1
ACCEPTANCE OF APPOINTMENT AND DEPOSIT INTO ESCROW

Section 1.1 WHEREAS Recitals. The recitals in the above WHEREAS are hereby incorporated herein as is specifically set forth.

Section 1.2 Acceptance of Appointment as Escrow Agent. The Escrow Agent hereby accepts the appointment as Escrow Agent and agrees to hold and distribute all Escrow Funds in accordance with the terms and conditions of this Agreement.

Section 1.3 Deposit of Escrow Funds. Upon the full execution of this Agreement, the Buyer shall deposit the $50,000.00 performance guarantee to be held in the Scott E. Simpson Trust Account pursuant to the terms and condition of this Agreement.

ARTICLE 2
RELEASE FROM ESCROW

Section 2.1 Release of Escrow Funds. Escrow Agent shall release the $50,000.00 performance guarantee to the Buyer if the Buyer receives a Certificate of Occupancy from the City upon completion of the project described in Exhibit B on the Subject Property by _____. In the event the Buyer does not obtain a Certificate of Occupancy from the City for the project described in Exhibit B on the Subject Property by _____, the Escrow Agent shall release the $50,000.00 performance guarantee to the City.

The above determination by the Escrow Agent shall be based solely on whether the City has issued a Certificate of Occupancy for the project described in Exhibit B on the Subject Property by _____ and a copy of said Certificate of Occupancy must be provided to the Escrow Agent by _____.

Section 2.2 Disbursement into Court. Notwithstanding anything in this Agreement to the contrary, if at any time there shall exist any dispute between any of the parties, or any other obligation of the Escrow Agent hereunder, or if at any time the Escrow Agent is unable to determine, to the Escrow Agent's reasonable satisfaction, the proper disposition of the Escrow Funds or the Escrow Agent's proper actions with respect to its obligations hereunder, then the Escrow Agent may, in its reasonable discretion, take either or both of the following actions: (i) suspend the performance of any of its obligations under this Agreement until such dispute or uncertainty shall be resolved to the reasonable satisfaction of the Escrow Agent; and/or (ii) petition (by means of an interpleader action or any other appropriate method) any court of competent jurisdiction in Volusia County, Florida for instructions with respect to such dispute or uncertainty, and pay into and/or deposit with such court all Escrow Funds held by Escrow Agent, and deliver the Escrow Funds for holding and disposition in accordance with the instructions of such court.

ARTICLE 3
RIGHTS/RESPONSIBILITIES OF ESCROW AGENT AND RELEASE OF ESCROW AGENT

Section 3.1 Rights and Responsibilities of the Escrow Agent. The duties and responsibilities of the Escrow Agent shall be limited to those expressly set forth in this Agreement.

ARTICLE 4
MISCELLANEOUS

Section 4.1 Notices. All notices, requests, consents or other communications required or permitted under this Agreement shall be in writing and shall be deemed to have been duly given or delivered by any party: (a) when received by such party if delivered by hand, (b) upon confirmation

Attachment: Holly Hill Escrow Agreement, Daytona Climbing Company (2022-R-4 : Sale of CRA Owned Property Located at 627 Ridgewood

when delivered by fax, (c) within one day after being sent by recognized overnight delivery service, or (d) within three business days after being mailed by certified U.S. mail, postage prepaid, and in each case addressed as provided for in the Contract. Any party by written notice to the other parties pursuant to this section may change the address or the persons to whom notices or copies thereof shall be directed.

Section 4.2 Amendment. This Agreement may be amended or modified only by an instrument in writing duly executed by the parties to this Agreement.

Section 4.3 Attorneys' Fees and Costs. In connection with any litigation arising out of the enforcement or interpretation of this Agreement, the prevailing party shall be entitled to recover from the other, all costs incurred, including reasonable attorneys' fees, including without limitation trial and appellate proceedings and in bankruptcy.

Section 4.4 Counterparts, Faxes and Emails: This Agreement may be executed in counterparts, and signatures on copies of this Agreement which are transmitted by facsimile or email shall be deemed originals for all purposes.

The parties hereto have caused this Agreement to be executed by their duly authorized officers as of the day and year first above written.

Witness

_____

_____

_____

_____

_____

_____

Escrow Agent

_____
Scott E. Simpson, P.A.

Date:_____

City of Holly Hill

By:_____

Title:_____

Date:_____

627 Ridgewood, LLC

By:_____

Title:_____

Date:_____

Attachment: Holly Hill Escrow Agreement, Daytona Climbing Company (2022-R-4 : Sale of CRA Owned Property Located at 627 Ridgewood

STAFF REPORT
CITY OF HOLLY HILL, FLORIDA

City Commission
Agenda Item

MEETING DATE: **January 25, 2022**
FROM: **Valerie Manning**
SUBJECT: **Minutes - January 11, 2022 Regular City Commission Meeting**
NUMBER: **(ID # 3606)**
APPLICANT:
PLANNER:

DISCUSSION:

Minutes from the January 11, 2022 regular City Commission meeting.

MOTION:

Approve as submitted by staff.

- Minutes - January 11, 2022 - Regular City Commission meeting (PDF)

CITY OF HOLLY HILL, FLORIDA

CITY COMMISSION

MINUTES ● JANUARY 11, 2022

City Commission Chamber **Regular City Commission Meeting** **6:00 PM**

CITY HALL
1065 RIDGEWOOD AVENUE
HOLLY HILL, FL 32117

City Clerk's office: (386) 248-9441 - Fax: (386) 248-9448

1. CALL TO ORDER

a. Roll Call

Attendee Name	Title	Status	Arrived
Chris Via	Mayor	Present	
John Penny	District 1 - Commissioner	Present	
Penny Currie	District 2 - Commissioner	Present	
John C. Danio	District 3 - Commissioner	Present	
Roy Johnson	District 4 - Commissioner	Present	

b. Invocation by City Commissioner John Danio
Commissioner Danio led the Invocation.

c. Pledge of Allegiance
Mayor Via led the Pledge of Allegiance to the Flag.

2. PRESENTATIONS

2021 Employee of the Year - Chris Reeves, Water Plant Operator III

1.

2021 Employee of the Year - Chris Reeves, Water Plant Operator III

(Requested by Valerie Manning, City Clerk)

2021 Corporate Citizen of the Year - Pictona at Holly Hill

2.

2021 Corporate Citizen of the Year - Pictona at Holly Hill

(Requested by Valerie Manning, City Clerk)

Attachment: Minutes - January 11, 2022 - Regular City Commission meeting (3606 : Minutes)

Human Trafficking Month

3.

Human Trafficking Month 2022

(Requested by Valerie Manning, City Clerk)

Historic Landmark Plaque Presentations by HHHS

4.

Historic Landmark Plaque Presentation - Holly Hill Historic Preservation Society

(Requested by Valerie Manning, City Clerk)

R & R Industries, Inc. - Christmas Club Food Boxing Recognition
This presentation was moved to the January 25th regular meeting due to the individual receiving the proclamation was not able to attend this meeting.

5.

R & R Industries, Inc. - Christmas Club Food Boxing Recognition

(Requested by Valerie Manning, City Clerk)

3. PUBLIC COMMENTS

4. APPROVAL OF MINUTES

1.

Minutes - December 14, 2021 Continuation Discussion of ARPA Workshop and December 14, 2021 Regular City Commission Meeting

(Requested by Valerie Manning, City Clerk)
Mayor Via opened public participation. No one spoke.

RESULT:	**APPROVED [UNANIMOUS]**
MOVER:	Penny Currie, District 2 - Commissioner
SECONDER:	Roy Johnson, District 4 - Commissioner
AYES:	Via, Penny, Currie, Danio, Johnson

Enacted and approved this 11th day of January, 2022, in Holly Hill

Attachment: Minutes - January 11, 2022 - Regular City Commission meeting (3606 : Minutes)

5. CONSENT AGENDA - ITEMS (1 - 2)

Mayor Via asked if any member of the Commission would like to discuss or pull any item.
There was no one and no one from the audience spoke.

1. –2022-R-1 Resolution

A Resolution of the City Commission of the City of Holly Hill, Florida, to Approve the Auction of Items Identified to be Surplussed According to Purchasing Policy Section 13.2; Providing for Severability; Providing for an Effective Date.

(Requested by Antoine Khoury, Public Works)
Mayor Via opened public participation. No one spoke.

RESULT:	**ADOPTED [UNANIMOUS]**
MOVER:	John Penny, District 1 - Commissioner
SECONDER:	John C. Danio, District 3 - Commissioner
AYES:	Via, Penny, Currie, Danio, Johnson

RESOLUTION
2022-R-1
A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF HOLLY HILL, FLORIDA, TO APPROVE THE AUCTION OF ITEMS IDENTIFIED TO BE SURPLUSSED ACCORDING TO PURCHASING POLICY SECTION 13.2; PROVIDING FOR SEVERABILITY; PROVIDING FOR AN EFFECTIVE DATE.

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF HOLLY HILL, FLORIDA, TO APPROVE THE AUCTION OF ITEMS IDENTIFIED TO BE SURPLUSSED ACCORDING TO PURCHASING POLICY SECTION 13.2; AND PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the Public Works Department has identified three (3) vehicles and three (3) pieces of equipment that are no longer in use or have been replaced to include a 2002 Ford F-350 (vehicle 847), a 2003 Ford F-350 (vehicle 751) a 30kW Onan generator (generator 35) , a 1986 Ford Tractor (vehicle 752) and a 2014 Valve Exercising Machine and controller (Equipment 142); and

WHEREAS, public auction of surplussed vehicles will generate revenue for the City to be placed in the fund of that acquired the fixed asset.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF HOLLY HILL, FLORIDA:

SECTION 1. That the City Commission does hereby declare the items identified as surplus and authorize the sale of surplus vehicles and equipment at Manheim Auto Auction or to be scrapped if unable to be sold at auction.

Attachment: Minutes - January 11, 2022 - Regular City Commission meeting (3606 : Minutes)

SECTION 2. SEVERABILITY. If any section or portion of a section of this Resolution proves to be invalid, unlawful, or unconstitutional, it shall not be held to invalidate or impair the validity, force, or effect of any other section or part of this Resolution.

SECTION 3. EFFECTIVE DATE. This Resolution shall take effect immediately upon adoption by the City Commission.

APPROVED AND AUTHENTICATED on this 11th day of JANUARY, 2022.

Attachment: Minutes - January 11, 2022 - Regular City Commission meeting (3606 : Minutes)

Enacted and approved this 11th day of January, 2022, in Holly Hill

2. -2022-R-2 Resolution

A Resolution of the City Commission of the City of Holly Hill, Florida, Approving Elo Restoration, Inc., D/B/A Elo Roofing a Contract in the Amount of $103,597.23 to Replace the Roof at the Ymca and Authorizing the City Manager to Execute the Same; Providing for Severability; Providing for an Effective Date.

(Requested by Antoine Khoury, Public Works)
Mayor Via opened public participation. No one spoke.

RESULT:	**ADOPTED [UNANIMOUS]**
MOVER:	John Penny, District 1 - Commissioner
SECONDER:	John C. Danio, District 3 - Commissioner
AYES:	Via, Penny, Currie, Danio, Johnson

RESOLUTION
2022-R-2
A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF HOLLY HILL, FLORIDA, APPROVING ELO RESTORATION, INC., D/B/A ELO ROOFING A CONTRACT IN THE AMOUNT OF $103,597.23 TO REPLACE THE ROOF AT THE YMCA AND AUTHORIZING THE CITY MANAGER TO EXECUTE THE SAME; PROVIDING FOR SEVERABILITY; PROVIDING FOR AN EFFECTIVE DATE.

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF HOLLY HILL, FLORIDA, FINDING ELO RESTORATION, INC., D/B/A ELO ROOFING, INC., TO BE THE LOWEST, RESPONSIBLE BIDDER FOR REQUEST FOR PROPOSAL #22-BG-01 IN THE AMOUNT OF $103,597.23 TO REPLACE THE ROOF AT THE YMCA AND AUTHORIZING THE CITY MANAGER TO EXECUTE THE SAME; AND PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, due to its age and condition, the roof of the YMCA is in need of replacement; and

WHEREAS, Five (5) bids were received from contractors to perform this work; and

WHEREAS, a unanimous recommendation was reached by a selection Committee recommending that the contract for the replacement of the YMCA roof be awarded to ELO Restoration, Inc., D/B/A ELO Roofing, Inc.; and

Attachment: Minutes - January 11, 2022 - Regular City Commission meeting (3606 : Minutes)

WHEREAS, ELO Restoration, Inc., D/B/A ELO Roofing, Inc., is selected as the lowest, responsible bidder.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF HOLLY HILL, FLORIDA:

SECTION 1. That the City Commission of the City of Holly Hill select ELO Restoration, Inc., D/B/A ELO Roofing, Inc., as the lowest, responsible bidder and approve a contract with ELO Restoration, Inc., D/B/A ELO Roofing, Inc., in the amount of $103,597.23 (to include contingency for wood sheets replacement) to replace the roof at the YMCA and authorize the City Manager to execute the same.

SECTION 2. SEVERABILITY. If any section or portion of a section of this Resolution proves to be invalid, unlawful, or unconstitutional, it shall not be held to invalidate or impair the validity, force, or effect of any other section or part of this Resolution.

SECTION 3. EFFECTIVE DATE. This Resolution shall take effect immediately upon its adoption.

APPROVED AND AUTHENTICATED on this 11th day of JANUARY, 2022.

Enacted and approved this 11th day of January, 2022, in Holly Hill

6. REGULAR AGENDA

1. –2022-R-3 Resolution

A Resolution of the City Commission of the City of Holly Hill, Volusia County, Florida, Amending the Adopted Budget for the City of Holly Hill for the Fiscal Year 2021-2022; Providing for Severability; and Providing for an Effective Date.

(Requested by Amanda Raslowsky, Finance)
Mayor Via opened public participation. No one spoke.

RESULT:	**ADOPTED [UNANIMOUS]**
MOVER:	Penny Currie, District 2 - Commissioner
SECONDER:	John C. Danio, District 3 - Commissioner
AYES:	Via, Penny, Currie, Danio, Johnson

RESOLUTION
2022-R-3
A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF HOLLY HILL, VOLUSIA COUNTY, FLORIDA, AMENDING THE ADOPTED BUDGET FOR THE CITY OF HOLLY HILL FOR THE FISCAL YEAR 2021-2022; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF HOLLY HILL, VOLUSIA COUNTY, FLORIDA, AMENDING THE ADOPTED BUDGET FOR THE CITY OF

Attachment: Minutes - January 11, 2022 - Regular City Commission meeting (3606 : Minutes)

HOLLY HILL FOR THE FISCAL YEAR 2021-2022; AND PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City amends its annual budget as changes to the budget occur during the year, the City has amended the current budget for such changes by the following Resolutions; 2020-R-73, adopted an operating budget for Fiscal Year 2021-2022;
Resolution 2021-R-91, amended the operating budget for Fiscal Year 2021-2022;
Resolution 2021-R-94, amended the operating budget for Fiscal Year 2021-202
Resolution 2021-R-100, amended the operating budget for Fiscal Year 2021-2022;
Resolution 2021-R-106, amended the operating budget for Fiscal Year 2021-2022;
Resolution 2021-R-110, amended the operating budget for Fiscal Year 2021-2022; and,

WHEREAS, this resolution, amending the budget, is to account for additional revenue from the Edward Byrne Memorial Justice Assistance Grant Program (JAGD) with an adjustment of $2,845 revenues and expenditures in total pursuant to itemizations contained in Exhibit "A", which is attached hereto and incorporated herein; and

WHEREAS, the budget adjustments will allow the City of Holly Hill to adjust the Fiscal Year 2021-2022 budget.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF HOLLY HILL, FLORIDA:

SECTION 1. Amended Budget: The City Commission of the City of Holly Hill amends the Fiscal Year 2021-2022 budget by revising the budget in total pursuant to itemizations contained in Exhibit "A", which is attached hereto and incorporated herein.

SECTION 2. Effective Date. This Resolution shall become effective immediately upon its adoption.

APPROVED AND AUTHENTICATED on this 11th day of JANUARY, 2022.

Enacted and approved this 11th day of January, 2022, in Holly Hill

7. PUBLIC HEARINGS

1. –2021-O-3044 Ordinance

SECOND READING - ORDINANCE 3044 - an Ordinance of the City of Holly Hill Florida, Amending the Comprehensive Plan by Amending the Future Land Use Map Designation of Certain Property Identified as 1012 8Th Street Having Parcel Number 4244-01-07-0081 by Virtue of a Small Scale Future Land Use Map Amendment; Changing the Future Land Use Map Designation from MXZ (Mixed Use Zone) to General Commercial; Providing for Conflicting Ordinances; Providing for Severability; and Providing an Effective Date. AND SECOND READING - ORDINANCE 3045 - an

Attachment: Minutes - January 11, 2022 - Regular City Commission meeting (3606 : Minutes)

Ordinance of the City of Holly Hill, Florida, Amending the Land Development Regulations, by Amending the Official Zoning Map to Designate the Property Described as 1012 8Th Street Having Parcel Number 4244-01-07-0081 and Further Described in Attachment "A" from MH-1 (Mobile Home) to CC-1 (Commercial Corridor District); Providing for Conflicting Ordinances; Providing for Severability; and Providing an Effective Date.

(Requested by Brian Walker, Board of Planning and Appeals)
Attorney Simpson read both titles of the Ordinances (3044 and 3045) into the record. However, both Ordinances would be voted on separately as indicated below.

ORDINANCE 3044

*Commissioner Johnson made a motion to **APPROVE ORDINANCE 3044**, seconded by Commissioner Penny.*

Mayor Via opened public participation. No one spoke.

PASSED, 5-0.

ORDINANCE 3045

*Commissioner Currie made a motion to **APPROVE ORDINANCE 3045**, seconded by Commissioner Johnson.*

Mayor Via opened public participation. No one spoke.

PASSED, 5-0.

RESULT:	**ADOPTED AT 2ND READING [UNANIMOUS]**
MOVER:	Roy Johnson, District 4 - Commissioner
SECONDER:	John Penny, District 1 - Commissioner
AYES:	Via, Penny, Currie, Danio, Johnson

ORDINANCE
2021-O-3044
SECOND READING - ORDINANCE 3044 - AN ORDINANCE OF THE CITY OF HOLLY HILL FLORIDA, AMENDING THE COMPREHENSIVE PLAN BY AMENDING THE FUTURE LAND USE MAP DESIGNATION OF CERTAIN PROPERTY IDENTIFIED AS 1012 8TH STREET HAVING PARCEL NUMBER 4244-01-07-0081 BY VIRTUE OF A SMALL SCALE FUTURE LAND USE MAP AMENDMENT; CHANGING THE FUTURE LAND USE MAP DESIGNATION FROM MXZ (MIXED USE ZONE) TO GENERAL COMMERCIAL; PROVIDING FOR CONFLICTING ORDINANCES; PROVIDING FOR SEVERABILITY; AND PROVIDING AN EFFECTIVE DATE. AND SECOND READING - ORDINANCE 3045 - AN ORDINANCE OF THE CITY OF HOLLY HILL, FLORIDA, AMENDING THE LAND DEVELOPMENT REGULATIONS, BY AMENDING THE OFFICIAL ZONING MAP TO DESIGNATE THE PROPERTY DESCRIBED AS 1012 8TH STREET HAVING PARCEL NUMBER 4244-01-07-0081 AND FURTHER

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DESCRIBED IN ATTACHMENT "A" FROM MH-1 (MOBILE HOME) TO CC-1 (COMMERCIAL CORRIDOR DISTRICT); PROVIDING FOR CONFLICTING ORDINANCES; PROVIDING FOR SEVERABILITY; AND PROVIDING AN EFFECTIVE DATE.

ORDINANCE NO. 3044

AN ORDINANCE OF THE CITY OF HOLLY HILL FLORIDA, AMENDING THE COMPREHENSIVE PLAN BY AMENDING THE FUTURE LAND USE MAP DESIGNATION OF CERTAIN PROPERTY IDENTIFIED AS 1012 8TH STREET HAVING PARCEL NUMBER 4244-01-07-0081 AND FURTHER DESCRIBED IN ATTACHMENT "A", BY VIRTUE OF A SMALL SCALE FUTURE LAND USE MAP AMENDMENT; CHANGING THE FUTURE LAND USE MAP DESIGNATION FROM MXZ (MIXED USE ZONE) TO GENERAL COMMERCIAL; PROVIDING FOR CONFLICTING ORDINANCES; PROVIDING FOR SEVERABILITY; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, Section 163.3167, Florida Statutes, requires each county in the State of Florida to prepare and adopt a Comprehensive Plan; and

WHEREAS, the City Commission of the City of Holly Hill, Volusia County, Florida, has adopted a comprehensive plan pursuant to, and in compliance with 163.3161 et. Seq., Florida Statutes; and

WHEREAS, the City Commission has reviewed the future land use designation for the parcel described in Attachment "A" and determined that it is necessary to amend its Future Land Use Map as herein provided in order to more effectively implement its adopted comprehensive plan; and

WHEREAS, Section 163.3187, Florida Statutes, provides for small-scale amendments to the adopted Future Land Use Map of the Comprehensive Plan by the local government.

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NOW, THEREFORE, BE IT ORDAINED BY THE CITY COMMISSION OF HOLLY HILL, FLORIDA:

SECTION 1. The Future Land Use Map for the City of Holly Hill, is hereby amended to designate the parcel identified as 1012 8th Street having parcel number 4244-01-07-0081 as described in Attachment "A", as General Commercial.

SECTION 2. If any section, subsection, sentence, clause, phrase, or portion of this Ordinance, or application hereof, is for any reason held invalid or unconstitutional by any Court, such portion or application shall be deemed a separate, distinct, and independent provision, and such holding shall not affect the validity of the remaining portions or application hereof.

SECTION 3. EFFECTIVE DATE - Within ten (10) days after enactment, a certified copy of this Ordinance shall be filed in the Office of the Secretary of State by the Clerk of the County Council and transmitted to the state land planning agency and any other agency or local government that provided timely comments pursuant to the small-scale comprehensive plan review process in Section 163.3187, Florida Statutes. This Ordinance shall take effect upon the latter of the following dates: (a) thirty-one (31) days after adoption and after the issuance of a certificate of consistency or conditional certificate of consistency by the Volusia County Growth Management Commission, or (b) if timely challenged, issuance of a final order by the state land planning agency or the State of Florida Administration Commission determining the amendment adopted by this Ordinance to be in compliance.

SECTION 4. That all ordinances made in conflict with this Ordinance are hereby repealed.

SECTION 5. That this Ordinance shall be posted at City Hall as required by law.

Attachment: Minutes - January 11, 2022 - Regular City Commission meeting (3606 : Minutes)

APPROVED AND AUTHENTICATED on this 11th day of JANUARY, 2022 for second reading.

ATTACHMENT "A"

That certain parcel numbered 4244-01-07-0081 by the Volusia County Property Appraiser, deed recorded at Official Records Book 8045, page 4642 of the Public Records of Volusia County, Florida, and alternately described by bounds as follows: beginning at the southeasterly corner of the above described parcel; thence westerly along the northerly right of way of 8th Street, a 50 foot right of way of record, to the southeasterly corner of Parcel Number 44244-01-07-0085, deed recorded at Official Records Book 6663, page 3188; thence northerly along the westerly line of said Parcel Number 4244-01-07-0085 to the northeasterly corner thereof and an intersection with Parcel Number 4244-01-07-0080, deed recorded at Official Records Book 6680, page 3079; thence easterly along the southerly line of said Parcel Number 4244-01-07-0080 to the northwesterly corner of Parcel Number 4244-01-07-0082, deed recorded at Official Records Book 6456, page 1194; thence southerly along the westerly line of said Parcel Number 4244-01-07-0082 and the westerly line of Parcel Number 4244-01-07-0084 deed recorded at Official Records Book 3435 page 238 to the Point of Beginning. The above-described parcel contains 51123 square feet, more or less.

AND

ORDINANCE NO. 3045

AN ORDINANCE OF THE CITY OF HOLLY HILL, FLORIDA, AMENDING THE LAND DEVELOPMENT REGULATIONS, BY AMENDING THE OFFICIAL ZONING MAP TO DESIGNATE THE PROPERTY DESCRIBED AS 1012 8TH STREET HAVING PARCEL NUMBER 4244-01-07-0081 AND FURTHER DESCRIBED IN ATTACHMENT A FROM MH-1 (MOBILE HOME) TO CC-1 (COMMERCIAL CORRIDOR DISTRICT); PROVIDING FOR CONFLICTING ORDINANCES; PROVIDING FOR SEVERABILITY; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the City Commission of the City of Holly Hill, Volusia County, Florida, has adopted a comprehensive plan pursuant to, and in compliance with 163.3161 et. Seq., Florida Statutes; and

WHEREAS, the City Commission, as authorized by 163.3202, Florida Statutes,

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has enacted and does enforce the Land Development Regulations, based on, related to, and as a means to implement its adopted comprehensive plan; and

WHEREAS, the City Commission has determined that it is necessary to amend its Land Development Regulations as herein provided in order to more effectively implement its adopted comprehensive plan, and

WHEREAS, the City Commission has determined that the proposed amendment to the Land Development Regulations is consistent with its adopted comprehensive plan.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COMMISSION OF HOLLY HILL, FLORIDA:

SECTION 1. The Official Zoning Map of the City of Holly Hill is hereby amended to designate the property described in Attachment A as CC-1 (Commercial Corridor District.)

SECTION 2. Development of the property described in Attachment A shall conform to the Land Development Regulations of Holly Hill.

SECTION 3. If any section, subsection, sentence, clause, phrase, or portion of this Ordinance, or application hereof, is for any reason held invalid or unconstitutional by any Court, such portion or application shall be deemed a separate, distinct, and independent provision, and such holding shall not affect the validity of the remaining portions or application hereof.

SECTION 4. That all ordinances made in conflict with this Ordinance are hereby repealed.

SECTION 5. That this Ordinance shall be posted at City Hall as required by law.

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SECTION 6. That this Ordinance shall become effective upon final approval of the future land use map amendment.

APPROVED AND AUTHENTICATED on this 11th day of JANUARY, 2022 for second reading.

ATTACHMENT "A"

That certain parcel numbered 4244-01-07-0081 by the Volusia County Property Appraiser, deed recorded at Official Records Book 8045, page 4642 of the Public Records of Volusia County, Florida, and alternately described by bounds as follows: beginning at the southeasterly corner of the above described parcel; thence westerly along the northerly right of way of 8th Street, a 50 foot right of way of record, to the southeasterly corner of Parcel Number 44244-01-07-0085, deed recorded at Official Records Book 6663, page 3188; thence northerly along the westerly line of said Parcel Number 4244-01-07-0085 to the northeasterly corner thereof and an intersection with Parcel Number 4244-01-07-0080, deed recorded at Official Records Book 6680, page 3079; thence easterly along the southerly line of said Parcel Number 4244-01-07-0080 to the northwesterly corner of Parcel Number 4244-01-07-0082, deed recorded at Official Records Book 6456, page 1194; thence southerly along the westerly line of said Parcel Number 4244-01-07-0082 and the westerly line of Parcel Number 4244-01-07-0084 deed recorded at Official Records Book 3435 page 238 to the Point of Beginning. The above-described parcel contains 51123 square feet, more or less.

Enacted and approved this 11th day of January, 2022, in Holly Hill

2. –2022-O-3046 Ordinance

FIRST READING - an Ordinance of the City of Holly Hill Florida, Amending the Comprehensive Plan by Adding Text Allowing Specific Parcels Identified as 4242-04-28-0171 Aka 490 Flomich Street, 4242-38-02-0080, 4242-38-02-0010 and 4242-38-01-0010 Aka 504 Flomich Street, to be Developed as a Recreational Vehicle Park, by Virtue of a Large Scale Comprehensive Plan Text Amendment; Providing for Conflicting Ordinances; Providing for Severability; and Providing an Effective Date.

(Requested by Brian Walker, Board of Planning and Appeals)
Mayor Via opened public participation.

The following individuals came forward to speak to the Mayor and City Commissioners:

Phil Larrimore, Holly Hill and Mr. Kelly Williamson, owns and operates an RV Park outside of Gatlinburg, Tennessee.

Mayor Via closed public participation.

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RESULT:	**APPROVED AT 1ST READING [UNANIMOUS]**	**Next: 3/22/2022 6:00 PM**
MOVER:	Roy Johnson, District 4 - Commissioner	
SECONDER:	Penny Currie, District 2 - Commissioner	
AYES:	Via, Penny, Currie, Danio, Johnson	

8. COMMUNICATIONS

A. City Manager & Staff Comments

Mr. Forte shared with the Mayor and City Commissioners the following information: the city signed a Purchase and Sale Agreement for city-owned property at 627 Ridgewood Avenue with the Daytona Climbing Company, he is just waiting for the buyers to come and sign it. There are two board appointments available; one for BOPA and one for the Police Pension Board. He met with Doc Bailey last week and found out that the Seaplane Base is actually going to be a go. It turned out over the last several years that the Federal Government and the Manatee Protection Zone determined that the seaplane doesn't count as a vessel with regards to the Manatee Protection. As long as they stay in the state waters there's no violation. So, they have determined his request to be mute and doesn't apply to them. DOT is coming back on February 8, 2022 to do an inspection of the site. At this point, Doc believes they have everything in place to go ahead and use that as an actual seaplane landing strip. The city still has to go back and renew the agreements that the city had with them since they have expired. It's exciting that it's come this far. It's taken a long time and probably an unnecessary long time but at least it's here. Reminded everyone that Movie with A Cop is this Friday, January 14th at 6:00 PM and they will be playing the movie "Sing". Beginning this coming Saturday, the Code Enforcement Department will begin recognizing homes with a "Beautification Award" and that will be done twice a month. He met with the City Manager in South Daytona and got the idea from them. This just involves the Code Enforcement Officers who will recognize residential properties worthy of a recognition. They would get this yard sign and a certificate and it will be published on the city's Facebook page. On January 18th the County will be having another ECHO Grant meeting and encouraged them to attend that meeting if they can for support of the project. On January 19th will be the State of the City at Sica Hall and it will be a luncheon. The estimate for the YMCA and Boys & Girls Club multi-indication sign with the city's logo on it for Ridgewood Avenue came in with a 50% grant from the CRA and the cost would be just under $11,000 with each of the clubs paying $2,700 for the sign. The roof at the YMCA will be getting replaced soon. Today was the deadline for Fountainhead to have something back to the Commission and they didn't get anything done in time. That means the options on parcels 3 and 4 have expired. What happens with that from this point forward is yet to be determined. There was a workshopped scheduled for tonight but was canceled and that was on Capital Improvement projects over the next three or four years; he will try to reschedule that. On January 25th there will be a workshop discussion on the widening of LPGA and an engineer from Newkirk Engineering will be here to answer some questions; he works often with DOT. Mr. Forte handed out some information that he received at the Elected

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Officials Roundtable meeting and it's the Road Program for FY21-22 for Volusia County Engineering and Construction. These are the projects that they have going on for the next several years.

B. City Attorney Comments
None.

C. City Commission Comments
Commissioner Penny reminded the Commission that the annual mandatory Ethics Training will be offered by the VLC on February 11th at Daytona State College from 8:00 AM to 12:00 PM, they should receive an email next week about that.

Commissioner Currie congratulated everyone who was recognized tonight. Great things are happening in Holly Hill, a lot of good things are in the works.

Commissioner Danio mentioned that Wade Park needs some help.

Commissioner Johnson mentioned LPGA and the issues on that; a lot of good things happening in Holly Hill.

D. Mayor's Comments
Mayor Via mentioned that Arthur Byrnes resigned from the Board of Planning and Appeals board due to an appointment on a County board. He asked Attorney Simpson about holding dual office and was asking for clarification in this case. It was determined that it was not a dual office holding position because BOPA is an Advisory board but more of a County regulation for the reason that Mr. Byrnes stated in his memo to the city. Mayor Via will look for someone to fill Mr. Byrnes vacancy spot on the BOPA board and bring that to the Commission for approval. Mayor Via requested from Mr. Forte if a financial monthly report can continue to be given to the Commission. It gives them a snapshot throughout the year so the Commission can follow along. January 19th the State of the City will be at Sica Hall. Anyone interested in attending has to get with Sammy at the Chamber. Congratulated Captain Chris Yates to him. Pinning Ceremony will be at the next meeting.

9. ADJOURNMENT

The meeting adjourned at approximately 7:40 PM.

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HOLLY HILL
FLORIDA

STAFF REPORT
CITY OF HOLLY HILL, FLORIDA

City Commission
Resolution

MEETING DATE: **January 25, 2022**
FROM: **Joseph Forte**
SUBJECT: **A Resolution of the City of Holly Hill, Florida, Authorizing the City Manager to Execute a Purchase and Sale Agreement with 627 Ridgewood LLC for the Property Located at 627 Ridgewood Avenue Parcel # 424401150080 Identified As, E 100 Ft of Lots 7&8 and Lots 9&10 Exc Road Blk 15M & C Holly Hill Per or 5715 Pg 2126 Per or 6656 Pg 1936 of the Public Records of Volusia County, Florida, and Authorizing the City Manager to Execute All Closing Documents; Providing for Severability; and Providing for an Effective Date.**
NUMBER: **2022-R-5**
APPLICANT:
PLANNER:

DISCUSSION:

In 2011, the City of Holly Hill Community Redevelopment Agency purchased the property located at 627 Ridgewood Avenue for the purpose of eliminating a blighted property and to seek redevelopment of the property with a new building with a community purpose. Over the past ten years changes in the real-estate market has made it difficult to find a developer willing to purchase the property and construct a build and business acceptable to the city. Recently, Daytona Climbing, now known as 627 Ridgewood Avenue, have approached the city staff with a plan to develop a building with a minimum footprint of 16,000 sq. ft for the purpose of an indoor rock climbing wall business and associate businesses.

With the development of Pictona, Flight Gymnastics, Volusia Indoor Sports complex, and Tasso's gym, Daytona Climbing will be an exciting added fiscal fitness business opening in the City of Holly Hill.

FISCAL ANALYSIS:

The City will receive $200,000.00 for the sale of this property which is consistent with an additional $50,000 be placed in escrow that upon completion of the project and a final certificate of occupancy will be reimbursed back to the developer.

STAFF RECOMMENDATION:

Staff recommends selling this property for the purpose redevelopment.

COMMISSION GOAL:

Goal #4: Provide proficient public health and safety services in terms of police and fire protection, water, storm water, waste water and solid waste management and disaster preparedness with a focus on intergovernmental collaboration, private sector partnerships, and utilization of technologies and proven innovations.

MOTION:

TO AUTHORIZE THE CITY MANAGER TO EXECUTE A PURCHASE AND SALE AGREEMENT AND AUTHORIZING THE CITY MANAGER TO EXECUTE ALL CLOSING DOCUMENTS ON BEHALF OF THE CITY AND THE COMMUNITY REDEVELOPMENT AGENCY.

ATTACHMENTS:

- 627 N Ridgewood Avenue - Executed Contract (PDF)
- EXHIBIT - B, Daytona Climbing Company (1) (PDF)
- Holly Hill Escrow Agreement, Daytona Climbing Company (PDF)

Resolution No. 2022-5

A RESOLUTION OF THE CITY OF HOLLY HILL, FLORIDA, AUTHORIZING THE CITY MANAGER TO EXECUTE A PURCHASE AND SALE AGREEMENT WITH 627 RIDGEWOOD LLC FOR THE PROPERTY LOCATED AT 627 RIDGEWOOD AVENUE PARCEL # 424401150080 IDENTIFIED AS, E 100 FT OF LOTS 7&8 AND LOTS 9&10 EXC ROAD BLK 15M & C HOLLY HILL PER OR 5715 PG 2126 PER OR 6656 PG 1936 OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, AND AUTHORIZING THE CITY MANAGER TO EXECUTE ALL CLOSING DOCUMENTS; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

A RESOLUTION OF THE CITY OF HOLLY HILL, FLORIDA, AUTHORIZING THE CITY MANAGER TO EXECUTE A PURCHASE AND SALE AGREEMENT WITH 627 RIDGEWOOD LLC FOR THE PROPERTY LOCATED AT 627 RIDGEWOOD AVENUE PARCEL # 424401150080 IDENTIFIED AS, E 100 FT OF LOTS 7&8 AND LOTS 9&10 EXC ROAD BLK 15M & C HOLLY HILL PER OR 5715 PG 2126 PER OR 6656 PG 1936 OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, AND AUTHORIZING THE CITY MANAGER TO EXECUTE ALL CLOSING DOCUMENTS, PROVIDING FOR SEVERABILITY; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the City of Holly Hill purchased the property located at 627 Ridgewood Avenue for $350,000; and

WHEREAS, the purpose of the purchase was to eliminate a blighted area and consider a project for redevelopment; and

WHEREAS, the city and CRA has made several attempts to sell the property through public bidding and requests for proposals; and

WHEREAS, the City contracted with Marta Pasqual to sell the property with the city's approval of the buyer and buyers project; and

WHEREAS, the buyers 627 Ridgewood LLC has made an offer on the property of $200,000 in addition to an escrow payment of $50,000 that will be reimbursed upon the satisfactory completion of the project and a final certificate of occupancy.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF HOLLY HILL, FLORIDA:

SECTION 1. The City of Holly Hill and the Community Redevelopment Agency

is the owner of the property located at 627 Ridgewood Avenue.

SECTION 2. 627 Ridgewood LLC is a willing buyer and the City of Holly Hill and the Community Redevelopment Agency are willing sellers.

SECTION 3. The City Commission authorizes the City Manager to execute a Purchase and Sale Agreement and to execute all related closing documents with the title company.

SECTION 4. SEVERABILITY. If any section, subsection sentence, clause, phrase or portion of the Resolution, or application hereof, is for any reason held invalid or unconstitutional by any Court, such portion or application shall be deemed a separate, distinct, and independent provision, and such holding shall not affect the validity of the remaining portions or application hereof.

SECTION 5. That all resolutions made in conflict with this resolution are hereby repealed.

SECTION 6. EFFECTIVE DATE. That this resolution become effective immediately upon its adoption.

APPROVED AND AUTHENTICATED on this 25th day of JANUARY, 2022.

Authentisign ID: B32FE25D-5173-EC11-94F6-281878CED430

Vacant Land Contract

1. Sale and Purchase: City of Holly Hill ("**Seller**") and 627 Ridgewood LLC ("**Buyer**") (the "parties") agree to sell and buy on the terms and conditions specified below the property ("Property") described as:
Address: 627 N RIDGEWOOD AVE, HOLLY HILL, FL 32117 - vacant land
Legal Description: E 100 FT OF LOTS 7 & 8 & LOTS 9 &10 EXC ROAD BLK 15 M & C HOLLY HILL PER OR 5715 PG 2126 PER OR 6656 PG 1936

SEC ___/TWP /___/RNG ___ of VOLUSIA County, Florida. Real Property ID No.: 424401150080
including all improvements existing on the Property and the following additional property: _____

2. Purchase Price: (U.S. currency) ..... $ 200,000.00
All deposits will be made payable to "Escrow Agent" named below and held in escrow by:
Escrow Agent's Name: Adams Cameron Title Services
Escrow Agent's Contact Person: Margie Patchett
Escrow Agent's Address: 444 Seabreeze Blvd., Suite 170, Daytona Beach, FL 32118
Escrow Agent's Phone: 386-258-3425
Escrow Agent's Email: orders@adamscamerontitle.com

(a) Initial deposit ($0 if left blank) (**Check if applicable**)
☐ accompanies offer
☒ will be delivered to Escrow Agent within 3 days (3 days if left blank)
after Effective Date ..... $ 5,000.00

(b) Additional deposit will be delivered to Escrow Agent (**Check if applicable**)
☐ within _____ days (10 days if left blank) after Effective Date
☐ within _____ days (3 days if left blank) after expiration of Feasibility Study Period ..... $ _____

(c) Total Financing (see Paragraph 6) (express as a dollar amount or percentage) ..... _____

(d) Other: _____ ..... $ _____

(e) Balance to close (not including **Buyer's** closing costs, prepaid items, and prorations) to be paid at closing by wire transfer or other Collected funds ..... $ 195,000.00

(f) ☐ (Complete only if purchase price will be determined based on a per unit cost instead of a fixed price.) The unit used to determine the purchase price is ☐ lot ☐ acre ☐ square foot ☐ other (specify): _____ prorating areas of less than a full unit. The purchase price will be $_____ per unit based on a calculation of total area of the Property as certified to **Seller** and **Buyer** by a Florida licensed surveyor in accordance with Paragraph 8(c). The following rights of way and other areas will be excluded from the calculation: _____

3. Time for Acceptance; Effective Date: Unless this offer is signed by **Seller** and **Buyer** and an executed copy delivered to all parties on or before January 12, 2022, this offer will be withdrawn and **Buyer's** deposit, if any, will be returned. The time for acceptance of any counter-offer will be 3 days after the date the counter-offer is delivered. **The "Effective Date" of this contract is the date on which the last one of the Seller and Buyer has signed or initialed and delivered this offer or the final counter-offer.**

4. Closing Date: This transaction will close on March 29, 2022 ("Closing Date"), unless specifically extended by other provisions of this contract. The Closing Date will prevail over all other time periods including, but not limited to, Financing and Feasibility Study periods. However, if the Closing Date occurs on a Saturday, Sunday, or national legal holiday, it will extend to 5:00 p.m. (where the Property is located) of the next business day. In the event insurance underwriting is suspended on Closing Date and **Buyer** is unable to obtain property insurance, **Buyer** may postpone closing for up to 5 days after the insurance underwriting suspension is lifted. If this transaction does not close for any reason, **Buyer** will immediately return all **Seller** provided documents and other items.

5. Extension of Closing Date: If Paragraph 6(b) is checked and Closing Funds from Buyer's lender(s) are not available on Closing Date due to Consumer Financial Protection Bureau Closing Disclosure delivery requirements

Attachment: 627 N Ridgewood Avenue - Executed Contract (2022-R-5 : Sale of City Owned Property Locate at 627 Ridgewood Avenue)

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("CFPB Requirements"), if applicable, then Closing Date shall be extended for such period necessary to satisfy CFPB Requirements, provided such period shall not exceed 10 days.

6. Financing: (**Check as applicable**)

(a) ☒ **Buyer** will pay cash for the Property with no financing contingency.

(b) ☐ This contract is contingent on **Buyer** qualifying for and obtaining the commitment(s) or approval(s) specified below ("Financing") within _____ days after Effective Date (Closing Date or 30 days after Effective Date, whichever occurs first, if left blank) ("Financing Period"). **Buyer** will apply for Financing within _____ days after Effective Date (5 days if left blank) and will timely provide any and all credit, employment, financial, and other information required by the lender. If **Buyer**, after using diligence and good faith, cannot obtain the Financing within the Financing Period, either party may terminate this contract and **Buyer's** deposit(s) will be returned.

(1) ☐ **New Financing: Buyer** will secure a commitment for new third party financing for $_____ or _____% of the purchase price at (**Check one**) ☐ a fixed rate not exceeding _____% ☐ an adjustable interest rate not exceeding _____% at origination (a fixed rate at the prevailing interest rate based on **Buyer's** creditworthiness if neither choice is selected). **Buyer** will keep **Seller** and Broker fully informed of the loan application status and progress and authorizes the lender or mortgage broker to disclose all such information to **Seller** and Broker.

(2) ☐ **Seller Financing: Buyer** will execute a ☐ first ☐ second purchase money note and mortgage to **Seller** in the amount of $_____, bearing annual interest at _____% and payable as follows:

_____

The mortgage, note, and any security agreement will be in a form acceptable to **Seller** and will follow forms generally accepted in the county where the Property is located; will provide for a late payment fee and acceleration at the mortgagee's option if **Buyer** defaults; will give **Buyer** the right to prepay without penalty all or part of the principal at any time(s) with interest only to date of payment; will be due on conveyance or sale; will provide for release of contiguous parcels, if applicable; and will require **Buyer** to keep liability insurance on the Property, with **Seller** as additional named insured. **Buyer** authorizes **Seller** to obtain credit, employment, and other necessary information to determine creditworthiness for the financing. **Seller** will, within 10 days after Effective Date, give **Buyer** written notice of whether or not **Seller** will make the loan.

(3) ☐ **Mortgage Assumption: Buyer** will take title subject to and assume and pay existing first mortgage to

_____

LN#_____ in the approximate amount of $_____ currently payable at $_____ per month, including principal, interest, ☐ taxes and insurance, and having a ☐ fixed ☐ other (describe) _____ interest rate of _____% which ☐ will ☐ will not escalate upon assumption. Any variance in the mortgage will be adjusted in the balance due at closing with no adjustment to purchase price. **Buyer** will purchase **Seller's** escrow account dollar for dollar. If the interest rate upon transfer exceeds _____% or the assumption/transfer fee exceeds $_____, either party may elect to pay the excess, failing which this contract will terminate; and **Buyer's** deposit(s) will be returned. If the lender disapproves **Buyer**, this contract will terminate; and **Buyer's** deposit(s) will be returned.

7. Assignability: (**Check one**) **Buyer** ☐ may assign and thereby be released from any further liability under this contract, ☐ may assign but not be released from liability under this contract, or ☒ may not assign this contract.

8. Title: Seller has the legal capacity to and will convey marketable title to the Property by ☒ statutory warranty deed ☐ special warranty deed ☐ other (specify) _____, free of liens, easements, and encumbrances of record or known to **Seller**, but subject to property taxes for the year of closing; covenants, restrictions, and public utility easements of record; existing zoning and governmental regulations; and (list any other matters to which title will be subject) _____, provided there exists at closing no violation of the foregoing.

(a) Title Evidence: The party who pays for the owner's title insurance policy will select the closing agent and pay for the title search, including tax and lien search (including municipal lien search) if performed, and all other fees charged by closing agent. **Seller** will deliver to **Buyer**, at (**Check one**) ☒ **Seller's** ☐ **Buyer's** expense and (**Check one**) ☒ within 30 days after Effective Date ☐ at least _____ days before Closing Date, (**Check one**)

(1) ☒ a title insurance commitment by a Florida licensed title insurer setting forth those matters to be discharged by **Seller** at or before closing and, upon **Buyer** recording the deed, an owner's policy in the

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amount of the purchase price for fee simple title subject only to the exceptions stated above. If **Buyer** is paying for the owner's title insurance policy and **Seller** has an owner's policy, **Seller** will deliver a copy to **Buyer** within 15 days after Effective Date.

(2) ☐ an abstract of title, prepared or brought current by an existing abstract firm or certified as correct by an existing firm. However, if such an abstract is not available to **Seller**, then a prior owner's title policy acceptable to the proposed insurer as a base for reissuance of coverage may be used. The prior policy will include copies of all policy exceptions and an update in a format acceptable to **Buyer** from the policy effective date and certified to **Buyer** or **Buyer's** closing agent together with copies of all documents recited in the prior policy and in the update. If such an abstract or prior policy is not available to **Seller**, then (1) above will be the title evidence.

(b) Title Examination: After receipt of the title evidence, **Buyer** will, within 10 days (10 days if left blank) but no later than Closing Date, deliver written notice to **Seller** of title defects. Title will be deemed acceptable to **Buyer** if (i) **Buyer** fails to deliver proper notice of defects or (ii) **Buyer** delivers proper written notice and **Seller** cures the defects within 30 days (30 days if left blank) ("Cure Period") after receipt of the notice. If the defects are cured within the Cure Period, closing will occur within 10 days after receipt by **Buyer** of notice of such cure. **Seller** may elect not to cure defects if **Seller** reasonably believes any defect cannot be cured within the Cure Period. If the defects are not cured within the Cure Period, **Buyer** will have 10 days after receipt of notice of **Seller's** inability to cure the defects to elect whether to terminate this contract or accept title subject to existing defects and close the transaction without reduction in purchase price.

(c) Survey: Buyer may, at **Buyer's** expense, have the Property surveyed and must deliver written notice to **Seller**, within 5 days after receiving survey but not later than 5 days before Closing Date, of any encroachments on the Property, encroachments by the Property's improvements on other lands, or deed restriction or zoning violations. Any such encroachment or violation will be treated in the same manner as a title defect and **Seller's** and **Buyer's** obligations will be determined in accordance with Paragraph 8(b).

(d) Ingress and Egress: Seller warrants that the Property presently has ingress and egress.

9. Property Condition: Seller will deliver the Property to **Buyer** at closing in its present "as is" condition, with conditions resulting from **Buyer's** Inspections and casualty damage, if any, excepted. **Seller** will not engage in or permit any activity that would materially alter the Property's condition without the **Buyer's** prior written consent.

(a) Inspections: (**Check (1) or (2)**)

(1) ☒ **Feasibility Study: Buyer** will, at **Buyer's** expense and within 60 days (30 days if left blank) ("Feasibility Study Period") after Effective Date and in **Buyer's** sole and absolute discretion, determine whether the Property is suitable for **Buyer's** intended use. During the Feasibility Study Period, **Buyer** may conduct a Phase 1 environmental assessment and any other tests, analyses, surveys, and investigations ("Inspections") that **Buyer** deems necessary to determine to **Buyer's** satisfaction the Property's engineering, architectural, and environmental properties; zoning and zoning restrictions; subdivision statutes; soil and grade; availability of access to public roads, water, and other utilities; consistency with local, state, and regional growth management plans; availability of permits, government approvals, and licenses; and other inspections that **Buyer** deems appropriate. If the Property must be rezoned, **Buyer** will obtain the rezoning from the appropriate government agencies. **Seller** will sign all documents **Buyer** is required to file in connection with development or rezoning approvals. **Seller** gives **Buyer**, its agents, contractors, and assigns, the right to enter the Property at any time during the Feasibility Study Period for the purpose of conducting Inspections, provided, however, that **Buyer**, its agents, contractors, and assigns enter the Property and conduct Inspections at their own risk. **Buyer** will indemnify and hold **Seller** harmless from losses, damages, costs, claims, and expenses of any nature, including attorneys' fees, expenses, and liability incurred in application for rezoning or related proceedings, and from liability to any person, arising from the conduct of any and all Inspections or any work authorized by **Buyer**. **Buyer** will not engage in any activity that could result in a construction lien being filed against the Property without **Seller's** prior written consent. If this transaction does not close, **Buyer** will, at **Buyer's** expense, (i) repair all damages to the Property resulting from the Inspections and return the Property to the condition it was in before conducting the Inspections and (ii) release to **Seller** all reports and other work generated as a result of the Inspections.

Before expiration of the Feasibility Study Period, **Buyer** must deliver written notice to **Seller** of **Buyer's** determination of whether or not the Property is acceptable. **Buyer's** failure to comply with this notice requirement will constitute acceptance of the Property as suitable for **Buyer's** intended use in its "as is" condition. If the Property is unacceptable to **Buyer** and written notice of this fact is timely delivered to **Seller**, this contract will be deemed terminated, and **Buyer's** deposit(s) will be returned.

Attachment: 627 N Ridgewood Avenue - Executed Contract (2022-R-5 : Sale of City Owned Property Locate at 627 Ridgewood Avenue)

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(2) ☐ **No Feasibility Study: Buyer** is satisfied that the Property is suitable for **Buyer's** purposes, including being satisfied that either public sewerage and water are available to the Property or the Property will be approved for the installation of a well and/or private sewerage disposal system and that existing zoning and other pertinent regulations and restrictions, such as subdivision or deed restrictions, concurrency, growth management, and environmental conditions, are acceptable to **Buyer**. This contract is not contingent on **Buyer** conducting any further investigations.

(b) Government Regulations: Changes in government regulations and levels of service which affect **Buyer's** intended use of the Property will not be grounds for terminating this contract if the Feasibility Study Period has expired or if Paragraph 9(a)(2) is selected.

(c) Flood Zone: Buyer is advised to verify by survey, with the lender, and with appropriate government agencies which flood zone the Property is in, whether flood insurance is required, and what restrictions apply to improving the Property and rebuilding in the event of casualty.

(d) Coastal Construction Control Line ("CCCL"): If any part of the Property lies seaward of the CCCL as defined in Section 161.053, Florida Statutes, **Seller** will provide **Buyer** with an affidavit or survey as required by law delineating the line's location on the Property, unless **Buyer** waives this requirement in writing. The Property being purchased may be subject to coastal erosion and to federal, state, or local regulations that govern coastal property, including delineation of the CCCL, rigid coastal protection structures, beach nourishment, and the protection of marine turtles. Additional information can be obtained from the Florida Department of Environmental Protection, including whether there are significant erosion conditions associated with the shore line of the Property being purchased.

☒ **Buyer** waives the right to receive a CCCL affidavit or survey.

10. Closing Procedure; Costs: Closing will take place in the county where the Property is located and may be conducted by mail or electronic means. If title insurance insures **Buyer** for title defects arising between the title binder effective date and recording of **Buyer's** deed, closing agent will disburse at closing the net sale proceeds to **Seller** (in local cashier's check if **Seller** requests in writing at least 5 days before closing) and brokerage fees to Broker as per Paragraph 21. In addition to other expenses provided in this contract, **Seller** and **Buyer** will pay the costs indicated below.

(a) Seller Costs:
Taxes on deed
Recording fees for documents needed to cure title
Title evidence (if applicable under Paragraph 8)
Estoppel Fee(s)
Other: _____

(b) Buyer Costs:
Taxes and recording fees on notes and mortgages
Recording fees on the deed and financing statements
Loan expenses
Title evidence (if applicable under Paragraph 8)
Lender's title policy at the simultaneous issue rate
Inspections
Survey
Insurance
Other: _____

(c) Prorations: The following items will be made current and prorated as of the day before Closing Date: real estate taxes (including special benefit tax liens imposed by a CDD), interest, bonds, assessments, leases, and other Property expenses and revenues. If taxes and assessments for the current year cannot be determined, the previous year's rates will be used with adjustment for any exemptions.

(d) Special Assessment by Public Body: Regarding special assessments imposed by a public body, **Seller** will pay (i) the full amount of liens that are certified, confirmed, and ratified before closing and (ii) the amount of the last estimate of the assessment if an improvement is substantially completed as of Effective Date but has not resulted in a lien before closing; and **Buyer** will pay all other amounts. If special assessments may be paid in installments, ☐ **Seller** ☒ **Buyer** (**Buyer** if left blank) will pay installments due after closing. If **Seller** is checked, **Seller** will pay the assessment in full before or at the time of closing. Public body does not include a Homeowners' or Condominium Association.

(e) PROPERTY TAX DISCLOSURE SUMMARY: BUYER SHOULD NOT RELY ON THE **SELLER'S** CURRENT PROPERTY TAXES AS THE AMOUNT OF PROPERTY TAXES THAT **BUYER** MAY BE OBLIGATED TO PAY IN THE YEAR SUBSEQUENT TO PURCHASE. A CHANGE OF OWNERSHIP OR PROPERTY

Attachment: 627 N Ridgewood Avenue - Executed Contract (2022-R-5 : Sale of City Owned Property Locate at 627 Ridgewood Avenue)

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IMPROVEMENTS TRIGGERS REASSESSMENTS OF THE PROPERTY THAT COULD RESULT IN HIGHER PROPERTY TAXES. IF YOU HAVE ANY QUESTIONS CONCERNING VALUATION, CONTACT THE COUNTY PROPERTY APPRAISER'S OFFICE FOR FURTHER INFORMATION.

(f) Foreign Investment in Real Property Tax Act ("FIRPTA"): If **Seller** is a "foreign person" as defined by FIRPTA, **Seller** and **Buyer** will comply with FIRPTA, which may require **Seller** to provide additional cash at closing.

(g) 1031 Exchange: If either **Seller** or **Buyer** wish to enter into a like-kind exchange (either simultaneously with closing or after) under Section 1031 of the Internal Revenue Code ("Exchange"), the other party will cooperate in all reasonable respects to effectuate the Exchange including executing documents, provided, however, that the cooperating party will incur no liability or cost related to the Exchange and that the closing will not be contingent upon, extended, or delayed by the Exchange.

11. Computation of Time: Calendar days will be used when computing time periods, except time periods of 5 days or less. Time periods of 5 days or less will be computed without including Saturday, Sunday, or national legal holidays specified in 5 U.S.C. 6103(a). Any time period ending on a Saturday, Sunday, or national legal holiday will extend until 5:00 p.m. (where the Property is located) of the next business day. **Time is of the essence in this contract.**

12. Risk of Loss; Eminent Domain: If any portion of the Property is materially damaged by casualty before closing or **Seller** negotiates with a governmental authority to transfer all or part of the Property in lieu of eminent domain proceedings or an eminent domain proceeding is initiated, **Seller** will promptly inform **Buyer**. Either party may terminate this contract by written notice to the other within 10 days after **Buyer's** receipt of **Seller's** notification, and **Buyer's** deposit(s) will be returned, failing which **Buyer** will close in accordance with this contract and receive all payments made by the governmental authority or insurance company, if any.

13. Force Majeure: Seller or **Buyer** will not be required to perform any obligation under this contract or be liable to each other for damages so long as the performance or non-performance of the obligation is delayed, caused, or prevented by an act of God or force majeure. An "act of God or "force majeure" is defined as hurricanes, earthquakes, floods, fire, unusual transportation delays, wars, insurrections, and any other cause not reasonably within the control of **Seller** or **Buyer** and which by the exercise of due diligence the non-performing party is unable in whole or in part to prevent or overcome. All time periods, including Closing Date, will be extended for the period that the act of God or force majeure is in place. However, in the event that such act of God or force majeure event continues beyond 30 days, either party may terminate this contract by delivering written notice to the other; and **Buyer's** deposit(s) will be returned.

14. Notices: All notices will be in writing and delivered to the parties and Broker by mail, personal delivery, or electronic means. **Buyer's failure to timely deliver written notice to Seller, when such notice is required by this contract, regarding any contingency will render that contingency null and void, and this contract will be construed as if the contingency did not exist. Any notice, document, or item delivered to or received by an attorney or licensee (including a transactions broker) representing a party will be as effective as if delivered to or received by that party.**

15. Complete Agreement; Persons Bound: This contract is the entire agreement between **Seller** and **Buyer**. **Except for brokerage agreements, no prior or present agreements will bind Seller, Buyer, or Broker unless incorporated into this contract.** Modifications of this contract will not be binding unless in writing, signed or initialed, and delivered by the party to be bound. Electronic signatures will be acceptable and binding. This contract, signatures, initials, documents referenced in this contract, counterparts, and written modifications communicated electronically or on paper will be acceptable for all purposes, including delivery, and will be binding. Handwritten or typewritten terms inserted in or attached to this contract prevail over preprinted terms. If any provision of this contract is or becomes invalid or unenforceable, all remaining provisions will continue to be fully effective. **Seller** and **Buyer** will use diligence and good faith in performing all obligations under this contract. This contract will not be recorded in any public record. The terms "**Seller**," "**Buyer**," and "Broker" may be singular or plural. This contract is binding on the heirs, administrators, executors, personal representatives, and assigns, if permitted, of **Seller**, **Buyer**, and Broker.

16. Default and Dispute Resolution: This contract will be construed under Florida law. This Paragraph will survive closing or termination of this contract.

(a) Seller Default: If **Seller** fails, neglects, or refuses to perform **Seller's** obligations under this contract, **Buyer** may elect to receive a return of **Buyer's** deposit(s) without thereby waiving any action for damages resulting from **Seller's** breach and may seek to recover such damages or seek specific performance. **Seller** will also be liable for the full amount of the brokerage fee.

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(b) Buyer Default: If **Buyer** fails, neglects, or refuses to perform **Buyer's** obligations under this contract, including payment of deposit(s), within the time(s) specified, **Seller** may elect to recover and retain the deposit(s), paid and agreed to be paid, for the account of **Seller** as agreed upon liquidated damages, consideration for execution of this contract, and in full settlement of any claims, whereupon **Seller** and **Buyer** will be relieved from all further obligations under this contract; or **Seller**, at **Seller's** option, may proceed in equity to enforce **Seller's** rights under this contract.

17. Attorney's Fees; Costs: In any litigation permitted by this Contract, the prevailing party shall be entitled to recover from the non-prevailing party costs and fees, including reasonable attorney's fees, incurred in conducting the litigation. This Paragraph 17 shall survive Closing or termination of this Contract.

18. Escrow Agent; Closing Agent: **Seller** and **Buyer** authorize Escrow Agent and closing agent (collectively "Agent") to receive, deposit, and hold funds and other items in escrow and, subject to Collection, disburse them upon proper authorization and in accordance with Florida law and the terms of this contract, including disbursing brokerage fees. "Collection" or "Collected" means any checks tendered or received have become actually and finally collected and deposited in the account of Agent. The parties agree that Agent will not be liable to any person for misdelivery of escrowed items to **Seller** or **Buyer**, unless the misdelivery is due to Agent's willful breach of this contract or gross negligence. If Agent interpleads the subject matter of the escrow, Agent will pay the filing fees and costs from the deposit and will recover reasonable attorneys' fees and costs to be paid from the escrowed funds or equivalent and charged and awarded as court costs in favor of the prevailing party.

19. Professional Advice; Broker Liability: Broker advises **Seller** and **Buyer** to verify all facts and representations that are important to them and to consult an appropriate professional for legal advice (for example, interpreting this contract, determining the effect of laws on the Property and this transaction, status of title, foreign investor reporting requirements, the effect of property lying partially or totally seaward of the CCCL, etc.) and for tax, property condition, environmental, and other specialized advice. **Buyer** acknowledges that Broker does not reside in the Property and that all representations (oral, written, or otherwise) by Broker are based on **Seller** representations or public records. **Buyer agrees to rely solely on Seller, professional inspectors, and government agencies for verification of the Property condition and facts that materially affect Property value. Seller** and **Buyer** respectively will pay all costs and expenses, including reasonable attorneys' fees at all levels, incurred by Broker and Broker's officers, directors, agents, and employees in connection with or arising from **Seller's** or **Buyer's** misstatement or failure to perform contractual obligations. **Seller** and **Buyer** hold harmless and release Broker and Broker's officers, directors, agents, and employees from all liability for loss or damage based on (i) **Seller's** or **Buyer's** misstatement or failure to perform contractual obligations; (ii) the use or display of listing data by third parties, including, but not limited to, photographs, images, graphics, video recordings, virtual tours, drawings, written descriptions, and remarks related to the Property; (iii) Broker's performance, at **Seller's** or **Buyer's** request, of any task beyond the scope of services regulated by Chapter 475, Florida Statutes, as amended, including Broker's referral, recommendation, or retention of any vendor; (iv) products or services provided by any vendor; and (v) expenses incurred by any vendor. **Seller** and **Buyer** each assume full responsibility for selecting and compensating their respective vendors. This Paragraph will not relieve Broker of statutory obligations. For purposes of this Paragraph, Broker will be treated as a party to this contract. This Paragraph will survive closing.

20. Commercial Real Estate Sales Commission Lien Act: If the Property is commercial real estate as defined by Section 475.701, Florida Statutes, the following disclosure will apply: The Florida Commercial Real Estate Sales Commission Lien Act provides that when a broker has earned a commission by performing licensed services under a brokerage agreement with you, the broker may claim a lien against your net sales proceeds for the broker's commission. The broker's lien rights under the act cannot be waived before the commission is earned.

21. Brokers: The brokers named below are collectively referred to as "Broker." **Instruction to closing agent: Seller** and **Buyer** direct closing agent to disburse at closing the full amount of the brokerage fees as specified in separate brokerage agreements with the parties and cooperative agreements between the Brokers, except to the extent Broker has retained such fees from the escrowed funds. This Paragraph will not be used to modify any MLS or other offer of compensation made by **Seller** or **Seller's** Broker to **Buyer's** Broker.

(a) Adams Cameron & Co. REALTORS (**Seller's** Broker) will be compensated by ☒ **Seller** ☐ **Buyer** ☐ both parties pursuant to ☒ a listing agreement ☐ other (specify): _____

(b) eXp Realty (**Buyer's** Broker) will be compensated by ☐ **Seller** ☐ **Buyer** ☐ both parties ☒ **Seller's** Broker pursuant to ☒ a MLS offer of compensation ☐ other (specify): _____

Buyer (JF) (____) and Seller (JF) (____) acknowledge receipt of a copy of this page, which is 6 of 7 pages.

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22. Addenda: The following additional terms are included in the attached addenda and incorporated into this Contract (**Check if applicable**)

☐ A. Back-up Contract

☐ B. Other _____

23. Additional Terms: Attached:

Articles of Organization for 627 Ridgewood LLC showing Garrett D Zinke as authorized representative

~~Exhibit "B" showing Requirements for 627 Ridgewood LLC Project~~ Exhibit B/Addendum JF

$50,000 Escrow Agreement

COUNTER-OFFER/REJECTION

☐ Seller counters Buyer's offer (to accept the counter-offer, Buyer must sign or initial the counter-offered terms and deliver a copy of the acceptance to Seller).

☐ Seller rejects Buyer's offer

This is intended to be a legally binding contract. If not fully understood, seek the advice of an attorney before signing.

Buyer: _____ Date: 01/11/22

Print name: 627 Ridgewood LLC

Buyer: _____ Date: _____

Print name: _____

Buyer's address for purpose of notice:

Address: 107 Park Avenue, Daytona Beach, FL 32118

Phone: _____ Fax: _____ Email: _____

Seller: Joseph Forte Date: 01/11/2022 10:52 AM EST

Print name: CITY OF HOLLY HILL - Joe Forte

Seller: _____ Date: _____

Print name: _____

Seller's address for purpose of notice:

Address: 1065 Ridgewood Ave, Holly Hill, FL 32117

Phone: 386-248-9438 Fax: _____ Email: jforte@hollyhillfl.org

Effective Date: _____ **(The date on which the last party signed or initialed and delivered the final offer or counter offer.)**

Florida REALTORS® makes no representation as to the legal validity or adequacy of any provision of this form in any specific transaction. This standardized form should not be used in complex transactions or with extensive riders or additions. This form is available for use by the entire real estate industry and is not intended to identify the user as REALTOR®. REALTOR® is a registered collective membership mark which may be used only by real estate licensees who are members of the NATIONAL ASSOCIATION OF REALTORS® and who subscribe to its Code of Ethics. The copyright laws of United States (17 U.S. Code) forbid the unauthorized reproduction of this form by any means including facsimile or computerized forms.

Buyer (____) (____) and Seller (JF) (____) acknowledge receipt of a copy of this page, which is 7 of 7 pages.

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ADDENDUM

WHEREAS, on the 11th day of January, 2021, the City of Holly Hill (City) and 627 Ridgewood, LLC (Buyer) have entered into a Purchase and Sale Agreement for the purchase of the Subject Property for a purchase price of $200,000.00.

WHEREAS, the City is selling the Subject Property to the Buyer due to the Buyer's proposed development plans for the Subject Property. The proposed development is described in Exhibit A hereto.

WHEREAS, the City would not sell the Subject Property for this purchase price if the Buyer was not going to develop the Subject Property.

WHEREAS, the City requires assurance that the Buyer will develop the Subject Property pursuant to development plans attached as Exhibit A within a reasonable time of acquiring title to the Subject Property.

NOW, THEREFORE, for and in mutual consideration provided herein and the terms and conditions of the Purchase and Sale Agreement, the undersigned parties hereby agree to the following:

1) At the closing of the transaction in the Purchase and Sale Agreement, the Buyer shall deposit $50,000.00 to be held by escrow agent, Scott E. Simpson, PA, pursuant to the terms and conditions herein and the Escrow Agreement attached as Exhibit B.

2) The terms and conditions of the Escrow Agreement shall be the following:

a) If the Buyer receives a Certificate of Occupancy from the City by June 28, 2024 for the development described in Exhibit A, the Escrow Agent shall release the $50,000.00 to the Buyer.

b) If the Buyer does not receive a Certificate of Occupancy from the City by June 28, 2024 for the development described in Exhibit A and deliver it to the Escrow Agent by July 8, 2024, the Escrow Agent shall release the $50,000 to the City.

3) The Escrow Agent shall be Scott E. Simpson, PA and shall serve according to the terms and conditions of the Escrow Agreement attached as Exhibit B.

City of Holly Hill

BY: _____

TITLE: City Manager

DATE: 1-11-2022

627 Ridgewood, LLC

BY: _____

TITLE: Managing Member

DATE: 01/11/22

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EXHIBIT "B"

627 N Ridgewood Ave, Holly Hill, FL 32117

Requirements for the 627 Ridgewood LLC Project shall be:

1) Buyer shall request to rezone the Subject Property to a planned development (PD) zoning.

2) The Project shall be a building with a minimum footprint of 16,000 sq. ft. with a construction budget of approximately $2.5 million.

3) The building shall be constructed of a steel frame with a façade consistent with the Community Development Agency design standards. The Buyer shall request during the PD negotiation process for the building to have a ceiling height of 40 feet and will include as many windows on the west side facing Ridgewood Avenue as reasonably possible. The remaining space, where possible, will have a second floor outdoor patio space and additional seating at the ground level.

4) The Buyer will occupy at least 50% of the space of the building for its rock climbing operations. The remaining space may be designed and constructed with the intention of leasing the space to other businesses whose uses shall be consistent with the modified CC1 and Overlay District and approved in the Planned Development Agreement.

Joseph Forte AuthentiSIGN 01/11/22

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ESCROW AGREEMENT

THIS ESCROW AGREEMENT (the "Agreement") is made and entered into this 10 day of January, 2022, by and among CITY OF HOLLY HILL (City), 627 RIDGEWOOD, LLC (Buyer) and SCOTT E. SIMPSON, PA ("Escrow Agent").

RECITALS

WHEREAS, the Buyer is under contract to purchase from the City a parcel of vacant real property located at 627 Ridgewood Avenue, Holly Hill, Florida and with a legal description attached hereto marked as Exhibit A (Subject Property). Contract for S & P JF

WHEREAS, the City agreed to sell the Subject Property for $200,000.00 due to the development project the Buyer proposed to construct on the Subject Property, a description of the project is attached as Exhibit B./Addendum JF

WHEREAS, to insure that the project proposed by the Buyer is constructed, the City and Buyer entered into an Addendum to the Purchase and Sales Contract to require the Buyer to deposit a performance guarantee of $50,000.00 to be held in escrow.

WHEREAS, if the Buyer obtains a Certificate of Occupancy by a certain date for the project described in Exhibit B, the performance guarantee payment of $50,000.00 will be returned to the Buyer.

WHEREAS, if the Buyer fails to obtain a Certificate of Occupancy for the project described in Exhibit B by a certain date, the performance guarantee of $50,000.00 shall be paid to the City.

NOW THEREFORE, in consideration of the foregoing premises and of the respective agreements and covenants contained herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and intending to be legally bound hereby, the parties hereto agree as follows:

ARTICLE 1
ACCEPTANCE OF APPOINTMENT AND DEPOSIT INTO ESCROW

Section 1.1 WHEREAS Recitals. The recitals in the above WHEREAS are hereby incorporated herein as is specifically set forth.

Section 1.2 Acceptance of Appointment as Escrow Agent. The Escrow Agent hereby accepts the appointment as Escrow Agent and agrees to hold and distribute all Escrow Funds in accordance with the terms and conditions of this Agreement.

Section 1.3 Deposit of Escrow Funds. Upon the full execution of this Agreement and at the closing of the Buyer's acquisition of the Subject Property from the Seller, the Buyer shall deposit the $50,000.00 performance guarantee to be held in the Scott E. Simpson Trust Account pursuant to the terms and condition of this Agreement.

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ARTICLE 2
RELEASE FROM ESCROW

Section 2.1 Release of Escrow Funds. Escrow Agent shall release the $50,000.00 performance guarantee to the Buyer if the Buyer receives a Certificate of Occupancy from the City upon completion of the project described in Exhibit B on the Subject Property by June 28, 2024. In the event the Buyer does not obtain a Certificate of Occupancy from the City for the project described in Exhibit B on the Subject Property by June 28, 2024, the Escrow Agent shall release the $50,000.00 performance guarantee to the City.

The above determination by the Escrow Agent shall be based solely on whether the City has issued a Certificate of Occupancy for the project described in Exhibit B on the Subject Property by June 28, 2024, and a copy of said Certificate of Occupancy must be provided to the Escrow Agent by July 8, 2024.

Section 2.2 Disbursement into Court. Notwithstanding anything in this Agreement to the contrary, if at any time there shall exist any dispute between any of the parties, or any other obligation of the Escrow Agent hereunder, or if at any time the Escrow Agent is unable to determine, to the Escrow Agent's reasonable satisfaction, the proper disposition of the Escrow Funds or the Escrow Agent's proper actions with respect to its obligations hereunder, then the Escrow Agent may, in its reasonable discretion, take either or both of the following actions: (i) suspend the performance of any of its obligations under this Agreement until such dispute or uncertainty shall be resolved to the reasonable satisfaction of the Escrow Agent; and/or (ii) petition (by means of an interpleader action or any other appropriate method) any court of competent jurisdiction in Volusia County, Florida for instructions with respect to such dispute or uncertainty, and pay into and/or deposit with such court all Escrow Funds held by Escrow Agent, and deliver the Escrow Funds for holding and disposition in accordance with the instructions of such court.

ARTICLE 3
RIGHTS/RESPONSIBILITIES OF ESCROW AGENT AND RELEASE OF ESCROW AGENT

Section 3.1 Rights and Responsibilities of the Escrow Agent. The duties and responsibilities of the Escrow Agent shall be limited to those expressly set forth in this Agreement.

ARTICLE 4
MISCELLANEOUS

Section 4.1 Notices. All notices, requests, consents or other communications required or permitted under this Agreement shall be in writing and shall be deemed to have been duly given or delivered by any party: (a) when received by such party if delivered by hand, (b) upon confirmation when delivered by fax, (c) within one day after being sent by recognized overnight delivery service, or (d) within three business days after being mailed by certified U.S. mail, postage prepaid, and in each case addressed as provided for in the Contract. Any party by written notice to the other parties pursuant to this section may change the address or the persons to whom notices or copies thereof shall be directed.

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Section 4.2 Amendment. This Agreement may be amended or modified only by an instrument in writing duly executed by the parties to this Agreement.

Section 4.3 Attorneys' Fees and Costs. In connection with any litigation arising out of the enforcement or interpretation of this Agreement, the prevailing party shall be entitled to recover from the other, all costs incurred, including reasonable attorneys' fees, including without limitation trial and appellate proceedings and in bankruptcy.

Section 4.4 Counterparts, Faxes and Emails: This Agreement may be executed in counterparts, and signatures on copies of this Agreement which are transmitted by facsimile or email shall be deemed originals for all purposes.

The parties hereto have caused this Agreement to be executed by their duly authorized officers as of the day and year first above written.

Witness

Peggy C Collier

Valerie Manning

Peggy C. Collier

Valerie Manning

Escrow Agent

Scott E. Simpson, P.A.

Date: 1/10/22

City of Holly Hill

By:

Title: City Manager

Date: 1 - 11 - 2022

AuthentiSIGN

Nathan Mowery 01/11/22

627 Ridgewood, LLC

AuthentiSIGN

By:

Title: Managing Member

Date: 01/11/22

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AFFILIATED BUSINESS ARRANGEMENT DISCLOSURE STATEMENT

TO: Consumer
FROM: eXp Realty
PROPERTY: 627 Ridgewood Ave, Holly Hill, FL 32117
DATE: 01/11/22

This is to give you notice that eXp World Holdings, Inc., the parent corporation of eXp Realty, LLC, eXp Realty of California, Inc., eXp Realty North, LLC, eXp Realty of Connecticut, LLC, and eXp Realty Associates, LLC (hereinafter collectively referred to as "**eXp Realty**"), has a business relationship with those companies listed in this Disclosure Statement. Because of these relationships, the referral of business to any of the companies listed below may provide us, the related parties noted herein and/or their investors, a financial or other benefit.

In connection with the purchase or sale of this property, you may need mortgage financing, title insurance and/or closing services. We recommend IntroLend First Cloud, LLC ("IntroLend") for mortgage financing, and SilverLine Title & Escrow, LLC ("SilverLine Title") for title insurance and closing services. eXp Realty is a subsidiary of eXp World Holdings, Inc., the parent corporation. eXp World Holdings, Inc. has a 50% ownership interest in First Cloud Investment Group, LLC with the other 50% owned by its affiliated real estate agents that have chosen to purchase an ownership interest. First Cloud Investment Group, LLC owns 100% of IntroLend First Cloud, LLC. Neither eXp World Holdings, Inc. nor any of its subsidiaries have an ownership interest in any other investors that have ownership interests in First Cloud Investment Group, LLC. eXp Silverline Ventures, LLC, a subsidiary of eXp World Holdings, Inc., has a 50% ownership interest in SilverLine Title. Neither eXp World Holdings, Inc. nor any of its subsidiaries have an ownership interest in Orange & Blue Holdings 3.0, LLC, which has ownership interest in SilverLine Title.

eXp Realty has a business relationship with, but no ownership interest in, America's Preferred Home Warranty, Inc. As such, eXp Realty, or its affiliates, may receive financial benefit in the form of marketing fees or fees for services rendered. You are not required to obtain a home warranty and or obtain a home warranty from this America's Preferred Home Warranty, Inc. as a condition to using eXp Realty's brokerage services.

IntroLend First Cloud, LLC is a mortgage broker. The estimated lender fees listed below can vary and could include additional charges depending upon factors such as the loan product you select and the State where the property is located. There may also be other fees/charges relating to services provided by additional third party settlement service providers. The estimated charges for the settlement services provided by IntroLend First Cloud, LLC are detailed on the Good Faith Estimate being provided to you by your loan officer.

Set forth below is the estimated charge or range of charges for the settlement services listed. You are NOT required to use the listed provider as a condition for the purchase, sale, or refinance of the subject property. THERE ARE FREQUENTLY OTHER SETTLEMENT SERVICE PROVIDERS AVAILABLE WITH SIMILAR SERVICES. YOU ARE FREE TO SHOP AROUND TO DETERMINE THAT YOU ARE RECEIVING THE BEST SERVICES AND THE BEST RATE FOR THESE SERVICES.

COMPANY	ESTIMATED CHARGE OR RANGE OF CHARGES
IntroLend First Cloud, LLC ("IntroLend")	Loan Origination Charge 0-3.00% of loan amount (may include 3rd party fees)

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Authentisign ID: B32FE25D-5173-EC11-94F6-281878CED430

COMPANY	ESTIMATED CHARGE OR RANGE OF CHARGES
This company provides various real estate mortgage loan origination activities either as a third-party originator or a mortgage broker, including loan pre-qualification, competitive bid process (when providing third-party origination services), loan origination, loan pre-approval, loan structuring, processing and closing.	Loan Discount Fee/points[1] 0-5% of loan amount Application/Processing Fee[2] $0.00 – $875.00 Flood and tax service: $0.00 - $95.00 Underwriting Fee: $0.00 - $995.00 Document Review Fee: $0.00 - $500.00 Appraisal Fee: $0.00 - $650.00 Credit Report Fee: $0.00 - $65.00 Actual charges may vary according to the particular lender selected, the particular circumstances of the underlying transaction, borrower elections, etc. Some or all of these fees may be charged by third-parties and/or the Member Mortgage Lender/Mortgage Broker. The Member Lenders and Mortgage Brokers have agreed to pay a fee ranging from 0.5% to 2.0% of the loan amount to IntroLend in connection with a range of loan origination services provided by IntroLend to the Member Lender/Mortgage Broker. The fees are paid directly to IntroLend by the Member Lender/Mortgage Broker and are not billed directly to you. [1] The loan discount fee/points are affected by the note rate. Depending upon market conditions, the loan discount fee/points may be higher to adjust for below-market rates. [2] There are other charges imposed in connection with mortgage loans. In addition, a lender may require the use of other service providers, including but not limited to any attorney, credit reporting agency or real estate appraiser chosen to represent the lender's interest. If you apply to any of these companies for a loan, you will receive additional information regarding anticipated charges.
SilverLine Title & Escrow, LLC This company provides title insurance and closing services.	Title Insurance Policy: $950 - $1706 on a $250,000 property. (Rates vary and are dependent on the state, selling price and loan amount on the property.) Title Search Fee: $250 - $325 (where applicable) Closing Fee: $450 - $550

ACKNOWLEDGMENT OF RECEIPT OF DISCLOSURE

I/we have read this Affiliated Business Arrangement Disclosure Statement provided by the Broker, eXp Realty, and understand that eXp Realty is referring me/us to the above-described settlement service(s) and the Broker or its affiliate(s) may receive a financial or other benefit as the result of this referral.

Seller 1:

Signature

Buyer 1:

AuthentiSIGN

Signature

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Version No.: 12.15.20

Attachment: 627 N Ridgewood Avenue - Executed Contract (2022-R-5 : Sale of City Owned Property Locate at 627 Ridgewood Avenue)

Authentisign ID: B32FE25D-5173-EC11-94F6-281878CED430

Print Name	627 Ridgewood LLC Print Name
Date	01/11/22 Date

Seller 2:

Signature	Signature
Print Name	Print Name
Date	Date

Attachment: 627 N Ridgewood Avenue - Executed Contract (2022-R-5 : Sale of City Owned Property Locate at 627 Ridgewood Avenue)

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Version No.: 12.15.20

EXHIBIT "B"

The requirements for the Project shall be:

1) Buyer shall request to rezone the Subject Property to a planned development (PD) zoning.

2) The Project shall be a building with a minimum footprint of 16,000 sq. ft. with a construction budget of approximately $2.5 million.

3) The building shall be constructed of a steel frame with a façade consistent with the Community Development Agency design standards. The Buyer shall request during the PD negotiation process for the building to have a ceiling height of 40 feet and will include as many windows on the west side facing Ridgewood Ave as reasonably possible. The remaining space, where possible, will have a second floor outdoor patio space and additional seating at the ground level.

4) The Buyer will occupy at least 50% of the space of the building for its rock climbing operations. The remaining space can be designed and constructed with the intention of leasing the space to other businesses whose uses shall be consistent with the modified CC1 and Overlay District and approved in the PD Development Agreement.

Attachment: EXHIBIT - B, Daytona Climbing Company (1) (2022-R-5 : Sale of City Owned Property Locate at 627 Ridgewood Avenue)

ESCROW AGREEMENT

THIS ESCROW AGREEMENT (the "Agreement") is made and entered into this ___ day of _____, 2021, by and among CITY OF HOLLY HILL (City), 627 RIDGEWOOD, LLC (Buyer) and SCOTT E. SIMPSON, PA ("Escrow Agent").

RECITALS

WHEREAS, the Buyer acquired from the City a parcel of vacant real property located at 627 Ridgewood Avenue, Holly Hill, Florida and with a legal description attached hereto marked as Exhibit A (Subject Property).

WHEREAS, the City agreed to sell the Subject Property for $200,000.00 due to the development project the Buyer proposed to construct on the Subject Property, a description of the project is attached as Exhibit B.

WHEREAS, to insure that the project proposed by the Buyer is constructed, the City and Buyer entered into an Addendum to the Purchase and Sales Contract to require the Buyer to deposit a performance guarantee of $50,000.00 to be held in escrow.

WHEREAS, if the Buyer obtains a Certificate of Occupancy by a certain date for the project described in Exhibit B, the performance guarantee payment of $50,000.00 will be returned to the Buyer.

WHEREAS, if the Buyer fails to obtain a Certificate of Occupancy for the projected described in Exhibit B by a certain date, the performance guarantee of $50,000.00 shall be paid to the City.

NOW THEREFORE, in consideration of the foregoing premises and of the respective agreements and covenants contained herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and intending to be legally bound hereby, the parties hereto agree as follows:

ARTICLE 1
ACCEPTANCE OF APPOINTMENT AND DEPOSIT INTO ESCROW

Section 1.1 WHEREAS Recitals. The recitals in the above WHEREAS are hereby incorporated herein as is specifically set forth.

Section 1.2 Acceptance of Appointment as Escrow Agent. The Escrow Agent hereby accepts the appointment as Escrow Agent and agrees to hold and distribute all Escrow Funds in accordance with the terms and conditions of this Agreement.

Attachment: Holly Hill Escrow Agreement, Daytona Climbing Company (2022-R-5 : Sale of City Owned Property Locate at 627 Ridgewood

Section 1.3 Deposit of Escrow Funds. Upon the full execution of this Agreement, the Buyer shall deposit the $50,000.00 performance guarantee to be held in the Scott E. Simpson Trust Account pursuant to the terms and condition of this Agreement.

ARTICLE 2
RELEASE FROM ESCROW

Section 2.1 Release of Escrow Funds. Escrow Agent shall release the $50,000.00 performance guarantee to the Buyer if the Buyer receives a Certificate of Occupancy from the City upon completion of the project described in Exhibit B on the Subject Property by _____. In the event the Buyer does not obtain a Certificate of Occupancy from the City for the project described in Exhibit B on the Subject Property by _____, the Escrow Agent shall release the $50,000.00 performance guarantee to the City.

The above determination by the Escrow Agent shall be based solely on whether the City has issued a Certificate of Occupancy for the project described in Exhibit B on the Subject Property by _____ and a copy of said Certificate of Occupancy must be provided to the Escrow Agent by _____.

Section 2.2 Disbursement into Court. Notwithstanding anything in this Agreement to the contrary, if at any time there shall exist any dispute between any of the parties, or any other obligation of the Escrow Agent hereunder, or if at any time the Escrow Agent is unable to determine, to the Escrow Agent's reasonable satisfaction, the proper disposition of the Escrow Funds or the Escrow Agent's proper actions with respect to its obligations hereunder, then the Escrow Agent may, in its reasonable discretion, take either or both of the following actions: (i) suspend the performance of any of its obligations under this Agreement until such dispute or uncertainty shall be resolved to the reasonable satisfaction of the Escrow Agent; and/or (ii) petition (by means of an interpleader action or any other appropriate method) any court of competent jurisdiction in Volusia County, Florida for instructions with respect to such dispute or uncertainty, and pay into and/or deposit with such court all Escrow Funds held by Escrow Agent, and deliver the Escrow Funds for holding and disposition in accordance with the instructions of such court.

ARTICLE 3
RIGHTS/RESPONSIBILITIES OF ESCROW AGENT AND RELEASE OF ESCROW AGENT

Section 3.1 Rights and Responsibilities of the Escrow Agent. The duties and responsibilities of the Escrow Agent shall be limited to those expressly set forth in this Agreement.

ARTICLE 4
MISCELLANEOUS

Section 4.1 Notices. All notices, requests, consents or other communications required or permitted under this Agreement shall be in writing and shall be deemed to have been duly given or delivered by any party: (a) when received by such party if delivered by hand, (b) upon confirmation

Attachment: Holly Hill Escrow Agreement, Daytona Climbing Company (2022-R-5 : Sale of City Owned Property Locate at 627 Ridgewood

when delivered by fax, (c) within one day after being sent by recognized overnight delivery service, or (d) within three business days after being mailed by certified U.S. mail, postage prepaid, and in each case addressed as provided for in the Contract. Any party by written notice to the other parties pursuant to this section may change the address or the persons to whom notices or copies thereof shall be directed.

Section 4.2 Amendment. This Agreement may be amended or modified only by an instrument in writing duly executed by the parties to this Agreement.

Section 4.3 Attorneys' Fees and Costs. In connection with any litigation arising out of the enforcement or interpretation of this Agreement, the prevailing party shall be entitled to recover from the other, all costs incurred, including reasonable attorneys' fees, including without limitation trial and appellate proceedings and in bankruptcy.

Section 4.4 Counterparts, Faxes and Emails: This Agreement may be executed in counterparts, and signatures on copies of this Agreement which are transmitted by facsimile or email shall be deemed originals for all purposes.

The parties hereto have caused this Agreement to be executed by their duly authorized officers as of the day and year first above written.

Witness

_____

_____

_____

_____

_____

_____

Escrow Agent

_____
Scott E. Simpson, P.A.

Date:_____

City of Holly Hill

By:_____

Title:_____

Date:_____

627 Ridgewood, LLC

By:_____

Title:_____

Date:_____

Attachment: Holly Hill Escrow Agreement, Daytona Climbing Company (2022-R-5 : Sale of City Owned Property Locate at 627 Ridgewood

HOLLY HILL
FLORIDA

STAFF REPORT
CITY OF HOLLY HILL, FLORIDA

City Commission
Resolution

MEETING DATE: **January 25, 2022**
FROM: **Antoine Khoury**
SUBJECT: **A Resolution of the City of Holly Hill, Volusia County, Florida Adopting an Infrastructure Priority List for the Coronavirus Local Fiscal Recovery Fund Established Under the American Rescue Plan Act; Providing for Conflicting Resolutions; Providing for Severability; and Providing for an Effective Date.**
NUMBER: **2022-R-6**
APPLICANT:
PLANNER:

DISCUSSION:

The city is expected to receive a direct allocation from the State of Florida's Coronavirus Local Fiscal Recovery Fund (CLFRF) as provided for by the American Rescue Plan Act (ARPA). The CLFRF allocation for the City of Holly Hill is **$6,189,048**.

The deadline for expending CLFRF funds is December 31, 2024. The use categories for the funds are comprised of four categories, which are:

(1) to respond to the public health emergency with respect to the Coronavirus Disease 2019 (COVID-19) or its negative economic impacts, including assistance to households, small businesses, and nonprofits, or aid to impacted industries such as tourism, travel, and hospitality;

(2) to respond to workers performing essential work during the COVID-19 public health emergency by providing premium pay to eligible workers of the metropolitan city, non-entitlement unit of local government, or county that are performing such essential work, or by providing grants to eligible employers that have eligible workers who perform essential work;

(3) for the provision of government services to the extent of the reduction in revenue of such metropolitan city, non-entitlement unit of local government, or county due to the COVID-19 public health emergency relative to revenues collected in the most recent full fiscal year of the metropolitan city, non-entitlement unit of local government, or county prior to the emergency; or

(4) to make necessary investments in water, sewer, or broadband infrastructure.

The estimated CLFRF funding allocable to the City of Holly Hill will be provided in two equal payments of **$3,094,524** per the ARPA.

Staff has been emphasizing the need to rehabilitate our aging infrastructure, which has been financially impossible in the past. These funds will allow the City to enhance our infrastructure over the course of a few years that would have otherwise taken us a decade or more to find an

adequate funding source. As a result, staff is strongly recommending that these funds be used to address the much-needed improvements in sewer infrastructure.

Staff has identified the top infrastructure improvement need is (Construction of 3rd Biological Treatment Unit) BTU #3. Since there is a deadline to spend the allocation, it is important that the City Commission expedite this request to allow staff to get started.

Furthermore, if the construction bids for the 3rd BTU comes in at a lower cost of the current estimate, city staff has indemnified the following water and sewer infrastructure projects:

2. Relocation of the sewer main that is coming into the sewer plant (under the Holly hill Canal) to Alta Drive Bridge
3. Lift station 4 & 21
4. Cavanagh Water Main Replacement
5. Upgrade Influent Head works

FISCAL ANALYSIS:

The city has received the first payment from the ARPA funding @ $3,094,524 and expect the second payment within next year.

STAFF RECOMMENDATION:

Staff recommends that the City Commission approve the selection of the construction of the 3rd BTU and the first priority for ARPA funded projects and the following water sewer infrastructure projects as the additional projects in priority order:

2. Relocation of the sewer main that is coming into the sewer plant (under the Holly hill Canal) to Alta Drive Bridge
3. Lift station 4 & 21
4. Cavanagh Water Main Replacement
5. Upgrade Influent Head works

COMMISSION GOAL:

Goal #1: Develop and maintain a sound and sustainable financial plan for the city that establishes sufficient reserves for all funds, ensures (whenever possible) that user fees pay for services rendered, provides a realistic capital improvement program, and encourages public/private sector partnerships and intergovernmental partnerships.

Goal #4: Provide proficient public health and safety services in terms of police and fire protection, water, storm water, waste water and solid waste management and disaster preparedness with a focus on intergovernmental collaboration, private sector partnerships, and utilization of technologies and proven innovations.

MOTION:

That the City Commission approve the selection of the construction of the 3rd BTU and the first priority for ARPA funded projects and the following water sewer infrastructure projects as the additional projects, if funding is available, in priority order:

2. Relocation of the sewer main that is coming into the sewer plant (under the Holly hill Canal) to Alta Drive Bridge
3. Lift station 4 & 21
4. Cavanagh Water Main Replacement
5. Upgrade Influent Head works

Resolution No. 2022-6

A RESOLUTION OF THE CITY OF HOLLY HILL, VOLUSIA COUNTY, FLORIDA ADOPTING AN INFRASTRUCTURE PRIORITY LIST FOR THE CORONAVIRUS LOCAL FISCAL RECOVERY FUND ESTABLISHED UNDER THE AMERICAN RESCUE PLAN ACT; PROVIDING FOR CONFLICTING RESOLUTIONS; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

A RESOLUTION OF THE CITY OF HOLLY HILL, VOLUSIA COUNTY, FLORIDA ADOPTING AN INFRASTRUCTURE PRIORITY LIST FOR THE CORONAVIRUS LOCAL FISCAL RECOVERY FUND ESTABLISHED UNDER THE AMERICAN RESCUE PLAN ACT; PROVIDING FOR CONFLICTING RESOLUTIONS; PROVIDING FOR SEVERABILITY AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, since the first case of coronavirus disease 2019 (COVID-19) was discovered in the United States in January 2020, the disease has infected over 70 million and killed over 880,000 Americans ("Pandemic"); and

WHEREAS, as a result of the Pandemic, cities have been called on to respond to the needs of their communities; and

WHEREAS, city revenues have faced severe economic impacts due to the Pandemic; and

WHEREAS, Congress adopted the American Rescue Plan Act in March 2021 ("ARPA"), which included $65 billion in recovery funds for cities across the country; and

WHEREAS, ARPA funds are intended to provide support to state, local, and tribal governments in responding to the impact of COVID-19; and

WHEREAS, approximately $6,189,048 will be disbursed to the City of Holly Hill pursuant to the ARPA allocation; and

WHEREAS, the United States Department of Treasury has adopted guidance regarding the use of ARPA funds; and

WHEREAS, the City, in response to the Pandemic, has had expenditures and anticipates future expenditures consistent with the Department of Treasury's ARPA guidance; and

WHEREAS, the State of Florida will distribute ARPA funds to the City because its population is less than 50,000; and

WHEREAS, the City Commission deems it in the best interest of the City of Holly Hill to invest in the rehabilitation of our aging water and sewer infrastructure as established under the American Rescue Plan Act.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF HOLLY HILL, FLORIDA:

SECTION 1. The City Commission of the City of Holly Hill hereby adopts the construction of Biological Treatment Unit #3 as the top priority project and the and the following water sewer infrastructure projects as the additional projects, if funding is available, in priority order:

2. Relocation of the sewer main that is coming into the sewer plant (under the Holly hill Canal) to Alta Drive Bridge
3. Lift station 4 & 21
4. Cavanagh Water Main Replacement
5. Upgrade Influent Head works

for the Coronavirus Local Fiscal Recovery Fund.

SECTION 2. EFFECTIVE DATE. This resolution shall take effect immediately upon its adoption.

APPROVED AND AUTHENTICATED on this 25th day of JANUARY, 2022.

HOLLY HILL
FLORIDA

STAFF REPORT
CITY OF HOLLY HILL, FLORIDA

City Commission
Resolution

MEETING DATE: **January 25, 2022**
FROM: **Antoine Khoury**
SUBJECT: **A Resolution of the City Commission of the City of Holly Hill, Florida, Approving Continuing Contracts with Previously Approved Engineering Firms Selected through the Consultants Competitive Negotiations Act and Authorizing the City Manager to Execute Continuing Contracts with Each Selected Firm; Providing for Severability; and Providing for an Effective Date.**
NUMBER: **2022-R-7**
APPLICANT:
PLANNER:

DISCUSSION:

On Nov 23, 2021 the City Commission approved the selection of four (4) consulting firms as the General Engineering Consultants for the City and authorized the Public Works Director to enter into negotiation for term and fees for these continuing contracts. Those Firms were:

1. Mead and Hunt Inc.
2. Parker Mynchenberg & Associates
3. Zev Cohen and Associates
4. Dredging & Marine Consultants

The term for these contracts will be for three years with two (2) additional one (1) year extension at the sole discretion of the City. The received and negotiated fees have been added to the signed contract and attached to this agenda Item.

FISCAL ANALYSIS:

The services that these recommended consultants will perform is for Capital Improvements Projects under a Services for Continuing Contracts that are funded through the Annual Budget Process.

STAFF RECOMMENDATION:

Staff recommends Commission approve the final contracts of the selected firms.

COMMISSION GOAL:

Goal #2: Enhance City aesthetics through beautification and maintenance of city property and public rights of way, consistent enforcement of zoning and property maintenance codes, and development of reasonable design standards and a corresponding process which is applicable to all new developments and business improvements in the city.

MOTION:

APPROVE THE CONTINUING CONTRACTS WITH SELECTED ENGINEERING FIRMS AND AUTHORIZE THE CITY MANAGER TO EXECUTE.

ATTACHMENTS:

- PM Signed Agreement (PDF)
- DMC Signed Agreement (PDF)
- MH Signed Agreement (PDF)
- ZEV-Cohen-Signed (PDF)

Resolution No. 2022-7

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF HOLLY HILL, FLORIDA, APPROVING CONTINUING CONTRACTS WITH PREVIOUSLY APPROVED ENGINEERING FIRMS SELECTED THROUGH THE CONSULTANTS COMPETITIVE NEGOTIATIONS ACT AND AUTHORIZING THE CITY MANAGER TO EXECUTE CONTINUING CONTRACTS WITH EACH SELECTED FIRM; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF HOLLY HILL, FLORIDA, APPROVING THE CONTINUING CONTRACTS WITH PREVIOUSLY APPROVED ENGINEERING FIRMS SELECTED THROUGH THE CONSULTANTS COMPETITIVE NEGOTIATIONS ACT AND AUTHORIZING THE CITY MANAGER TO EXECUTE CONTINUING CONTRACTS WITH EACH SELECTED ENGINEERING FIRM; AND PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City ranked Mead and Hunt Inc., Parker Mynchenberg & Associates, Zev Cohen and Associates and Dredging & Marine Consultants as pursuant to the Consultants Competitive Negotiations Act on November 23, 2021 and directed City staff to negotiate contracts with each contractor; and

WHEREAS, City staff has negotiated continuing contracts with each of the selected contractors; and

WHEREAS, City staff is requesting approval of the continuing contracts with these selected firms.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF HOLLY HILL, FLORIDA:

SECTION 1. That the City Commission of the City of Holly Hill hereby approves the attached continuing contracts with the four (4) selected engineering firms and authorize the City Manager to execute the continuing contracts with each firm.

SECTION 2. SEVERABILITY. If any section or portion of a section of this Resolution proves to be invalid, unlawful, or unconstitutional, it shall not be held to invalidate or impair the validity, force, or effect of any other section or part of this Resolution.

SECTION 3. EFFECTIVE DATE. This Resolution shall take effect immediately upon its adoption.

APPROVED AND AUTHENTICATED on this 25th day of JANUARY, 2022.

PROFESSIONAL CONSULTANT SERVICES AGREEMENT
Professional Design/CEI Services For Roadways, Stormwater And Utilities Projects
Request for Qualification (RFQ) #22-PW-01

THIS AGREEMENT is made and entered into this ___ day of January, 2022, by and between Parker Mynchenberg & Associates, Inc. duly authorized to conduct business in the State of Florida and whose address is 1729 Ridgewood Ave, Holly Hill, FL 32117, hereinafter, called "CONSULTANT" and the **CITY OF HOLLY HILL**, a political subdivision of the State of Florida, whose address is 1065 Ridgewood Ave, Holly Hill, FL 32117, hereinafter called "CITY".

SECTION 1. AGREEMENT. The terms of this Agreement, together with the incorporation of the terms and conditions of the Request for Qualifications (RFQ #18-PW-03), and any exhibits, schedules and attachments hereto, and any and all amendments relating to same, and any and all submittals from CONSULTANT, constitute the entire Agreement between CITY and CONSULTANT. This Agreement is the final, complete and exclusive expression of the terms and conditions of the parties' Agreement. Any and all prior agreements, representations, negotiations, and understandings made by the parties, oral or written, expressed or implied, are hereby superseded and merged herein.

SECTION 2. TERM OF AGREEMENT. The term of this Agreement shall be for a three (3) years and two (2) one (1) year option at the sole discretion of the city.

SECTION 3. COMPENSATION. For Services rendered, the CITY shall pay the CONSULTANT a lump-sum fee, including or excluding reimbursable expenses as mutually agreed upon. Unless otherwise agreed in a Scope of Services, the CONSULTANT will invoice the City monthly based upon the CONSULTANT's estimate of the portion of the total Services actually completed at the time of billing.

SECTION 4. REIMBURSABLE EXPENSES. "Reimbursable Expenses" means the actual, necessary and reasonable expenses incurred directly or indirectly in connection with the Project for: transportation and subsistence incidental thereto for travel; toll telephone calls and facsimiles; reproduction of reports, drawings and specifications, and similar Project-related items; as provided in the City's Purchasing Policy.

SECTION 5. NOTICES. Whenever either party desires to give notice unto the other, it must be given by written notice, sent by registered or certified United States mail, return receipts requested, addressed to the party for whom it is intended at the place last specified. The place for giving of notice shall remain such until it shall have been changed by written notice in compliance with the provisions of this Section. For the present, the parties designate the following as the respective places for giving of notice, to-wit:

For City:
Valerie Manning, City Clerk
City of Holly Hill
1065 Ridgewood Ave.
Holly Hill, FL 32117
(386)248-9441

For Consultant:
Parker Mynchenberg , President (Name, Title)
Parker Mynchenberg & Associates, Inc. Company)
1729 Ridgewood Ave (Address)
Holly Hill, FL 32117 (City, State, Zip)
386-677-6891 (Phone)

Attachment: PM Signed Agreement (2022-R-7 : Approval of Continuing Contract with Selected Engineering Firms)

SECTION 6. RIGHTS AT LAW RETAINED. The rights and remedies of CITY, provided for under this Agreement, are in addition and supplemental to any other rights and remedies provided by law.

SECTION 7. CONTROLLING LAW, VENUE, ATTORNEY'S FEES. This Agreement is to be governed, construed, and interpreted by, through and under the laws of Florida. Venue for any litigation between the parties to this Agreement shall be in the County of Volusia, Florida and any trial shall be non-jury. The prevailing party in any litigation arising from or related to this Agreement shall be reimbursed reasonable attorney fees and costs, including all fees and costs of an appeal.

SECTION 8. MODFICATIONS TO AGREEMENT. This Agreement and any exhibits, amendments and schedules may only be amended, supplemented, modified or canceled by a written instrument duly executed by the parties hereto of equal dignity herewith.

SECTION 9. SEVERABILITY. If, during the term of this Agreement, it is found that a specific clause or condition of this Agreement is illegal under federal or state law, the remainder of the Agreement not affected by such a ruling shall remain in force and effect.

SECTION 10. WAIVER OF JURY TRIAL. THE CITY AND CONSULTANT HAVE SPECIFICALLY WAIVED THE RIGHT TO A JURY TRIAL CONCERNNG ANY DISPUTES WHICH MAY ARISE CONCERNING THIS AGREEMENT.

SECTION 11. NON-WAIVER. No indulgence, waiver, election or non-election by CITY under this Agreement shall affect CONSULTANT's duties and obligations hereunder.

IN WITNESS WHEREOF, the parties hereto have made and executed this Agreement on the date written above for execution by CITY.

WITNESSES:

_____

_____

WITNESSES:

_____

_____

CITY OF HOLLY HILL

_____
Joseph Forte, City Manager

Dated: _____

FIRMS

By: _____
Parker Mynchenberg, President

Dated: 01/17/2022

Approved by the City Commission of the City of Holly Hill at a meeting held on this _____ day of _____, 2022 under Agenda Item No. _____.

Attachment: PM Signed Agreement (2022-R-7 : Approval of Continuing Contract with Selected Engineering Firms)

HOURLY RATE SCHEDULE

Principal Engineer	$200.00/hour
Senior Project Engineer	$175.00/hour
Landscape Architect	$175.00/hour
Project Engineer	$110.00/hour
Senior CAD Technician	$110.00/hour
CAD Technician	$ 90.00/hour
Administrative	$ 45.00/hour

STANDARD RATE FOR MISCELLANEOUS EXPENSES

PRINTS

24"x36"	$1.50/ea.
30"x42"	$2.25/ea.
36"x48"	$3.00/ea.
42"x60"	$4.50/ea.

REPRODUCIBLES

Mylar	$12.00/ea.

COPIES

8.5"x11"	$0.18/ea.
8.5"x14"	$0.25/ea.
11"x17"	$0.30/ea.
Color	$0.99/ea.

OTHER

Mileage	$0.565/mile
Postage	Current Rate
Phone Calls	As Billed

Attachment: PM Signed Agreement (2022-R-7 : Approval of Continuing Contract with Selected Engineering Firms)

katie@parkermynchenberg.com

From: klee@parkermynchenberg.com
Sent: Friday, January 14, 2022 11:32 AM
To: 'katie Hooten'; 'Parker Mynchenberg'
Cc: info@parkermynchenberg.com
Subject: FW: RFQ 22-PW-01 Agreement
Attachments: RFQ 22-PW-01-PA PM.pdf

Parker,

Holly Hill revised their contract agreement, see attached. They would like this new agreement signed and sent back to them for processing.

Thanks,

Kevin Lee, P.E.
Parker Mynchenberg & Associates, Inc.
1729 Ridgewood Avenue
Holly Hill, Florida 32117
Main 386.677.6891 Fax 386.677.2114
Cell 386.566.5183
klee@parkermynchenberg.com

PARKER
MYNCHENBERG
& ASSOCIATES, INC.
PROFESSIONAL ENGINEERS

From: Antoine Khoury <akhoury@hollyhillfl.org>
Sent: Friday, January 14, 2022 9:10 AM
To: klee@parkermynchenberg.com
Cc: Valerie Manning <vmanning@hollyhillfl.org>
Subject: RFQ 22-PW-01 Agreement

Hey Kevin can you please have parker sign the attached final agreement with the rates and send it back to me as reply all.

--
Antoine Khoury PE
City Engineer/Public Works Director
City of Holly Hill
453 LPGA Blvd
Holly Hill, FL 32117
386-248-9493 office
akhoury@hollyhillfl.org

Florida has a very broad Public Records Law. Virtually all written communications to or from State and Local Officials and employees are public records available to the public and media upon request. The City of Holly Hill's policy does not differentiate between personal and business emails. This

Attachment: PM Signed Agreement (2022-R-7 : Approval of Continuing Contract with Selected Engineering Firms)

means email messages, including your e-mail address and any attachments and information we receive online might be disclosed to any person or media making a public records request. E-mail sent on the City system will be considered public and will only be withheld from disclosure if deemed confidential or exempt pursuant to State Law. If you are an individual whose identifying information is exempt under 119.071, Florida Statutes, please so indicate in your email or other communication. If you have any questions about the Florida public records law refer to Chapter 119 Florida Statutes.

Attachment: PM Signed Agreement (2022-R-7 : Approval of Continuing Contract with Selected Engineering Firms)

PROFESSIONAL CONSULTANT SERVICES AGREEMENT
Professional Design/CEI Services For Roadways, Stormwater And Utilities Projects
Request for Qualification (RFQ) #22-PW-01

THIS AGREEMENT is made and entered into this ___ day of January, 2022, by and between Dredging & Marine Consultants, LLC, , duly authorized to conduct business in the State of Florida and whose address is 4643 S. Clyde Morris Blvd. Unit 302, Port Orange, FL 32129 , hereinafter, called "CONSULTANT" and the **CITY OF HOLLY HILL**, a political subdivision of the State of Florida, whose address is 1065 Ridgewood Ave, Holly Hill, FL 32117, hereinafter called "CITY".

SECTION 1. AGREEMENT. The terms of this Agreement, together with the incorporation of the terms and conditions of the Request for Qualifications (RFQ #18-PW-03), and any exhibits, schedules and attachments hereto, and any and all amendments relating to same, and any and all submittals from CONSULTANT, constitute the entire Agreement between CITY and CONSULTANT. This Agreement is the final, complete and exclusive expression of the terms and conditions of the parties' Agreement. Any and all prior agreements, representations, negotiations, and understandings made by the parties, oral or written, expressed or implied, are hereby superseded and merged herein.

SECTION 2. TERM OF AGREEMENT. The term of this Agreement shall be for a three (3) years and two (2) one (1) year option at the sole discretion of the city.

SECTION 3. COMPENSATION. For Services rendered, the CITY shall pay the CONSULTANT a lump-sum fee, including or excluding reimbursable expenses as mutually agreed upon. Unless otherwise agreed in a Scope of Services, the CONSULTANT will invoice the City monthly based upon the CONSULTANT's estimate of the portion of the total Services actually completed at the time of billing.

SECTION 4. REIMBURSABLE EXPENSES. "Reimbursable Expenses" means the actual, necessary and reasonable expenses incurred directly or indirectly in connection with the Project for: transportation and subsistence incidental thereto for travel; toll telephone calls and facsimiles; reproduction of reports, drawings and specifications, and similar Project-related items; as provided in the City's Purchasing Policy.

SECTION 5. NOTICES. Whenever either party desires to give notice unto the other, it must be given by written notice, sent by registered or certified United States mail, return receipts requested, addressed to the party for whom it is intended at the place last specified. The place for giving of notice shall remain such until it shall have been changed by written notice in compliance with the provisions of this Section. For the present, the parties designate the following as the respective places for giving of notice, to-wit:

For City:
Valerie Manning, City Clerk
City of Holly Hill
1065 Ridgewood Ave.
Holly Hill, FL 32117
(386)248-9441

For Consultant:
Shailesh K. Patel, President (Name, Title)
Dredging & Marine Consultants, LLC. (Company)
4643 S. Clyde Morris Blvd. Unit 302 (Address)
Port Orange, FL 32129 (City, State, Zip)
(386) 304-6505 (Phone)

Attachment: DMC Signed Agreement (2022-R-7 : Approval of Continuing Contract with Selected Engineering Firms)

SECTION 6. RIGHTS AT LAW RETAINED. The rights and remedies of CITY, provided for under this Agreement, are in addition and supplemental to any other rights and remedies provided by law.

SECTION 7. CONTROLLING LAW, VENUE, ATTORNEY'S FEES. This Agreement is to be governed, construed, and interpreted by, through and under the laws of Florida. Venue for any litigation between the parties to this Agreement shall be in the County of Volusia, Florida and any trial shall be non-jury. The prevailing party in any litigation arising from or related to this Agreement shall be reimbursed reasonable attorney fees and costs, including all fees and costs of an appeal.

SECTION 8. MODFICATIONS TO AGREEMENT. This Agreement and any exhibits, amendments and schedules may only be amended, supplemented, modified or canceled by a written instrument duly executed by the parties hereto of equal dignity herewith.

SECTION 9. SEVERABILITY. If, during the term of this Agreement, it is found that a specific clause or condition of this Agreement is illegal under federal or state law, the remainder of the Agreement not affected by such a ruling shall remain in force and effect.

SECTION 10. WAIVER OF JURY TRIAL. THE CITY AND CONSULTANT HAVE SPECIFICALLY WAIVED THE RIGHT TO A JURY TRIAL CONCERNNG ANY DISPUTES WHICH MAY ARISE CONCERNING THIS AGREEMENT.

SECTION 11. NON-WAIVER. No indulgence, waiver, election or non-election by CITY under this Agreement shall affect CONSULTANT's duties and obligations hereunder.

IN WITNESS WHEREOF, the parties hereto have made and executed this Agreement on the date written above for execution by CITY.

WITNESSES:

_____

WITNESSES:

_____

_____

CITY OF HOLLY HILL

_____

Joseph Forte, City Manager

Dated: _____

FIRMS

By: _____

Shailesh K. Patel, President

Dated: January 14, 2022

Approved by the City Commission of the City of Holly Hill at a meeting held on this _____ day of _____, 2022 under Agenda Item No. _____.

Attachment: DMC Signed Agreement (2022-R-7 : Approval of Continuing Contract with Selected Engineering Firms)

Dredging & Marine Consultants
DMC
ENGINEERS • SCIENTISTS

CITY OF HOLLY HILL
RFQ No. 22-PW-01 PROFESSIONAL ENGINEERING CONSULTING SERVICES
PROFESSIONAL RATES
Effective January 01, 2022

Project Staff	**Hourly Rate**
Principal Engineer / Scientist	$160.00
Project Manager	$130.00
Senior Project Engineer	$115.00
Engineering Professional	$100.00
Engineering Intern	$ 80.00
Environmental Professional	$ 85.00

Technical Support Staff	
Senior Designer/GIS Technician	$80.00
Designer Technician	$75.00
Grants Coordinator	$65.00
Administrative / Accounting	$50.00

Construction Inspection / Administration	
Project Administrator (CEI)	$ 85.00
Senior Inspector	$ 80.00
Environmental / Construction Inspector	$ 75.00
Field Technician	$ 65.00

Equipment Expenses	
Jon Boat (per day)	$350.00
Turbidity Meter / Standards (per day)	$100.00
Sediment Sampler (per day)	$100.00
Subcontractor Expenses	Cost

4643 S. Clyde Morris Blvd. Unit 302 • Port Orange, FL 32129 • Phone: 386-304-6505 • Fax: 386-304-6506
spatel@dmces.com • www.dmces.com

Attachment: DMC Signed Agreement (2022-R-7 : Approval of Continuing Contract with Selected Engineering Firms)

PROFESSIONAL CONSULTANT SERVICES AGREEMENT
Professional Design/CEI Services For Roadways, Stormwater And Utilities Projects
Request for Qualification (RFQ) #22-PW-01

THIS AGREEMENT is made and entered into this ___ day of January, 2022, by and between Mead and Hunt, Inc. , duly authorized to conduct business in the State of Florida and whose address is 4401 Eastport Parkway, Port Orange, FL 32127 , hereinafter, called "CONSULTANT" and the **CITY OF HOLLY HILL**, a political subdivision of the State of Florida, whose address is 1065 Ridgewood Ave, Holly Hill, FL 32117, hereinafter called "CITY".

SECTION 1. AGREEMENT. The terms of this Agreement, together with the incorporation of the terms and conditions of the Request for Qualifications (RFQ #18-PW-03), and any exhibits, schedules and attachments hereto, and any and all amendments relating to same, and any and all submittals from CONSULTANT, constitute the entire Agreement between CITY and CONSULTANT. This Agreement is the final, complete and exclusive expression of the terms and conditions of the parties' Agreement. Any and all prior agreements, representations, negotiations, and understandings made by the parties, oral or written, expressed or implied, are hereby superseded and merged herein.

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SECTION 3. COMPENSATION. For Services rendered, the CITY shall pay the CONSULTANT a lump-sum fee, including or excluding reimbursable expenses as mutually agreed upon. Unless otherwise agreed in a Scope of Services, the CONSULTANT will invoice the City monthly based upon the CONSULTANT's estimate of the portion of the total Services actually completed at the time of billing.

SECTION 4. REIMBURSABLE EXPENSES. "Reimbursable Expenses" means the actual, necessary and reasonable expenses incurred directly or indirectly in connection with the Project for: transportation and subsistence incidental thereto for travel; toll telephone calls and facsimiles; reproduction of reports, drawings and specifications, and similar Project-related items; as provided in the City's Purchasing Policy.

SECTION 5. NOTICES. Whenever either party desires to give notice unto the other, it must be given by written notice, sent by registered or certified United States mail, return receipts requested, addressed to the party for whom it is intended at the place last specified. The place for giving of notice shall remain such until it shall have been changed by written notice in compliance with the provisions of this Section. For the present, the parties designate the following as the respective places for giving of notice, to-wit:

For City:
Valerie Manning, City Clerk
City of Holly Hill
1065 Ridgewood Ave.
Holly Hill, FL 32117
(386)248-9441

For Consultant:
David King, Vice President (Name, Title)
Mead and Hunt, Inc. Company)
4401 Eastport Parkway (Address)
Port Orange, FL 32127 (City, State, Zip)
386-337-3273 (Phone)

Attachment: MH Signed Agreement (2022-R-7 : Approval of Continuing Contract with Selected Engineering Firms)

SECTION 6. RIGHTS AT LAW RETAINED. The rights and remedies of CITY, provided for under this Agreement, are in addition and supplemental to any other rights and remedies provided by law.

SECTION 7. CONTROLLING LAW, VENUE, ATTORNEY'S FEES. This Agreement is to be governed, construed, and interpreted by, through and under the laws of Florida. Venue for any litigation between the parties to this Agreement shall be in the County of Volusia, Florida and any trial shall be non-jury. The prevailing party in any litigation arising from or related to this Agreement shall be reimbursed reasonable attorney fees and costs, including all fees and costs of an appeal.

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SECTION 11. NON-WAIVER. No indulgence, waiver, election or non-election by CITY under this Agreement shall affect CONSULTANT's duties and obligations hereunder.

IN WITNESS WHEREOF, the parties hereto have made and executed this Agreement on the date written above for execution by CITY.

WITNESSES:

_____

WITNESSES:

Tanneee Rachal

CITY OF HOLLY HILL

_____
Joseph Forte, City Manager

Dated: _____

FIRM: MEAD AND HUNT, INC.

By: _____
David King, PE, Vice President

Dated: January 14, 2022

Approved by the City Commission of the City of Holly Hill at a meeting held on this _____ day of _____, 2022 under Agenda Item No. _____

Attachment: MH Signed Agreement (2022-R-7 : Approval of Continuing Contract with Selected Engineering Firms)

Mead & Hunt Inc.
City of Holly Hill
General Engineering Consultant RFQ #22-PW-01
Hourly Rate Schedule

Contract Position Title	M&H Internal Billing Title	Raw Hourly Labor Rate	Multiplier	Loaded Hourly Labor Rate
Principal Engineer (Project Director)	Senior Associate, Principal	$ 102.98	280.16%	$ 288.51
Project Manager	Senior Client/Project Manager	$ 86.73	280.16%	$ 242.98
Senior Project Engineer	Senior Project Engineer	$ 74.16	280.16%	$ 207.77
Project Engineer	Engineer IV/Senior Engineer	$ 61.46	280.16%	$ 172.19
Senior Designer (CADD)	Senior Engineering Technician	$ 55.62	280.16%	$ 155.82
Project Administrator (CEI)	Engineering Technician IV	$ 46.84	280.16%	$ 131.23
Engineering Intern	Engineer I/II/III	$ 40.65	280.16%	$ 113.89
Designer (CADD)	Engineering Technician III	$ 34.63	280.16%	$ 97.02
GIS Technician	Engineering Technician III	$ 34.63	280.16%	$ 97.02
Senior Inspector (CEI)	Engineering Technician III	$ 33.24	280.16%	$ 93.13
Inspector (CEI)	Engineering Technician II	$ 28.56	280.16%	$ 80.01
Administrative Support	Admin Assistant	$ 25.63	280.16%	$ 71.81

Notes:
1. Audited multiplier per audit for fiscal year ending October 31, 2020 is 268.16%.
2. FY2020 audited rate was lower than previous years due to lower expenses caused by COVID.
3. Raw hourly labor rate range based on current staffing and salaries as of Decmber 13, 2021.
4. Raw hourly rates and multiplier are subject to annual adjustments.
5. This schedule is effective between January 1, 2022 and December 31, 2022.

Expenses:
Out-of-Pocket Direct Job Expenses (subconsultants, reproduction, postage, permit application fees, etc.) = Actual Cost + 5%

Travel:
Company/Personal Car Mileage (work required to be performed out of Volusia County) = IRS rate per mile

Billing:
Invoicing will be on a monthly basis for work performed.

Attachment: MH Signed Agreement (2022-R-7 : Approval of Continuing Contract with Selected Engineering Firms)

PROFESSIONAL CONSULTANT SERVICES AGREEMENT
Professional Design/CEI Services For Roadways, Stormwater And Utilities Projects
Request for Qualification (RFQ) #22-PW-01

THIS AGREEMENT is made and entered into this ___ day of January, 2022, by and between _____ZEV Cohen & Associates_____ , duly authorized to conduct business in the State of Florida and whose address is 300 Interchange Blvd Ste C, Ormond Beach FL 32174 hereinafter, called "CONSULTANT" and the **CITY OF HOLLY HILL**, a political subdivision of the State of Florida, whose address is 1065 Ridgewood Ave, Holly Hill, FL 32117, hereinafter called "CITY".

SECTION 1. AGREEMENT. The terms of this Agreement, together with the incorporation of the terms and conditions of the Request for Qualifications (RFQ #18-PW-03), and any exhibits, schedules and attachments hereto, and any and all amendments relating to same, and any and all submittals from CONSULTANT, constitute the entire Agreement between CITY and CONSULTANT. This Agreement is the final, complete and exclusive expression of the terms and conditions of the parties' Agreement. Any and all prior agreements, representations, negotiations, and understandings made by the parties, oral or written, expressed or implied, are hereby superseded and merged herein.

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SECTION 5. NOTICES. Whenever either party desires to give notice unto the other, it must be given by written notice, sent by registered or certified United States mail, return receipts requested, addressed to the party for whom it is intended at the place last specified. The place for giving of notice shall remain such until it shall have been changed by written notice in compliance with the provisions of this Section. For the present, the parties designate the following as the respective places for giving of notice, to-wit:

For City:
Valerie Manning, City Clerk
City of Holly Hill
1065 Ridgewood Ave.
Holly Hill, FL 32117
(386)248-9441

For Consultant:
Samuel C. Hamilton Jr, P.E. - Sr. V.P. (Name, Title)
ZEV Cohen & Associates, Inc. Company)
300 Interchange Blvd., Suite C (Address)
Ormond Beach, FL 32174 (City, State, Zip)
(386) 677-2482 (Phone)

Attachment: ZEV-Cohen-Signed (2022-R-7 : Approval of Continuing Contract with Selected Engineering Firms)

SECTION 6. RIGHTS AT LAW RETAINED. The rights and remedies of CITY, provided for under this Agreement, are in addition and supplemental to any other rights and remedies provided by law.

SECTION 7. CONTROLLING LAW, VENUE, ATTORNEY'S FEES. This Agreement is to be governed, construed, and interpreted by, through and under the laws of Florida. Venue for any litigation between the parties to this Agreement shall be in the County of Volusia, Florida and any trial shall be non-jury. The prevailing party in any litigation arising from or related to this Agreement shall be reimbursed reasonable attorney fees and costs, including all fees and costs of an appeal.

SECTION 8. MODFICATIONS TO AGREEMENT. This Agreement and any exhibits, amendments and schedules may only be amended, supplemented, modified or canceled by a written instrument duly executed by the parties hereto of equal dignity herewith.

SECTION 9. SEVERABILITY. If, during the term of this Agreement, it is found that a specific clause or condition of this Agreement is illegal under federal or state law, the remainder of the Agreement not affected by such a ruling shall remain in force and effect.

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SECTION 11. NON-WAIVER. No indulgence, waiver, election or non-election by CITY under this Agreement shall affect CONSULTANT's duties and obligations hereunder.

IN WITNESS WHEREOF, the parties hereto have made and executed this Agreement on the date written above for execution by CITY.

WITNESSES:

_____

CITY OF HOLLY HILL

_____

Joseph Forte, City Manager

Dated: _____

WITNESSES:

Tiwana Vargas

_____

FIRMS

By: Zev Cohen Associates, Inc.

Samuel Hagaffel, Sr. Vice-President

Dated: 1/17/22

Approved by the City Commission of the City of Holly Hill at a meeting held on this _____ day of _____, 2022 under Agenda Item No. _____.

Attachment: ZEV-Cohen-Signed (2022-R-7 : Approval of Continuing Contract with Selected Engineering Firms)

Zev Cohen & Associates, Inc.				
City of Holly Hill City of Holly Hill General Engineering Consultant RFQ #22-PW-01				
Billable Hourly Rates				
POSITION CLASSIFICATION	DIRECT LABOR	INDIRECT LABOR AND OVERHEAD	DIRECT LABOR AND OVERHEAD	HOURLY RATE INCLUDING 12% PROFIT
Project Director	$64.90	$79.83	$144.73	$162.25
Project Manager	$57.69	$70.96	$128.65	$144.23
Sr. Project Engineer	$49.04	$60.32	$109.36	$122.60
Project Engineer	$43.27	$53.22	$96.49	$108.18
Engineering Intern	$38.13	$46.90	$85.03	$95.33
Sr. CADD	$28.61	$35.19	$63.80	$71.53
CADD	$24.00	$29.52	$53.52	$60.00
GIS	$24.04	$29.57	$53.61	$60.10
CEI Administrator	$51.68	$63.57	$115.25	$129.20
Sr. CEI	$35.02	$43.07	$78.09	$87.55
CEI	$25.75	$31.67	$57.42	$64.38
Admin	$21.81	$26.83	$48.64	$54.53
Calculation of Multiplier				
Direct Hourly Rate	1.00			
Indirect Labor/Overhead	1.23			
Subtotal	2.23			
x Profit (12%)	0.27			
Total	2.50			

C:\Users\jeckstein\Desktop\Holly Hill Rate Chart 12-21-21.xlsx

HOLLY HILL
FLORIDA

STAFF REPORT
CITY OF HOLLY HILL, FLORIDA

City Commission
Resolution

MEETING DATE: **January 25, 2022**
FROM: **Valerie Manning**
SUBJECT: **A Resolution of the City of Holly Hill, Florida, Authorizing a Piggyback Contract for the Purchase of a P25 Radio Communications Equipment Using Volusia County Radio Purchasing Contract; Providing for Severability; and Providing for an Effective Date.**
NUMBER: **2022-R-8**
APPLICANT:
PLANNER:

DISCUSSION:

This Resolution authorizes the City Manager to enter into a piggyback agreement for the purchase of a portable radios, mobile radios and related accessories approved in the 2021/2022 budget, under the Volusia County Contract 19-P153JRD. This contract extends and guarantees to any and all units of local governments / political subdivisions.

The goal of the city is to use this contract to purchase communications equipment under the contract terms and conditions. The Volusia County Radio Contract pricing represents an aggregate discount of over 50% off list prices.

Items requested to be purchased this year include:

Various radios (department specific) and related equipment. The total purchase for the radios is $247,995.52. A detailed list is provided in attachment #2.

Funds are available in Account No. 8110-580.52-64 in all major operating funds 001, 400, 460, 495

Current City of Holly Hill Purchasing Manual

Policy 2.39 Other Government Entities' Contracts.

The City may utilize (piggy-back) any other government entity's open contract that have been competitively bid and awarded to the low responsive, responsible bidder meeting the specifications, in accordance with City Purchasing regulations. The City may also piggyback off U.S. General Services Administration, GSA Contracts. When another entity's contracts is the be utilized, a copy of that contract shall be forwarded to the Finance Department for review and evaluation to determine if it meets the City's requirement regarding competitive bidding and award.

Chapter 287, Florida Statutes, grants the authority to piggyback the purchase of goods and services as a form of intergovernmental cooperative purchasing in which a public purchaser requests competitive sealed bids, enters into a contract, and arranges, as part of the contract, for other public purchasing units to purchase from the selected vendor under the same terms and conditions as itself in order to take advantage of the better pricing that large purchasers are able to obtain in order to reduce administrative time and costs involved in the procurement process (i.e., cost of preparing bid specifications, advertising, etc.).

FISCAL ANALYSIS:

All purchases under this contract will be completed according to the FY 21/22 budget under account number 8110-580.52-64 in all major operating funds 001, 400, 460, 495

STAFF RECOMMENDATION:

That the City Commission approve the Resolution as submitted by staff.

COMMISSION GOAL:

Goal #1: Develop and maintain a sound and sustainable financial plan for the city that establishes sufficient reserves for all funds, ensures (whenever possible) that user fees pay for services rendered, provides a realistic capital improvement program, and encourages public/private sector partnerships and intergovernmental partnerships.

Goal #2: Enhance City aesthetics through beautification and maintenance of city property and public rights of way, consistent enforcement of zoning and property maintenance codes, and development of reasonable design standards and a corresponding process which is applicable to all new developments and business improvements in the city.

MOTION:

APPROVING THE PIGGY-BACK AGREEMENT AND AUTHORIZE THE CITY MANAGER TO EXECUTE THE PURCHASES.

ATTACHMENTS:

- A-Comm International Quote (PDF)
- B-Volusia County Radio Contract (PDF)
- C-Volusia County Radio Contract - Amendment No 2 - FULLY EXECUTED (PDF)
- D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (PDF)
- 01._19-P-153JRD,_P25_Compliant_Radio_System (PDF)
- 02._Exhibit_A_-_Technical_Specifications(PDF)
- 05._Exhibit_A.3_-_County_Computing_Security_Proced (PDF)
- 06._Exhibit_A.4_-_Technical_Infrastructure_Standar (PDF)
- 09._Exhibit_C.1,_Insurance_Requirements_-_Equipmen (PDF)
- 12._Addendum_1 (PDF)

- 13._Addendum_2 (PDF)
- 15._Addendum_3 (PDF)
- 19._Addendum_4 (PDF)
- 20._Exhibit_A_-_Technical_Specifications_-_Revisio (PDF)
- 21._Addendum_5 (PDF)
- 22._Addendum_6 (PDF)
- 25._19-P-153JRD,_P25_Complaint_Radio_System_-_Revi (PDF)
- 26._Addendum_7 (PDF)
- 27._Addendum_8 (PDF)
- 28._Addendum_9 (PDF)
- 29._Addendum_10 (PDF)
- 31._19-P-153JRD,_Recommendation_of_Award (PDF)

Resolution No. 2022-8

A RESOLUTION OF THE CITY OF HOLLY HILL, FLORIDA, AUTHORIZING A PIGGYBACK CONTRACT FOR THE PURCHASE OF A P25 RADIO COMMUNICATIONS EQUIPMENT USING VOLUSIA COUNTY RADIO PURCHASING CONTRACT; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

A RESOLUTION OF THE CITY OF HOLLY HILL, FLORIDA, AUTHORIZING A PIGGYBACK CONTRACT FOR THE PURCHASE OF A P25 RADIO COMMUNICATIONS EQUIPMENT USING VOLUSIA COUNTY RADIO PURCHASING CONTRACT; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City of Holly Hill desires to purchase a new portable radios, mobile radios and accessories under the Volusia County Radio Purchase contract, under the same terms and applicable conditions as that agreement; and

WHEREAS, Chapter 287, Florida Statutes, grants the authority to piggyback the purchase of goods and services as a form inter-governmental cooperative purchasing in which a public purchaser requests competitive sealed bids, enters into a contract, and arranges, as part of the contract, for other public purchasing units to purchase from the selected vendor under the same terms and conditions as itself in order to take advantage of the better pricing that large purchasers are able to obtain in order to reduce administrative time and costs involved in the procurement process (i.e., cost of preparing bid specifications, advertising, etc.); and

WHEREAS, pursuant to the City's purchasing policy, "piggyback" contracts are allowed for existing government contracts; and

WHEREAS, the City Commission of the City now desires to (i) authorize and approve the form of the contract by Volusia County, any exhibits attached thereto, and any other related documents and, (ii) the execution and delivery of the documents and (iii) provide additional limited general authority; and

WHEREAS, the City has determined that in this circumstance, piggybacking onto an agreement entered into by Volusia County, is the most economically advantageous way to procure these goods and services; and

WHEREAS, the City has performed all acts, conditions, and things relating to the acquisition of portable radios, mobile radios and equipment as are required by the Constitution and Laws of the State of Florida, and the Charter and Code of Ordinances of the City.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF HOLLY HILL, FLORIDA:

SECTION 1: Pursuant to Article VIII, Section 2, of the Constitution of the State of Florida and Chapter 166, Florida Statutes, (collectively, the "Act")., as well as the City Charter and Code of Ordinances.

SECTION 2. DEFINITIONS. As used herein:

(a). "City" means the City of Holly Hill, Florida.

(b). "City Manager" means the City Manager of the City or designee.

(c). "Clerk" means the Clerk of the City or designee.

(d). "Finance Director" means the Finance Director of the City.

(e). "Mayor" means the Mayor of the City or in the Mayor's absence or unavailability the Vice-Mayor.

(f). "City Attorney" means the City Attorney of the City or designee.

SECTION 3. FINDINGS AND AWARDS.

(a). The findings and declarations of the City contained in the above WHEREAS clauses are hereby incorporated as a part of this Resolution.

(b). It is in the best interest of City and its inhabitants to contract with Communications International to purchase portable radios, mobile radios and equipment.

(c). It is hereby ascertained, determined and declared that in light of prevailing and anticipated market conditions, it is in the best interests of the City to enter into a contract with Communications International for the purchase of radios and equipment.

SECTION 4. AUTHORIZATION OF CONTRACT. The forms of the scope of services and contract documents attached hereto, Exhibit "A", or as may be required to be modified are hereby approved. The Mayor is hereby authorized to execute said agreement for vehicle and equipment purchase, in substantially the forms attached hereto.

SECTION 5. ADDITIONAL AUTHORIZATIONS CONCERNING THE SCOPE OF SERVICES AND CONTRACT. The City Manager, or designee(s), are hereby charged with the responsibility for implementing the agreement for purchase of vehicles and equipment.

SECTION 6. SEVERABILITY. If any section or portion of a section of this Resolution proves to be invalid, unlawful, or unconstitutional, it shall not be held to invalidate or impair the validity, force, or effect of any other section or part of this Resolution.

SECTION 7. EFFECTIVE DATE. This Resolution shall take effect immediately upon its adoption.

APPROVED AND AUTHENTICATED on this 25th day of JANUARY, 2022.

COMMUNICATIONS INTERNATIONAL
An Employee Owned Company

Quotation

Communications International, Inc.
4450 US Highway 1
VERO BEACH, FL 32967

Page	1 of 5
Quotation ID	QO0015433
Date	12/21/2021
Expiration date	06/30/2022
Terms	N30
Requested By	Chief Bland
Salesperson	Garin L Grayson
Phone	(386) 947-9999
E-mail	ggrayson@ask4ci.com

Bill to

Holly Hill, City of
Accounts Payable
1065 Ridgewood Ave
HOLLY HILL, FL 32117

Delivery address

Holly Hill, City of
Accounts Payable
1065 Ridgewood Ave
HOLLY HILL, FL 32117

Citywide Radio Replacement

All radios are priced as a package per the Volusia County Radio Contract. Pricing includes zero dollar features, accessories, programming and standard labor. Pricing valid through 06/30/2022

Item	Description	Quantity	Price	Line Discount	Net Price	Extended Price
XS-PFS1M	PORTABLE,XL-185P 7/800MHZ, FKP,BLK,US (Police)	26.00	2,426.24	0%	2,426.24	63,082.24
XS-PFS1Y	PORTABLE,XL-185P 7/800MHZ,FKP,YEL,US (Fire)	8.00	2,426.24	0%	2,426.24	19,409.92
XS-Y3EWP	WARRANTY, EXTENDED 3 YR, PORTABLE	34.00	0.00	0%	0.00	0.00
XS-PL5K	FEATURE,PROFILE OTAP OVER-THE-AIR PRGM	34.00	0.00	0%	0.00	0.00
XS-PL8N	Feature, In-Band GPS	34.00	0.00	0%	0.00	0.00
XS-FW2X	OPERATION, LOAD NIFOG PERSONALITY	34.00	0.00	0%	0.00	0.00
XS-PL5L	Feature, P25 OTAR (Over-the-air-rekeying)	34.00	0.00	0%	0.00	0.00
XS-PL4F	Feature, P25 Phase 2 TDMA	34.00	0.00	0%	0.00	0.00
XS-PL8Y	Feature, Encryption Lite	34.00	0.00	0%	0.00	0.00
XS-PKG8F	FEATURE,256-AES,64-DES ENCRYPTION	34.00	0.00	0%	0.00	0.00
XS-PKGPT	FEATURE PACKAGE,P25 TRUNKING	34.00	0.00	0%	0.00	0.00
XS-PKGED	FEATURE PACKAGE,EDACS TRUNKING	34.00	0.00	0%	0.00	0.00
XS-PL4L	FEATURE, SINGLE BAND 7/800	34.00	0.00	0%	0.00	0.00
XS-PA4K	BATTERY,LI-ION,HI-CAPACITY,4800MAH	68.00	0.00	0%	0.00	0.00

Attachment: A-Comm International Quote (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

COMMUNICATIONS INTERNATIONAL
An Employee Owned Company

Quotation

Quotation ID QO0015433
Date 12/21/2021
Expiration date 06/30/2022

Item	Description	Quantity	Price	Line Discount	Net Price	Extended Price
XS-NC8D	Antenna, Whip, 762-870Mhz, 1/2 Wave	34.00	0.00	0%	0.00	0.00
XS-NC8D	Antenna, Whip, 762-870Mhz, 1/2 Wave	30.00	45.00	28%	32.40	972.00
XS-AE2V	SPEAKER MIC, REVO NC2, C1D2	34.00	0.00	0%	0.00	0.00
XS-AE2W	SPEAKER MIC, 500F, XL-185P	10.00	399.00	28%	287.28	2,872.80
XS-HC3L	BELT CLIP,METAL	34.00	0.00	0%	0.00	0.00
XS-CH4X	CHARGER,1-BAY,XL-185P	34.00	0.00	0%	0.00	0.00
XS-CH5A	CHARGER, 6-BAY, XL-185P	3.00	895.00	28%	644.40	1,933.20
E1-10009	EARPHONE 2.5, R/A 30" COILED CORD	30.00	32.92	15%	27.98	839.46
XN-PF78M	PORTABLE,XL-95P,7/800MHZ,BLK (Public Works)	39.00	1,117.83	0%	1,117.83	43,595.37
XN-Y3EWP	SERVICE ASSIST, EXT WARRANTY 3YR, XL95P	39.00	0.00	0%	0.00	0.00
XN-FW2X	OPERATION,LOAD NIFOG PERSONALITY	39.00	0.00	0%	0.00	0.00
XN-PL5K	FEATURE,PROFILE OTAP OVER-THE-AIR PRGM	39.00	0.00	0%	0.00	0.00
XN-PL4F	FEATURE,P25 PHASE 2 TDMA	39.00	0.00	0%	0.00	0.00
XN-PL8Y	FEATURE, ENCRYPTION LITE	39.00	0.00	0%	0.00	0.00
XN-PL9E	FEATURE,SINGLE-KEY AES ENCRYPTION	39.00	0.00	0%	0.00	0.00
XN-PL4U	FEATURE,SINGLE-KEY DES ENCRYPTION	39.00	0.00	0%	0.00	0.00
XN-P25ED	FEATURE PACKAGE, P25 AND EDACS TRUNKING	39.00	0.00	0%	0.00	0.00
XN-PA3R	BATTERY,LI-ION,3100MAH	78.00	0.00	0%	0.00	0.00
XN-NC8D	ANTENNA,WHIP,1/2 WAVE,762-870MHZ	39.00	0.00	0%	0.00	0.00
XN-AE9D	SPEAKER MIC	39.00	0.00	0%	0.00	0.00
XN-HC2G	BELT CLIP,STANDARD,XL-95	39.00	0.00	0%	0.00	0.00

Attachment: A-Comm International Quote (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

COMMUNICATIONS INTERNATIONAL
An Employee Owned Company

Quotation

Quotation ID QO0015433
Date 12/21/2021
Expiration date 06/30/2022

Item	Description	Quantity	Price	Line Discount	Net Price	Extended Price
XN-CH5X	CHARGER,1-BAY,TRI-CHEMISTRY	39.00	0.00	0%	0.00	0.00
XT-MPS1M	MOBILE, XL-185M, SINGLE BAND (Police and Fire)	27.00	3,446.80	0%	3,446.80	93,063.60
XT-Y3EWP	SERVICE ASSIST, EXT WARRANTY 3YR, XL185M	27.00	0.00	0%	0.00	0.00
XT-PL8Y	FEATURE, ENCRYPTION LITE	27.00	0.00	0%	0.00	0.00
XT-PL4F	FEATURE, PHASE 2 TDMA	27.00	0.00	0%	0.00	0.00
XT-PL5K	FEATURE P25 OTAP PROFILE	27.00	0.00	0%	0.00	0.00
XT-PL5L	FEATURE, OTAR	27.00	0.00	0%	0.00	0.00
XT-PKG8F	FEATURE, 256-AES, 64-DES ENCRYPTION	27.00	0.00	0%	0.00	0.00
XT-PL4L	FEATURE, SINGLE BAND, 7/800	27.00	0.00	0%	0.00	0.00
XT-PKGPT	FEATURE PACKAGE, P25 TRUNKING	27.00	0.00	0%	0.00	0.00
XT-PKGED	FEATURE PACKAGE, EDACS TRUNKING	27.00	0.00	0%	0.00	0.00
XT-MA4A	KIT, MOUNTING XL-MOBILE UNIVERSAL	27.00	0.00	0%	0.00	0.00
XT-MC6A	MICROPHONE, XL, STANDARD MOBILE	27.00	0.00	0%	0.00	0.00
XT-AN8D	ANTENNA, ELEMENT, 700/800 3DB	27.00	0.00	0%	0.00	0.00
XT-AN6U	ANTENNA, BASE, STD ROOF MOUNT LOW LOSS	27.00	0.00	0%	0.00	0.00
XT-CP6A	CONTROL UNIT, XL-CH	27.00	0.00	0%	0.00	0.00
	Intercom Interface Cable Fire Engine	2.00	195.00	0%	195.00	390.00
	Install Rear Mount (Fire Truck adder)	1.00	495.00	0%	495.00	495.00
	Additional labor to install new radios and interface existing intercom systems in 2 fire engines.					
MAMW-SDMXX	MOBILE,XG-75M/M7300,764-870MHZ,HALF DPLX (Base radios)	2.00	2,487.04	0%	2,487.04	4,974.08
MW-Y3EWM	WARRANTY, EXTENDED 3 YR, MOBILE (XG-75M)	2.00	0.00	0%	0.00	0.00
MAMW-NPL3R	Feature, Max(1024+) Sys/Grp Option	2.00	0.00	0%	0.00	0.00

Attachment: A-Comm International Quote (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

COMMUNICATIONS INTERNATIONAL
An Employee Owned Company

Quotation

Quotation ID QO0015433
Date 12/21/2021
Expiration date 06/30/2022

Item	Description	Quantity	Price	Line Discount	Net Price	Extended Price
MAMW-NPL5K	Feature,ProFile Over-the-Air-Programming	2.00	0.00	0%	0.00	0.00
MAMW-NPL5L	Feature,Over-the-Air-Rekeying	2.00	0.00	0%	0.00	0.00
MW-PL8Y	FEATURE, ENCRYPTION LITE	2.00	0.00	0%	0.00	0.00
MAMW-NPL7P	Feature, P25 Data	2.00	0.00	0%	0.00	0.00
MW-PL4F	Feature, P25 Phase 2, TDMA	2.00	0.00	0%	0.00	0.00
MW-PL4U	Feature, Single-Key DES Encryption	2.00	0.00	0%	0.00	0.00
MAMW-NPL7M	Feature,256-AES,ECP Encryption	2.00	0.00	0%	0.00	0.00
MAMW-PKGED	Feature Package, EDACS Trunking Operation	2.00	0.00	0%	0.00	0.00
MAMW-PKGPT	Feature, P25 Trunking	2.00	0.00	0%	0.00	0.00
MAMW-NCP9H	Control Unit, CH-721 System, Front Mount	2.00	0.00	0%	0.00	0.00
MAMW-NZN6W	Accessory Kit, M7300 Front Mount	2.00	0.00	0%	0.00	0.00
MAMW-ZN9F	Microphone,Desktop	2.00	0.00	0%	0.00	0.00
SEC1223XG	Samlex America - Base Station Power Supply and Cabinet	2.00	0.00	0%	0.00	0.00
DM-M78B	MOBILE,XG-25M,700/800 MHZ,35W (Public Works Vehicle)	5.00	1,464.63	0%	1,464.63	7,323.15
DM-M78B	MOBILE,XG-25M,700/800 MHZ,35W (Public Works Base)	3.00	1,729.90	0%	1,729.90	5,189.70
DM-Y3EWM	WARRANTY, EXTENDED 3 YR, MOBILE (XG-25M)	8.00	0.00	0%	0.00	0.00
DM-PL5K	FEATURE,PROFILE OTAP	8.00	0.00	0%	0.00	0.00
DM-PL7P	Feature,P25 Data	3.00	0.00	0%	0.00	0.00
	Only base radio packages are featured with P25 Data					
DM-PL7Z	Feature,512 Systems/Groups	8.00	0.00	0%	0.00	0.00
DM-PL4F	Feature, P25 Phase 2, TDMA	8.00	0.00	0%	0.00	0.00

Attachment: A-Comm International Quote (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

COMMUNICATIONS INTERNATIONAL
An Employee Owned Company

Quotation

Page	5 of 5
Quotation ID	QO0015433
Date	12/21/2021
Expiration date	06/30/2022

Item	Description	Quantity	Price	Line Discount	Net Price	Extended Price
DM-PL8Y	FEATURE, ENCRYPTION LITE	8.00	0.00	0%	0.00	0.00
DM-PL9E	FEATURE, SINGLE-KEY AES ENCRYPTION	8.00	0.00	0%	0.00	0.00
DM-PL4U	Feature, Single-Key DES Encryption	8.00	0.00	0%	0.00	0.00
DM-PKGPT	Feature Package,P25 Trunking	8.00	0.00	0%	0.00	0.00
DM-PKGED	Feature Package, EDACS Trunking	8.00	0.00	0%	0.00	0.00
DM-ZN9X	Kit,Accessories,XG-25M	8.00	0.00	0%	0.00	0.00
DM-MC9U	MICROPHONE,DESKTOP,W/XG25M ADAPTER CABLE	3.00	0.00	0%	0.00	0.00
DM-MC9R	Microphone,Standard,XG-25M	5.00	0.00	0%	0.00	0.00
AN-225001-001	Antenna Element, 700/800 3dB	5.00	0.00	0%	0.00	0.00
AN-125001-001	Antenna Base, Standard Roof Mount	5.00	0.00	0%	0.00	0.00
SEC1223XG	Samlex America - Base Station Power Supply and Cabinet	3.00	0.00	0%	0.00	0.00
UHW505	Under-Helmet Wireless Headset	4.00	795.00	0%	795.00	3,180.00
	Shipping	1.00	675.00	0%	675.00	675.00

Pre-tax Total $247,995.52

This quotation does not include tax
Applicable taxes will be calculated during invoicing

Not an Invoice – Do Not Pay

Order Acceptance - Please sign below

Signature _____

Printed name _____

Date _____

By signing this quotation and/or submitting a purchase order pursuant to this quotation you acknowledge that you have read and agree to be bound by Communications International, Inc.'s terms and conditions of sale, service, and technical support. Orders may be subject to shipping & handling charges. All warranties are manufacturer's warranties. Terms and Conditions: www.ask4ci.com/termsandconditions

Attachment: A-Comm International Quote (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

Attachment: B-Volusia County Radio Contract (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County

Volusia County
FLORIDA

AGREEMENT FOR
P25 COMPLIANT RADIO SYSTEM,
INFRASTRUCTURE, AND MAINTENANCE

19-P-153JRD

Between

COUNTY OF VOLUSIA

And

COMMUNICATIONS INTERNATIONAL, INC.
4450 US HIGHWAY 1
VERO BEACH, FL 3296

County of Volusia
Purchasing & Contracts Division
123 West Indiana Avenue, Suite 302
DeLand, Florida 32720-4608
386-736-5935

AGREEMENT FOR P25 COMPLIANT RADIO SYSTEM

This Agreement is hereby made and entered by and between **Communications International, Inc.**, duly authorized to conduct business in the State of Florida, whose principal place of business is located at 4450 U.S. Highway 1, Vero Beach, Florida 32967 (hereinafter the "**Contractor**"); and **County of Volusia**, a body corporate and politic and a subdivision of the State of Florida, whose address is County of Volusia, 123 West Indiana Avenue, DeLand, FL 32720 (hereinafter "**County**") (hereinafter "Agreement).

RECITALS

WHEREAS, the County has issued Request for Proposal 19-P-153JRD (the "RFP") seeking a qualified firm to provide the County a modern P25 Phase 2 Compliant Radio System, Infrastructure, and Maintenance (the "System") inclusive of software, hardware, technical expertise, and implementation services and for the continuing maintenance and support of the System; and,

WHEREAS, the County has determined that the Contractor is fully qualified to render the required service; and,

WHEREAS, the Contractor represents that it can provide and support the requested P25 Compliant Radio System; all as provided in this Agreement; and,

WHEREAS, it has been determined that the execution of this Agreement is beneficial to the people of the County of Volusia, Florida.

NOW, THEREFORE, in consideration of the foregoing recitals which are incorporated herein by reference, and other specific consideration set forth in this Agreement, the receipt and sufficiency of which is acknowledged by the Contractor and County, the parties agree and stipulate as follows:

1 DEFINITIONS

For this Agreement and any incorporated exhibits, certain terms, phrases, words and their respective derivations shall have the meaning set forth and defined in this Section 1 and shall be applicable in both. Definition of terms in the Agreement shall first be governed by this Agreement, second by the incorporated Technical Specifications (Exhibit A.1), third by the incorporated Communications International Statement of Work (Exhibit A.2), fourth by the incorporated L3 Harris Software License Agreement (Exhibit G), fifth by the incorporated L3 Harris Software Services Agreement (Exhibit H), sixth by the incorporated Insurance Requirements (Exhibits C.1 – C.3), seventh by the incorporated County Computing Security Procedures (Exhibit F), eighth by the incorporated FBI CJIS Security Policy, Addendum, and Acknowledgement Forms (Exhibit D), ninth by the incorporated Project Plan (Exhibit A.4), tenth by the incorporated Grounding Plan (Exhibit A.3), eleventh by the incorporated Volusia County Tower Sites Proposed P25 System Antenna Installations (Exhibit A.5), twelfth by the incorporated Pricing documents (Exhibits B.1 –

Attachment: B-Volusia County Radio Contract (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County

B.5), thirteenth by the incorporated L3 Harris Commitment Letter (Exhibit E), and fourteenth by any remaining exhibits. In the event of any conflict among the foregoing, the conflict shall be resolved in the order of priority set forth in the preceding sentence. Words and abbreviations which have well-known technical or trade meanings are used in accordance with such recognized meanings.

1.1 **Acceptance:** A signed document indicating that a Deliverable meets the Acceptance Criteria specified in the Contract, or deemed acceptance.

1.2 **Acceptance Criteria:** Measure by which a Deliverable or set of Deliverables will be approved.

1.3 **Affidavit:** The instrument which is to be signed by the Contractor and submitted to the County upon the County's request through the Project Manager, upon completion of that job, showing that all bills have been paid. It shall also mean such instrument that may be requested by the County incidental to partial payments.

1.4 **Agreement:** This Agreement, including its articles, exhibits, addendums, and attachments, between the County and the Contractor.

1.5 **Amendment:** An amendment to this Agreement in writing, approved by the Director of Purchasing and Contracts, and signed by the County and the Contractor authorizing a modification or revision to one or more terms or conditions of this Agreement.

1.6 **Beneficial Use:** means when the County begins to utilize the System or a subsystem for operational purposes (excluding training or testing).

1.7 **Calendar Day:** Any day, including Saturdays, Sundays, and holidays, regardless of weather conditions.

1.8 **Confidential Information**: Confidential information shall mean "proprietary software" and "trade secrets" as defined in and exempt from disclosure pursuant to Florida Statute, Chapter 119 and Article 1, Section 24 of the Florida Constitution ("Florida Public Records Law"), Florida Statute 812 and Chapter 688, Florida Statutes (Florida Uniform Trade Secret Act). Information disclosed by the Contractor to the County will be subject to the Florida Public Records Law.

1.9 **Compensation**: The amount paid by the County to Contractor for services (including all services, labor, hardware, software, materials, supplies, training, profit, overhead, costs, more particularly described in Exhibit B.1.)

1.10 **Contract Administrator:** The Director of Purchasing and Contracts or his/her designee responsible for addressing any concerns within this Agreement.

1.11 **Contract Documents**: Contract documents shall include but are not limited to the following: (1) This Agreement, including **Exhibits "A" – "H"** which represents the

Attachment: B-Volusia County Radio Contract (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County

entire Agreement between the County and Contractor and supersedes all prior negotiations, representations or agreements; (2) Certificates of Insurance; and (3) any mutually agreed upon and signed modifications or amendments to this Agreement issued after execution of this Agreement.

1.11.1 This Contract shall not be superseded by any provisions of the specifications under the Scope of Work and may be amended only by written instrument signed by both the County and Contractor.

1.11.2 The Contract Documents do not include proposal solicitation documents such as the Request for Proposal 19-P-153JRD, advertisements or addenda, the instructions to respondents or clarifications issued during the selection of Contractor, sample forms, the Contractor's proposal or portions of it, or any other documents, unless specifically enumerated and incorporated in this Agreement.

1.11.3 The Contract Documents shall be signed in duplicate by the County and Contractor.

1.12 **Contractor:** Shall mean "Communications International, Inc." Notwithstanding the foregoing, insofar as this Agreement contemplates or describes the rendition of P25 Services.

1.13 **County:** Shall mean the County of Volusia (a body corporate and politic and a subdivision of the State of Florida) including its districts, authorities, separate units of government established by law, ordinance or resolution, partners, elected and non-elected officials, employees, agents, volunteers, and any party with whom the County has agreed by contract to provide additional insured status.

1.14 **County Project Manager:** The person designated by the County to review, approve and make decisions regarding the Scope of Work in this Agreement.

1.15 **Customer Engineer:** A field support engineer certified by the Contractor to work on L3 Harris EDACS, dispatch consoles, VIDA or P25 equipment and infrastructure, Exacom logging recorders, or MNI microwave.

1.16 Critical Failure:

1.16.1 The following is a listing of items that define a Critical failure:

1.16.1.1 System in failsoft
1.16.1.2 System in "site trunking"
1.16.1.3 Groups of mobiles or portables receiving a denial or busy tone
1.16.1.4 More than one dispatch console operator position off the air
1.16.1.5 The loss of voice communications

Attachment: B-Volusia County Radio Contract (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County

1.16.1.6 The loss of data communications
1.16.1.7 Failure of the trunked System switch/controller
1.16.1.8 Greater than two trunked repeater channel resources down
1.16.1.9 A simulcast failure affecting one or more sites or more than two channels
1.16.1.10 Loss or failure of System configuration database
1.16.1.11 Loss or failure of user database
1.16.1.12 Failures that prevent acceptance per test plan from being achieved

1.16.2 Maintenance response times shall be governed by Section 5.8.13 - Severity level Definitions and Response Time Requirements as specified in Exhibit A.2.

1.17 **Day:** The word "day" means each calendar day unless otherwise specifically designated.

1.18 **Deliverable(s):** The result(s) or end products or services of that meet the requirements and functional parameters articulated in the Scope of Work for this Agreement including but not limited to: services, reports, written documentation, training, systems or processes

1.19 **Demand Services:** Services that are requested of the Contractor which are not included in the monthly pricing for Maintenance Services.

1.20 **Director:** The Director is the Director of Purchasing and Contracts for the County of Volusia.

1.21 **Drawings/Plans:** The official approved drawings or plans or exact reproductions thereof, which have been prepared, signed, sealed and dated by the contractor, which shows the location, character, dimensions and details of the work to be done and which are considered part of the Construct Documents.

1.22 **Effective Date:** The date that this Contract, including any Addendum, Amendment, Modification or exhibits attached thereto is fully executed by Contractor and the County.

1.23 **Equipment:** All of the equipment included in Scope of Work and Exhibit H – Firmware and Software Maintenance Services Specifications.

1.24 **Field Order:** A written instrument issued by the Contractor to the County which clarifies or interprets the drawings and technical specifications, and/or orders minor variations in the work, as opposed to a change in the work, and which does not involve an adjustment in contract price or time.

Attachment: B-Volusia County Radio Contract (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County

1.25 Fixed Equipment: Equipment located at a radio site or at a County location and as described as fixed equipment in the Scope of Work and included in Exhibit H – Firmware and Software Maintenance Services Specifications.

1.26 Infrastructure: Infrastructure refers to system equipment (other than subscriber radio handsets) and tower including, but not limited to, tower structure, tower site equipment, dispatch console equipment, microwave backhaul equipment, logging recorder, antenna systems, dehydrators, battery systems, fences, network equipment, and base stations.

1.27 Inspector or Field Representative: County Employee or an authorized representative of the Contractor assigned to make inspections of the work performed and materials furnished pursuant to this Contract.

1.28 Key Personnel: The Contractor's personnel, designated by the Contractor, who are responsible for the Contractor's day-to-day Project operations as described in the Contractor's Proposal.

1.29 Maintenance Services: Maintenance Services are those services detailed in Section 5.8 of Exhibit A.2 – Ci Statement of Work.

1.30 Maintenance Statement of Work: The specifications and requirements governing the work or services to be performed as Maintenance Services, defined therein, as shown in Exhibit A.2 – Ci Statement of Work, Section 5.8 including responsibility for performing and complying with all incidental matters pertaining thereto.

1.31 Milestone: A significant event, task, or deliverable that occurs during the project, not all of which are, nor will be, designated on the milestone payment schedule.

1.32 Mobile Equipment: All vehicular mounted radios and vehicular repeaters as specifically described as mobile equipment in the Scope of Work and included in Exhibit H – Firmware and Software Maintenance Services Specifications.

1.33 Modification: A written amendment to the Contract Documents approved by the County which includes but is not limited to the following:

1.33.1 Change Order: A written change or modification to this Agreement approved by the County Project Manager and Contract Administrator to the Contractor signed by the County and the Contractor authorizing an addition, deletion, or revision in the Scope of Work (SOW), or an adjustment in the Agreement price or time, without change to any other terms or conditions of the Agreement.

1.33.2 Equipment Update: Addition or deletion of any Equipment listed in the

Attachment: B-Volusia County Radio Contract (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County

Maintenance Item Inventory and required to be maintained as provided herein.

1.33.3 Field Order: A written clarification, interpretation, minor change or alteration issued by the Contractor.

1.33.4 Addenda: A document written by the Contractor and approved by the County that is added to the original Contract Documents to clarify, revise, add to, or delete from the original Contract Documents or previous addenda. The document includes a written clarification or interpretation prepared by the County or Contractor.

1.34 Notice to Proceed: The official letter from the County to the Contractor establishing a date on which the Work in the Work Order shall commence.

1.35 Phase 2 Compliant Radio System: 800 MHz radio system which meets the Project 25 standards (Telecommunications Industry Association TIA-102) as fully described in Exhibit A.1 – Technical Specifications.

1.36 Portable Equipment: All personal portable radios as specifically described as portable equipment in the Scope of Work and included in Exhibit H – Firmware and Software Maintenance Services Specifications.

1.37 Preliminary Project Plan – The initially developed project plan as proposed and included in Exhibit A.2 – Communications International Statement of Work, Section 9.6 which shall be further refined as the Project Plan upon mutual agreement.

1.38 Proposal: The document submitted by the Contractor in response to a formal solicitation (RFP No. 19-P-153JRD) used to determine if the Contractor is highly qualified and committed to providing a quality solution to meet the County's needs and requirements.

1.39 Scope of Work: The services or work, herein defined in this Agreement under the Scope of Work (e.g., Exhibits A.1 – A.6) that is agreed to by the parties in writing, which includes responsibility for performing and complying with all incidental matters pertaining thereto.

1.40 Services: Those services defined in the Scope of Work to be performed by the Contractor pursuant to this Agreement and its attached exhibits, including: the work, duties and obligations to be carried out and performed by the Contractor under the Agreement and Exhibits, which are attached hereto and made a part of this Agreement, and any other obligations, work, services, duties and responsibilities necessary to the successful completion of the Scope of Work, including the furnishing of all labor, materials, software, equipment and other incidentals, if required.

1.41 Shop Drawings: All diagrams, illustrations, brochures, schedules, and/or other data which are prepared by contractor, a subcontractor, manufacturer, supplier,

Attachment: B-Volusia County Radio Contract (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County

distributor, or other person on behalf of the contractor, and which illustrate the equipment, material, or some portion of the work.

1.42 **State**: State of Florida.

1.43 **Subcontractor**: A person or entity other than a materialman or laborer who enters into an agreement with the Contractor for the performance of any part of the Services.

1.44 **Term:** Shall have the definition set forth in Section 18 of this Agreement.

1.45 **VIDA:** L3 Harris's voice, interoperability, data, and access services platform.

1.46 **Volusia County Radio Users:** Volusia County Radio Users are county employees or contractors authorized to use an 800 MHz radio. Radio users may also include employees or contractors of other local, state, or federal governmental agencies or municipalities authorized to use the network by Volusia County Radio Services Manager.

1.47 **Warranty**: The warranty or warranties as set forth in this Agreement including any warranties required by State Law or regulation and described in Exhibit A.2, Section 5.8.

1.48 **Work:** Any and all obligations, work, services, duties and responsibilities necessary to the successful completion of the project assigned to or undertaken by contractor under the Contract Documents, including the furnishing of all labor, materials, equipment and other incident.

1.49 **Working Hours:** 8:00 a.m. until 5:00 p.m. excluding holidays unless otherwise defined within this Agreement.

2 EXHIBITS

Exhibit A.1 - Technical Specifications
Exhibit A.2 - Communications International Statement of Work
Exhibit A.3 - Grounding Plan
Exhibit A.4 – Project Plan
Exhibit A.5 - Volusia County Tower Sites Proposed P25 System Antenna Installations
Exhibit A.6 – Fire Station Alerting Upgrade, Implementation, and testing Plan
Exhibit B.1 – Pricing
Exhibit B.2 – Milestone Payments Schedule
Exhibit B.3 – Reuse Equipment
Exhibit B.4 – Trade-In Equipment
Exhibit B.5 - Communications Center Maintenance Cost Details
Exhibit C.1 – Insurance Requirements – Equipment
Exhibit C.2 – Insurance Requirements – Tower Construction
Exhibit C.3 – Insurance Requirements – Tower Maintenance
Exhibit D – FBI CJIS Security Policy, Addendum, and Acknowledgement Forms

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Exhibit E - L3Harris Commitment Letter
Exhibit F – County Computing Security Procedures
Exhibit G – L3Harris Software License Agreement
Exhibit H – Firmware and Software Maintenance Services Specifications

3 ORDER OF PRECEDENCE

3.1. If the Contractor finds a conflict, error, or discrepancy in the Agreement, it shall call it to the County Project Manager's attention in writing, and request the County Project Manager's interpretation and direction before proceeding with the Work affected thereby. Such notice shall be provided by the Contractor to the County's Project Manager in a timely fashion so as not to cause additional costs due to delay.

3.2. In the event of any conflicts or inconsistencies between any exhibit and the Agreement, regarding Agreement terms and conditions, Scope of Work, or pricing, the following order of precedence shall govern:

1. Modifications (i.e. amendments of change orders) to the Agreement
2. The terms and conditions in the main body of this Agreement
3. Exhibit A.1 - Technical Specifications
4. Exhibit B.1 – Pricing
5. Exhibit A.2 - Communications International Statement of Work
6. Exhibit A.5 - Volusia County Tower Sites Proposed P25 System Antenna Installations
7. Exhibit A.6 – Fire Station Alerting Upgrade, Implementation, and Testing Plan
8. Exhibit B.5 - Communications Center Maintenance Cost Details
9. Exhibit B.2 – Milestone Payments Schedule
10. Exhibit D – FBI CJIS Security Policy, Addendum, and Acknowledgement Forms
11. Exhibit G – L3Harris Software License Agreement
12. Exhibit H – Firmware and Software Maintenance Services Specifications
13. Exhibit C.1 – Insurance Requirements – Equipment
14. Exhibit C.2 – Insurance Requirements – Tower Construction
15. Exhibit C.3 – Insurance Requirements – Tower Maintenance
16. Exhibit F – County Computing Security Procedures
17. Exhibit E - L3Harris Commitment Letter
18. Exhibit A.4 – Project Plan
19. Exhibit B.3 – Reuse Equipment
20. Exhibit B.4 – Trade-In Equipment
21. Exhibit A.3 - Grounding Plan

3.3 In the event of conflicts or inconsistencies between the System Acceptance Criteria and the Agreement, regarding System Acceptance Criteria, the following order of precedence shall govern:

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1. Any changes as established by mutual agreement between the County and Contractor during the performance of this Agreement.
2. System Acceptance Criteria as described in Exhibit A.2 – Communications International Statement of Work.
3. System Acceptance Criteria in main body of the Agreement.

4. SCOPE OF WORK

The Contractor shall provide Services under this Agreement and act as Contractor to the County in accordance to the Scope of Work as specifically set forth in this Agreement and its exhibits.

4.1. Performance Criteria:

4.1.1. All services or work shall be performed in accordance with the Agreement and carried out under the direction of the County's Project Manager.

4.1.2. All labor necessary to complete the Scope of Work shall be performed in a good and competent workmanlike manner to the satisfaction of the County.

4.1.3. **Changes to Scope of Work**. The County may at any time, by written order, make changes within the general Scope of Work to be performed under this Agreement. Except as provided in this Agreement otherwise, if any such change causes an increase or decrease in the Contractor's cost of, or the time required for performance of the Project Services, an equitable adjustment shall be made and this Agreement shall be amended in writing, signed by authorized representatives of the parties, stating the equitable adjustment. Unless the County grants, in writing, an additional period of time before the completion of the Agreement, any claim by the Contractor for adjustment under this Section must be asserted in writing within thirty (30) days from the date of receipt by the Contractor of the notification of change; otherwise, the claim shall be deemed waived. The Contractor shall then proceed with the prosecution of the Work or Service as changed. Except as otherwise provided in this Agreement, no charge for any extra work or materials shall be allowed or approved by the County. No additional work shall be performed or extra materials purchased until a written Change Order has been approved by Contractor and County.

4.1.4. **Time is of the Essence**. Time is of the essence for all Work and Services performed under this Agreement and all Projects performed in accordance herewith.

4.1.5. In the event that the Contractor shall fall behind schedule at any time, for any reason, and such delay is adversely affecting the County's timely occupation of the Project for its intended purpose, the County shall be entitled to direct acceleration or re-sequencing of the work to bring the Project back on schedule. The Contractor shall reserve in each of its subcontracts entered into in connection with the Project, a right to

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accelerate consistent with the Contractor's obligations hereunder.

4.1.6. In the event the Contractor determines that the Completion Date cannot be met by re-sequencing the work, then the Contractor shall immediately provide the County, and in any event within three (3) days after the date of receipt of the County's instruction for re-sequencing or accelerating, a plan to complete the Project in the shortest possible time. No approval by the County of any plan for re-sequencing or accelerating of the work submitted by the Contractor pursuant to this clause shall constitute a waiver by the County of its rights of recovery of liquidated damages as a result of delayed Project completion.

4.1.7. **Liquidated Damages.** Contractor hereby acknowledges that time is of the essence in completion of its obligations as defined in the Agreement between the County and the Contractor, and represented in the Contractor's Project Plan. In recognition of this, Contractor hereby agrees to pay to the County Liquidated Damages in the following amounts for any delays in meeting its obligations hereunder:

4.1.7.1. Pursuant to the Agreement, Contractor shall pay to the County the sum of One Thousand One Hundred Dollars ($1,100.00) per day, as Liquidated Damages for each calendar day that the Contractor is not able to demonstrate the operational functionality of the System in accordance with the Final System Acceptance Test Plan. In the event the Contractor is delayed by third-party issues, notice must be provided to County as soon as possible and late penalties can be adjusted accordingly for issues beyond their control.

4.1.8. **Acceptance of Work.** Inspection of the finished work shall be performed by the County to determine the acceptability of the work for payment. As a result of said inspections, the County will provide the Contractor with a "punch list" of items considered by the County to be substandard. If within thirty (30) days of the date of substantial completion of construction work, Contractor has failed to remedy all punch list items to the satisfaction of the County, the County may, but shall not be obligated to cause all such remaining items to be remedied through the use of other contractors and deduct the cost thereof. The County may recover said costs from the Contractor including without limitation all of the County's attorney's fees and costs incurred in pursuit thereof.

4.1.9. **Release of Liens.** The Contractor shall deliver to the County, a complete release of liens arising out of each Work Order before the final request for payment is made. If any liens remain unsatisfied after all payments are made, the Contractor shall refund to the County such amount as the County may be compelled to pay in discharging such liens, including all costs and reasonable attorney's fee.

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4.1.10. **Authority to Act on Behalf of County**. County's Purchasing and Contracts Director or such other proper authority pursuant to County policies and procedures shall have the authority to approve, award, and execute all documents or other instruments required to effectuate changes, modifications, or additional service, so long as the then cumulative financial obligation of County for such additional items does not exceed the Director of Purchasing and Contracts' authority under the County Code of Ordinances or policies and procedures. Any change, modification or additional service that causes the cumulative financial obligation of County for such additional items to exceed the Purchasing Director's or County Manager's authority under the Procurement Code shall be presented to the Volusia County Council for approval.

4.2. During the term of this Agreement, the Contractor shall fully cooperate with the County to enable the County to comply with applicable Florida and federal statutes that prescribe requirements for the security, distribution and release, filing, submission and reporting of information relating to the Work and provided to local, state, and federal agencies. The County shall notify the Contractor in writing of any additional requirements pursuant to change order (see Section 10.7 of the Agreement.) Without limiting the foregoing, the Contractor shall enable the County to comply with the requirements of the Florida and federal statutes prescribing requirements for the security, distribution and release, filing, submission and reporting of information.

4.3. **License**. The Contractor, upon agreement execution, shall enable the County, its agencies, and third party users access or use of Contractor Partner's (L3Harris Technologies, Inc.) current generally-released version of the Software (including applications, equipment and computer networks) and any updates thereto covered through maintenance services to access and use the System that shall be serviced and maintained by Contractor under this Agreement.

4.4. **Training**. Contractor will provide all necessary training for the System as defined in this Agreement, including any Exhibits hereto.

4.5. **Services**. The Contractor shall provide the services as defined and in accordance with this Agreement including any Exhibits hereto.

4.6. All hardware, communications, and other products located at the County sites are the sole property of the County, and the County shall maintain its ownership, right, title, or interest in those products by virtue of this Agreement other than the non-exclusive right of use granted herein.

4.6.1. Any software modifications or enhancements performed by the Contractor specifically on behalf of the County, regardless of whether paid for by the County, shall remain the property of the Contractor. Any software modifications or enhancements performed by the Contractor specifically on behalf of the County, whether paid for by the County or not, will be carried forward into new releases and versions.

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4.7. **Maintenance**.

4.7.1. **Infrastructure Maintenance.**

Upon System Acceptance through the subsequent three year period, and for so long as the County continues to pay the applicable annual Maintenance Fees after year three, the Contractor agrees to provide Maintenance and Technical Support Services identified in the Agreement, and Exhibit A.2, including Maintenance and Technical Support Services by the Contractor to the County regarding P25 system infrastructure, dispatch console equipment, microwave backhaul equipment, and the licenses for the Licensed Material purchased by the County hereunder.

4.7.2. **County Subscriber Maintenance.**

Upon Final System Acceptance through the subsequent five year period, and for so long as the County continues to pay the applicable annual Maintenance Fees after year five, the Contractor agrees to provide Maintenance and Technical Support Services identified in the Agreement, and Exhibit A.2, including Maintenance and Technical Support Services by the Contractor to the County regarding portable equipment, mobile equipment, and the licenses for the Licensed Material purchased by the County hereunder.

4.7.3. The Maintenance Services provided by the Contractor are intended solely for the benefit of the County and no other persons or entities. The Maintenance Services to be performed hereunder shall be performed by Contractor's own staff, employees or subcontractors, unless otherwise authorized by the County. The employment of, agreement with, or use of the services of any other person or firm by the Contractor as consultant or otherwise, shall be subject to the prior written approval of the County. Such approval shall not be construed as constituting an agreement between the County and any such person or firm.

4.7.4. **General Provisions.** The Maintenance Statement of Work, maintenance inventory list, and maintenance pricing are more particularly described in Exhibit A.2 – Ci Statement of Work, B.1 – Pricing, Exhibit B.5 - Communications Center Maintenance Cost Details, and Exhibit H – Firmware and Software Maintenance Services Specifications attached hereto, and subsequent modifications. Contractor shall supervise and direct the Work, using its best skill and attention. Contractor shall be solely responsible for all maintenance means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Maintenance Statement of Work.

4.7.5. **Maintenance Work Changes.** Contractor shall not be relieved from its obligations to perform the Maintenance Services, in strict accordance with the exhibits, either by the activities or duties of the County or its representatives, or by inspections, tests or approvals required or performed by persons other than Contractor, unless such deviation shall have been approved by the County or the County Project Manager in writing.

4.7.6. **Key Management Personnel.** All of Contractor's on-site management and supervisory personnel and their replacements, inclusive of all on-site subcontractor personnel, shall be approved by the County prior to performing Maintenance Services, which approval shall not be unreasonably withheld or delayed. The County shall have the right to reasonably direct Contractor to remove or replace any on-site personnel whose performance is not consistent with the terms of the Maintenance Statement of Work and is unsatisfactory to the County. In such event, Contractor shall replace such personnel as expeditiously as possible.

4.7.7. **Equipment Changes.** County shall have the right to add or delete equipment from the Statement of Work for Maintenance Services, which shall increase or decrease the monthly maintenance fee as mutually agreed upon by the County and the Contractor via written approval between the Parties.

4.7.8. **Software Services.** Contractor shall provide the County with software managed services in accordance with the terms of the Firmware and Software Maintenance Services and L3Harris Software Managed Services Program Specifications, a copy of which is attached hereto as Exhibit H (the "Software Managed Services Program") and Exhibit A.2 – Communications International Statement of Work.

4.7.9. **Additional Services.** At the request of the County and upon written authorization from the County defining the extent and rate of compensation mutually acceptable for such Demand Services, Contractor shall provide additional services as authorized and agreed to by the Contractor.

4.7.10. To assert a warranty claim, County must notify Contractor in writing of the claim before the expiration of the warranty period. Upon receipt of the notice, Contractor will immediately investigate the warranty claim. If the investigation reveals that a product (equipment or part) or service under warranty is defective equipment and/or software configuration failures, through no fault of the County, Contractor shall, at no charge to County, at the Contractor's option repair or replace the failed or defective product or re-perform the maintenance service(s). Such repair or replacement or re-performance shall not extend the warranty period.

4.8. Contractor represents that all persons delivering the Services required by this Agreement have the knowledge and skills, by training and experience, to

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adequately and competently perform the duties, obligations, and Services set forth in this Agreement, and to provide and perform such Services to the County in a skillful, competent and professional manner for the agreed compensation. The Contractor shall provide all Services under this Agreement in a professional manner. The Contractor agrees to perform all Services in the most expeditious and economical manner consistent with the standard of care applicable to a contractor with the degree of skills and diligence normally employed by a professional in its field, performing the same or similar services.

4.9. **Warranty**

4.9.1. **Infrastructure (including tower).** The Contractor shall provide a three year warranty for all infrastructure and labor as described in Exhibit A.2, Section 5.8.

4.9.2. **Subscriber Equipment.** The Contractor shall provide a five year warranty for all subscriber equipment as described in Exhibit A.2, Section 5.8.

4.9.3. **System**. The Contractor warrants that the System will operate in conjunction with the Third Party items, provided that the Third Party items are performing in accordance with the specifications and Documentation incorporated in this Agreement in all material respects and are not defective in material or workmanship. In the event of a breach of this warranty, the Contractor will repair or replace the item that is causing such breach to occur.

4.9.4. **Construction Work.** The Contractor shall guarantee all labor performed for a period of one (1) year from the date of final acceptance by the County. The Contractor shall furnish the County all manufacturers' and suppliers' warranties covering materials and equipment furnished.

4.9.5. Contractor also warrants that the System is free from viruses and/or malicious software which would prevent the System from being operated as described and set forth in the Agreement and included exhibits.

4.9.6. **Contractor's Warranty.** Exhibit A.2 – Ci Statement of Work, Section 5.8, describes the Contractor's Warranty.

4.9.7. Contractor warrants that all materials, and equipment included in the Services are new, unless otherwise specified, and that all the Services are of good quality, free from improper workmanship and defective materials and in conformance with all Scope of Work documents. Contractor is responsible for the warranty of all Services, whether furnished by Contractor or Contractor's subcontractor, or other person or entity furnishing a portion of the Work.

4.9.8. **Self Help.** During the warranty period, if Contractor is unable or unwilling to respond and provide Maintenance Services in accordance with the time deadlines set forth in Section 5.7, the County reserves the right either to

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perform such Maintenance Services itself or to engage another L3 Harris RCE-EP qualified Contractor to perform the Maintenance Services for the County and then to bill Contractor for the cost of such contractor to perform the Maintenance Services. In such event, the County shall be fully responsible for the work performed by either the County and/or a qualified Contractor on the County's behalf.

4.9.9. **Communications.** Contractor shall make all communications to the County through the County Project Manager or designee. As well, all County Project Manager's communications will be through the Contractor Project Manager.

4.10. **Transition Support Services**. If this Agreement expires or is earlier terminated, the Contractor shall provide transition support services to the County and develop a transition plan (the "Transition Plan") in the form of an Amendment or Change Order to this Agreement to be signed by the County and the Contractor. Contractor's time will be limited to transition support services needed to produce required materials and to respond to questions regarding the System to be transitioned to another Contractor. The Contractor shall cooperate with the County to develop and implement an orderly transition plan and the Contractor shall continue to provide services to the County until the transition plan is completed to the satisfaction of the County. Materials include but are not limited to assistance including all Documentation so Contractor can provide the transition support services to the County or another Contractor. However, in no event shall the Contractor be obligated to disclose any legally recognized proprietary information or trade secrets, to any competitor of Contractor.

If this Agreement is earlier terminated by the Contractor, other than for default by the County, then the Contractor shall provide the above transition support services at no cost to the County. If this Agreement expires or is earlier terminated by the County, then Contractor shall provide the above transition support services upon terms mutually agreed upon by the parties.

4.11. **Ownership of County Intellectual Property**. Contractor agrees that all domain names registrations, SSL certificates, e-mail addresses, other registrations, and trade names or trademarks that the County owns prior to or acquires under this Agreement, whether purchased by the County or by Contractor for the specific benefit of the County under this Agreement shall be owned by the County with all rights of title, interest, and possession. As such, the Contractor agrees that the County shall have immediate and unfettered access to and the use and benefit of the County's domain name registrations, SSL certificates, and trade names or trademarks at any time, including upon the termination of this Agreement by either party. The Contractor further agrees that the County's domain names, SSL certificates, trade names or trademarks shall not be used by the Contractor or its subcontractors unlawfully or allow unauthorized access to the County's data in the County systems or networks.

4.12. **Documentation.** The Contractor agrees to provide the County with all Documentation, including revised, modified, or updated Documentation related to enhancement or modification to the System, in electronic format, and hereby

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grants the County permission to copy or reproduce, in whatever form, electronic, machine readable, hard copy or otherwise, any documentation supplied by it to the County, including material related to subsequent Releases for the County internal use only.

4.13. **Proof of Third Party Software Licenses**.

4.13.1. If third party software is provided by the Contractor to the County, whether by itself or in conjunction with any products, equipment, solutions, or services provided by the Contractor or any of its subcontractors, the Contractor shall:

4.13.1.1. Provide documented proof of proper licensure allowing the County the lawful use of all such third-party software products as contemplated by this Agreement. This proof will include, at a minimum, copies of software licenses and proofs-of-purchase (e.g., copies of paid invoices).

4.13.1.2. Provide updated copies of such proof of proper licensure as requested and as necessary when software is changed during system upgrades or modifications.

4.13.1.3. Supply additional supporting evidence of software licensure upon request in order to meet auditing and/or tracking requirements of the County. This includes promptly supplying such evidence of licensure in the event of an audit or evaluation of the County's software or systems performed at the request or upon the demand of a software developer or supplier.

4.13.2. The Contractor shall respond to all requests for documentation regarding third-party software licensure within one (1) week, unless otherwise agreed between the parties. Time is of the essence in producing such documentation, insofar as there may be penalties assessed against the County for any delays encountered during a license audit.

4.13.3. The Contractor shall further indemnify, defend, and hold the County harmless from and against any contractual, statutory, or regulatory penalties and costs assessed against the County arising from the Contractor's failure to provide proper software licensure or proof thereof, including the cost to the County of purchasing appropriate licenses to continue the County's use of the software pursuant to this Agreement.

4.14. **Permits.** The County has secured the permits enumerated in Section 4.14.1 below. Contractor shall strictly comply with the requirements of the permits and the permitting agencies.

4.14.1. N/A

4.14.2. Contractor shall obtain and pay for any permits relating to the Lake Harney tower site and land development, as required to perform the Work and

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complete the Project.

4.15. **Authority for Contracting**.

4.15.1. By executing this Agreement, the Contractor represents that it has visited the site, familiarized itself with the local conditions under which the Work is to be performed, and correlated its observations with the requirements of the Agreement Documents. The Contractor and each Subcontractor shall evaluate and satisfy themselves as to the conditions and limitations under which the Work is to be performed, including, without limitation:

4.15.1.1. The location, conditions, layout and nature of the Project site and surround,

4.15.1.2. Anticipated labor supply and costs,

4.15.1.3. Availability and cost of materials, tools, equipment, and other similar issues, and

4.15.1.4. The County assumes no responsibility or liability for the physical conditions or safety of the Project site or any improvements located on the Project site, with exception to areas such as dispatch centers, shelters, towers, which were identified in the scope of work.. The Contractor shall be solely responsible for providing a safe place for the performance of the Work and the County shall not be required to make any adjustment in either the agreed amount of the Agreement price or the Agreement time in connection with any failure by the Contractor or any Subcontractor to comply with the requirements hereof.

4.15.2. This Agreement between the County and the Contractor is intended solely for the benefit of the County and the Contractor and no other persons or entities. The services to be performed hereunder shall be performed by the Contractor's own staff, unless otherwise authorized by the County. The employment of, contract with, or use of the services of any other person or firm by the Contractor, as consultant or otherwise, shall be subject to the prior written approval of the County. Such approval shall not be construed as constituting an Agreement between the County and any such person or firm. Failure to obtain such approval or the use of unauthorized persons, firms, consultants, or subcontractors shall constitute a material breach of this Contract.

4.15.3. In the event the parties hereto enter into a subsequent Agreement specifically modifying this Agreement between County and Contractor, it is expressly agreed that such modification shall take precedence over this Agreement to the extent of the modification only.

4.15.4. The intent of the Agreement documents is to include all items necessary for the proper execution and completion of the Work. The Agreement documents are complementary, and what is required by any one shall be

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as binding as if required by all.

4.15.5. Work not covered in the Agreement documents shall not be required unless it is consistent therewith and is reasonably inferable there from as being necessary to produce the intended results covered by the Agreement documents.

4.15.6. Words and abbreviations which have well-known technical or trade meanings are used in the Agreement documents in accordance with such recognized meanings.

4.15.7. The organization of the technical specifications into divisions, sections and articles, and the arrangement of drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any one of them.

5 RESPONSIBILITY OF CONTRACTOR

5.1 Where questions exist as to the Scope of Work to be provided, Contractor shall confer with the County Project Manager to ascertain the functional criteria of the Scope of Work.

5.1.1 Contractor covenants and agrees as follows:

5.1.1.1 That Contractor has no obligations, commitments, or impediments of any kind that shall limit or prevent Contractor's performance of the Services.

5.1.1.2 That Contractor recognizes that its special talent, training, and experience caused the County to select Contractor to be the prime professional;

5.1.1.3 That Contractor comprehends the specifications and requirements of the Scope of Work and the use of the same in their entirety to provide Deliverables;

5.1.1.4 That Contractor shall be responsible for the professional and technical accuracy of all services furnished by the Contractor and its subcontractors under this Contract.

5.1.1.5 That Contractor possesses the special skills to recognize material errors or omissions that would result in failures to appropriately perform in accordance with the Scope of Work; and

5.1.1.6 That Contractor shall adhere to the standard of care applicable to a contractor with the degree of skills and diligence normally employed by a licensed professional in his field or practice performing the same or similar services or work in compliance

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with all applicable federal, state, and municipal laws, regulations, codes, and ordinances.

5.1.1.7 That Contractor shall maintain, or ensure subcontractors maintain, a valid contractor's license and insurance for all construction work specified at all times during the term of this Contract.

5.1.1.8 That Contractor shall keep the County informed of any changes or advancements in technology occurring any time prior to or during actual implementation of the Services to the extent that such changes and advancements may increase efficiency or otherwise allow for better services or reductions in costs to the County.

5.1.1.9 That any Project data, summaries, reports, or studies, submitted by the Contractor to the County shall be competently drafted and accurate with regard to the information contained therein. County's acceptance, approval, or reliance on any such documentation shall not release Contractor from any liability if such information is incorrect or inaccurate, it being understood that the County is relying on the Contractor's status as an industry professional in accepting such documentation.

5.1.1.10 The Contractor shall, without additional cost to the County, correct or revise any errors or deficiencies in the Work on the Project.

5.1.1.11 The Contractor shall serve as an expert witness for the County in any legal proceedings arising in connection with this Contract, if the County so requests.

5.1.1.12 That Contractor shall notify the County if it discovers or has knowledge of anything of any nature in any reports, studies, bulletins, schedules, documentation, requirements or instructions prepared by Contractor or data or instructions supplied to Contractor by the County or any other party, Contractor regards in Contractor's professional opinion as unsuitable, improper, or inaccurate.

5.1.1.13 That Contractor shall efficiently administer and perform all services or work economically and expeditiously in a competent and workmanlike manner.

5.2 **General Provisions.** The Contractor shall supervise and direct the Work, using its best skill and attention. The Contractor shall be solely responsible for all construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under this Contract including coordination of

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the work of all Subcontractors.

5.2.1 Unless otherwise provided in the Contract Documents, Contractor shall furnish and pay for all labor, materials, equipment, tools, construction equipment and machinery, heat, utilities, transportation, and other facilities and services necessary for the proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated in the Work. The Contractor shall check all materials entering the Project site, including materials furnished under trade contracts, and labor performing any portion of the Work and shall keep full detailed accounts of such materials and labor. Upon the County's acceptance of work or services, the County shall accept all undisputed expenditures and will provide payment pursuant to Section 10 – Compensation and Method of Payment.

5.2.2 Manufactured articles, materials and equipment shall be applied, installed, connected, erected, cleaned and conditioned in accordance with manufacturers' recommendations. Likewise, materials and equipment shall be stored in accordance with manufacturers' recommendations, or in such a manner as to insure the preservation of their quality and fitness for incorporation in the Work. When considered necessary, such materials and equipment shall be placed on wooden platforms or other elevated surfaces, and/or shall be placed under cover. Stored materials and equipment shall be located so as to facilitate prompt inspection.

5.2.3 Manage, schedule and direct the Work including the activity of Subcontractors and coordinate the performance of the Work, such as to complete the Project in accordance with County's objectives of cost, timeliness and quality.

5.2.4 The Contractor shall not be relieved from its obligations to perform the Work in strict accordance with the Agreement documents either by the activities or duties of the County or its representatives, or by inspections, tests or approvals required or performed by persons other than the Contractor, unless such deviation shall have been approved by the County in writing.

5.3 **Contractor's Project Site Organization.** Maintain a competent staff at the Project site to coordinate and direct the Work and the progress of the Subcontractors on the Project. Identify a Project Manager to represent Contractor on a daily basis with authority to negotiate change orders and contract modifications on behalf of Contractor so as not to delay the progress of the Work. The Project Manager shall represent Contractor and all communications given to the Project Manager shall be as binding as if given to Contractor. Important communications shall be confirmed in writing. Other communications shall be so confirmed on written request in each case.

5.3.1 **Key Management Personnel.** All of Contractor's on-site management and supervisory personnel shall be approved by the County prior to assignment to the Project and shall not be removed or replaced without County's consent. The County shall have the right to direct the Contractor

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to remove or replace any on-site personnel whose performance becomes unsatisfactory to the County. In such event the Contractor shall promptly replace such personnel.

5.3.2 **Superintendence.** The Contractor shall employ a competent Project Manager or necessary assistants who shall be in attendance at the Project site during the progress of the Work. It shall be the responsibility of the Project Manager to coordinate the work of all Trade Contractors under contract with the Contractor.

5.3.3 **Labor Relations.** Develop, implement and administer as necessary an effective labor relations program for the Project in order to avoid labor disputes during performance of the Contract.

5.3.4 The Contractor shall at all times enforce strict discipline and good order among its employees and all Subcontractors under direct or indirect contract with the Contractor and shall not employ on the Work any unfit person or anyone not skilled in the task assigned to it.

5.3.5 The Contractor shall be responsible to the County for the acts and omissions of its employees, Subcontractors and their agents and employees, and other persons performing any of the Work under a direct or indirect contract with the Contractor.

5.3.6 Review the Project Schedule with the Subcontractors and, if necessary, expand the level of detail to incorporate specific Subcontractor input consistent with the overall completion requirements.

5.3.6.1 Provide regular monitoring and updating of the Project Schedule and various sub-networks as construction progresses. Identify potential variances between scheduled and probable milestone dates.

5.3.6.2 Review schedule for work not started or incomplete, take appropriate measures and action to meet the scheduled milestone dates.

5.3.6.3 Provide summary reports of each monitoring and document all changes.

5.3.6.4 Include regular scheduled updates and reporting.

5.3.7 Determine the adequacy of the Subcontractors labor force and equipment and the availability of materials and supplies to meet the Project Schedule. Take necessary corrective actions when these requirements are not being met by any Subcontractor and advise the County of same.

5.3.8 Give all notices required by and exercise best efforts to ensure that all Work is performed and constructed so that it complies with the applicable laws and ordinances, the plans and specifications, requirements of regulatory

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agencies having jurisdiction on the Project including, without limitation, the requirements of the National Fire Prevention Association (NFPA), the State Fire Marshall, and the Occupational Safety and Health Administration (OSHA), and all codes governing public buildings, without, however, assuming any of the Engineer's responsibilities for design in accordance therewith. The Contractor shall be responsible for performing all Work so that it is satisfactory to the regulatory agencies required to inspect and approve the Work.

5.4 **Hazardous Materials.** The Contractor shall provide medical monitoring to any of his employees or agents that may be exposed to hazardous materials or substances in excess of background levels during any phase of a project. The Contractor shall assume full responsibility and liability for compliance with all applicable federal, state, and local regulations pertaining to the protection of workers, visitors to the site, and persons occupying areas adjacent to the site. The Contractor shall hold the County of Volusia harmless for failure to comply with any applicable safety and health regulation on the part of himself, his employees, and/or his Subcontractors.

5.5 **Utilities.** The Contractor shall be responsible for determining the adequacy of available utilities on-site. Where utilities are not available or are inadequate at the job site, the Contractor shall provide at their own expense, all necessary temporary utilities required for the work specified.

5.6 **Supervision.** The Contractor shall direct and supervise competent and qualified personnel and shall devote time and attention to the direction of the operation to ensure performance of obligations and duties as set forth herein. The Contractor shall hire, compensate, supervise, and terminate members of its work force, and the Contractor shall direct and control the manner in which Work is performed including conditions under which individuals shall be assigned duties, how individuals shall report, and the hours individuals shall perform. The Contractor shall be responsible for all income tax, social security and Medicare taxes, federal unemployment taxes, and any other withholdings from the company's employees' and/or subcontractors' wages or salaries. Benefits, if any, for the Contractor's employees and/or subcontractors shall be the responsibility of the Contractor including, but not limited to, health and life insurance, retirement, liability/risk coverage, and worker's and unemployment compensation. Contractor shall be solely responsible for the means, methods, techniques, sequences and procedures in delivering services or work pursuant to this Agreement. Further, Contractor shall be responsible for assuring the County that finished or completed Deliverables accurately comply with the requirements of this Agreement and the Scope of Work contained therein.

5.7 **Continuing the Work.** The Contractor shall carry on the work and adhere to the progress schedule during all disputes of this Contract with the County. No work shall be delayed or postponed for more than a five business day period, pending resolution of any disputes of this Contract, except as specifically set forth herein, or as the County and Contractor may otherwise agree in writing.

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5.8 **Assurance**. Subject to Section 5.1.1.6., Contractor gives County its assurance that all Services performed under this Agreement shall be timely performed in a competent and workmanlike manner and in accordance with the specifications and requirements of the Agreement and any approvals required under the Agreement. After the dispute resolution process has been completed as outlined in Section 24 – Dispute Resolution, Services not conforming to the specifications and requirements of the Scope of Work shall be considered materially defective and constitute a breach of this Agreement.

5.9 **Use of Premises.** The Contractor shall assume responsibility for any physical damages that are a direct result of the performance of the Work. During the progress of the Work, the Contractor shall keep the Project site free from accumulations of waste materials resulting from the Project. At the completion of the Project, the Contractor shall remove, at its expense, all waste materials to receptacles provided by the Contractor or the County, if any, as well as tools, appliances, equipment, machinery and/or surplus materials. The Contractor shall leave the site clean, restoring to its original condition or the condition specified by the County.

5.10 During the Project, the Contractor is responsible for security, fire safety and damage to equipment and other County property losses incurred by the Contractor and his labor force.

5.11 The County reserves the right to monitor/inspect, request work modifications, cease work or to have personnel removed from County property throughout the duration of this Contract.

5.12 The Contractor shall be responsible for the professional and technical accuracy of all services furnished by the Contractor and its Sub-Contractors under this Contract.

5.13 **Services to Comply with Specifications and Law.** All Services performed by Contractor including all general provisions, special provisions, job specifications, drawings, addendum, amendments to the basic Agreement, written interpretations, and written orders for minor changes in Work, shall comply with the Scope of Work and all applicable local laws, codes, ordinances and statutes.

5.14 **County Computing Security Procedures.** Contractor acknowledges receipt of, and agrees to comply with, Exhibit F - Computing Security Procedures.

6 RESPONSIBILITY OF COUNTY

6.1 The County shall assign a County Project Manager to represent the County in all matters pertaining to the services rendered pursuant to this Agreement.

6.2 The County agrees to the general assumptions as outlined in Exhibit A.2, Section 4.2 General Assumptions.

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6.3 The County agrees to provide the resources as detailed in Exhibit A.2, Section 5.6 - Resources to be provided by the County.

6.4 The County agrees to the responsibilities relating to the tower construction site as listed in Exhibit A.2, Section 9.6.4 Preliminary Construction Site Management Plan – Lake Harney.

6.5 The County will provide Ci with a structural analysis for all towers (with the exception of the Flagler tower), whether or not tower requires structural modification, to support the new P25 antenna infrastructure, as necessary.

7 OTHER AGENCIES

Contractor shall permit any municipality or other governmental agencies located in Volusia County utilizing the County of Volusia radio system to participate in the Agreement under the same prices, terms, and conditions. It is understood that at no time will any city, municipality, or other agency be obligated for placing an order for any other city, municipality, or agency; nor will any city, municipality, or agency be obligated for any bills incurred by any other city, municipality, or agency. Further, it is understood that each agency will issue its own purchase order to the Contractor.

8 CONFIDENTIAL INFORMATION

8.1 **Generally**. Both parties hereby acknowledge that each may be exposed to confidential and proprietary information of the other and providers of software and confidential and proprietary information, business information, and information that may be exempted from disclosure or prevented from being disclosed by reason of law. If the Contractor intends to designate certain information provided to the County as Confidential, then such information must be expressly identified in writing by the Contractor and the Contractor must provide the County with a completed Non-disclosure form provided by the County to request the County to sign.

8.2 **Confidential Information**. Confidential information shall constitute information which is exempt from disclosure pursuant to Chapter 119, Public Records Law, Florida Statutes (2018), Article I, Section 24 of the Florida Constitution ("Florida Public Records Law"), Chapter 812 of the Florida Statutes (2020), and any other Florida statute that may provide for an exemption or the confidentiality of certain information (hereinafter "Confidential Information"). In addition and for the purposes of this Agreement and any future statement of work, Confidential Information shall include Confidential Information and/or trade secret information disclosed by the Contractor to the that County that is expressly identified in writing by the Contractor and the Contractor's subcontractors. As such, any Confidential Information as defined herein that is provided by the Contractor to the County must be expressly identified in a fully completed and executed Nondisclosure Agreement for Confidential Materials which the Contractor may obtain from the County's Purchasing and Contracts Division.

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Confidential Information and/or trade secrets do not include the following:

8.2.1 Information already known to or independently developed by the recipient;

8.2.2 Information in the public domain through no wrongful act of the recipient;

8.2.3 Information received by the party in possession from a third party the recipient;

8.2.4 Information regularly disclosed by the owner of the information to third parties without restriction on disclosure; or

8.2.5 Information required to be disclosed by law or an order of court, provided that a party required to make disclosure of the other party's Confidential Information shall first notify the other party of such requirement and permit the party to obtain a protective order or other similar relief.

8.3 With respect to the Confidential Information, both parties hereby agree that during the term of this Agreement and at all times thereafter, neither shall use, commercialize or disclose such Confidential Information obtained from the other to any person or entity, except to such other parties as the party claiming confidentiality may approve in writing and under such conditions as such claiming party may impose in writing.

8.4 Restrictions upon Disclosure of Information. Each party agrees subject to the conditions and obligations of this Article 8:

8.4.1 To treat the other's Confidential Information as proprietary to the other;

8.4.2 To not knowingly disclose to any person, other than its employees, consultants, or agents or the employees, consultants and agents of the other party (as directed by the other party), any Confidential Information belonging to the other party;

8.4.3 To inform its employees, consultants and agents of the confidential nature of the others information and of the requirement of nondisclosure; and

8.4.4 In the event either party has actual knowledge of a breach of the nondisclosure requirements of this Article, the party acquiring such knowledge shall promptly inform the other party and assist that party in curing the disclosure, where possible, and preventing future disclosures.

8.5 Where the County receives a request by a third party for disclosure of (i) the Confidential Information or (ii) other information that the County believes to be Confidential Information and/or a trade secret of Contractor, the County shall, in

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either instance, give written notice to the Contractor and the Contractor shall take immediate action to notify the County in writing whether the Contractor agrees to the disclosure or whether Contractor opposes disclosure and shall take legal action to prevent such disclosure.

8.6 Where the Contractor receives a request by a third party for disclosure of information that the Contractor believes to be Confidential Information and/or a trade secret of the County, the Contractor shall give written notice to County and County shall take immediate action to notify Contractor in writing whether the County agrees to the disclosure or whether the County opposes disclosure and shall take legal action to prevent such disclosure.

8.7 If a third party makes a public records request to the County for disclosure of the Licensed Software or Documentation or any item which has been marked and identified by the Contractor as confidential or a trade secret, and, the County has refused disclosure, and the third party files suit to require disclosure, the Contractor acknowledges the County is required to submit any requested item to the court for inspection in camera as set forth in Section 119.07(1)(g), Florida Statutes (2020), or as such provision may be amended. Contractor further acknowledges that Section 119.12, Florida Statutes (2020), states:

If a civil action is filed against an agency to enforce the provisions of this chapter and if the court determines that such agency unlawfully refused to permit a public record to be inspected or copied, the court shall assess and award, against the agency responsible, the reasonable costs of enforcement including reasonable attorneys' fees.

The Contractor further agrees to indemnify, defend, and hold the County harmless from any damages, penalties, or sanctions, including attorney's fees and costs, assessed against the County pursuant to § 119.12, Florida Statutes, if a court of competent jurisdiction determines that such records were not confidential or subject to exemption.

8.8 The Contractor understands and acknowledges that records kept, maintained, or made in the course of performing this Agreement are public records, subject to disclosure pursuant to Chapter 119, Florida Statutes, unless such records are deemed private or otherwise confidential and exempt pursuant to Florida law. If the Contractor fails to cooperate with the County in producing any such records or otherwise fails to maintain, keep, and store such records in accordance with Florida law, then the Contractor shall be liable to the County for any damages, penalties, or sanctions, including, but not limited to, attorney's fees and costs, assessed against the County pursuant to Section 119.12, Florida Statutes (2020), including any successor statutes, and shall further indemnify, defend, and hold the County harmless from any such costs, fees, or penalties.

8.9 The Contractor acknowledges and agrees that the County is the owner and custodian of information and data, whether or not such is electronically retained

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and regardless of the retention media and that the use of any Licensed Software in relation to such information or data does not in any way restrict the rights or obligations of the County regarding disclosure of their data and information, provided that the foregoing shall not be construed to permit the County to disclose any Confidential Information (including without limitation the Licensed Software or Documentation) in contravention of the County's obligations hereunder or under Florida or Federal law.

8.10 Except to the extent authorized in this Agreement, both parties hereby agree that during the term of this Agreement and at all times thereafter, neither shall use, commercialize or disclose Confidential Information as defined herein and/or trade secret obtained from the other to any person or entity, except to such other parties as the party claiming confidentiality may approve in writing and under such conditions as such claiming party may impose in writing.

8.11 Notwithstanding the foregoing provisions, disclosure of a purported trade secret or Confidential Information shall not be precluded if:

8.11.1 Such disclosure is in response to a valid order of a court or other governmental body of the United States or any political subdivision thereof; or

8.11.2 Such disclosure is necessary to establish rights or enforce obligations under this Agreement and the Scope of Work, but only to the extent that any such disclosure is necessary for such purpose; or

8.11.3 The County received the prior written consent to such disclosure from Contractor, but only to the extent permitted in such consent; or

8.11.4 Disclosure is required by Florida law, including but not limited to Chapter 119, Florida Statutes; or

8.11.5 Disclosure is not exempted by Florida law, including but not limited to Chapter 119, Florida Statutes; or

8.11.6 Disclosure is required by Federal law, which is preemptive of Florida law.

8.12 If an intended or required disclosure described in Section 8.11 occurs, the party intending or being required to disclose the other party's Confidential Information shall provide the other party with reasonable advance notice in order to permit the other party the opportunity to seek a protective order or other appropriate relief. Regardless of Sections 8.11.2 and 8.11.3 above, the County shall first comply with its obligations under this Agreement, subject to Chapter 119, Florida Statutes (2020) that permit Contractor to object to such disclosures.

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8.13 Notwithstanding anything to the contrary contained above or elsewhere in this Agreement, the County shall have the right to use the Licensed Software to provide access by the public or government agencies to the database(s), files or information derived from the use of the System and/or to generate reports from such files or information, files or information on electronic media to the public where required or allowed by the laws of the State of Florida or other laws allowing disclosure by the County, provided that the foregoing shall not be construed to permit the County to disclose any Contractor Confidential Information in contravention of the County's obligations hereunder.

8.14 **Security Breach.** Within one (1) hour of discovery, the Contractor shall notify the County should it discover any breach of the security provisions set forth in this Agreement or a loss, interception, unauthorized disclosure or other compromise of the County Data and shall immediately coordinate with the County to investigate and remedy such breach(es) in a diligent and timely manner. Except as may be strictly required by applicable law, the Contractor agrees that it will not inform any third party of any such security breach involving the County Data without the County's prior written consent; however, if such disclosure is required by applicable law, the Contractor agrees to work with the County regarding the content of such disclosure so as to minimize any potential adverse impact upon affected parties.

8.15 THE ABOVE DUTIES AND OBLIGATIONS SHALL SURVIVE THE CANCELLATION OR TERMINATION OF THIS AGREEMENT.

9 DELIVERY, TITLE AND RISK OF LOSS

9.1 **Shipping and Risk of Loss**. All equipment, goods and materials shipped by or on behalf of Contractor for this Project under this Agreement shall be F.O.B. Destination. Contractor acknowledges that all provided equipment, goods and materials for the Scope of Work that are shipped or provided to Contractor by or on behalf of the County under this Agreement shall be new and shall have been purchased by the County specifically for implementing the Project under this Agreement or as mutually agreed between the Contractor and the County. Contractor acknowledges that any loss or damage during shipment of the equipment, goods, and materials requires that County be made whole with new equipment, goods, and materials of the same type, brand, and quality unless otherwise agreed upon in writing by the County. The valuation of the equipment, goods and materials shall be as "new" and not "used" unless otherwise specified by the County.

9.2 Risk of loss for infrastructure and all non-subscriber equipment will pass to Customer upon Final System Acceptance. Risk of loss for subscriber radios will pass to Customer upon delivery of the Equipment to the Customer designated location. Contractor will pack and ship all Equipment in accordance with good commercial practices.

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9.3 Storage for all Equipment and materials shall be the responsibility of the Contractor. The Contractor shall store all Equipment and materials at the Contractor's secure facility(ies) until said Equipment and materials are required for immediate use or installation.

10 COMPENSATION AND METHOD OF PAYMENT

10.1 **Compensation.** As consideration for the Contractor's satisfactorily performing the Scope of Work set forth in Article 4 – Scope of Work hereof and complying with other terms of this Agreement and all Exhibits hereto, the Contractor shall be compensated in the amounts provided in Exhibit B.1 - Pricing. The Contractor agrees to provide Services and Deliverables to the County in accordance with this Agreement and all Exhibits hereto, and the County agrees to compensate the Contractor for the services and deliverables as described in this Agreement.

10.1.1 As of the Effective Date of this Agreement, the maximum not to exceed compensation, which includes any allowable expenses, payable to the Contractor for the services and deliverables, is TWENTY-THREE MILLION FIVE HUNDRED TWELVE THOUSAND SIX HUNDRED FIFTY DOLLARS AND NINETY-SEVEN CENTS ($23,512,650.97) as described in Exhibit B.1 (which excludes recurring maintenance fees) consisting of:

Terminals: $8,057,993.63
Infrastructure: $15,238,462.34
Radio Upgrades (existing terminals): $216,195.00

10.1.2 Estimated terminal quantities in Exhibit B.1 include anticipated purchases by the County and municipalities/agencies that utilize the Volusia County radio network. Non-County purchases shall be requested through each municipality/agency's procurement process and invoiced to each municipality/agency as appropriate. The County will not be responsible for non-County purchases.

10.1.3 Terminal pricing and features as listed in Exhibit B.1 shall be valid for twelve months from Agreement execution. Thereafter, terminal pricing and features shall be discounted at a minimum of manufacturer's list price minus twenty-eight percent (List – 28%).

10.1.4 Terminal pricing and features as listed in Exhibit B.1 shall be applicable to radio quantities at 5,000 and above for the time period beginning June 16, 2020 through eighteen months from Agreement execution. Radios purchased for use on the County radio network, regardless of purchaser, shall apply toward quantity count.

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10.1.5 Recurring Fees for County Maintenance and Technical Support are as detailed in Exhibit B.1. The monthly fee for maintenance and support shall be calculated based on the quantity and nature of the Equipment and parts services under the Scope of Work and set forth in Exhibit H – Firmware and Software Managed Services Specifications. The monthly fees as set forth in Exhibit B.1 - Pricing may be prorated on a per individual Equipment basis.

10.2 The Fees shall be amended or modified solely by Amendment or Change Order to this Agreement with the exception of recurring bi-annual adjustment of subscriber maintenance quantities and cost summary.

10.3 Six (6) month adjustments of County subscriber's maintenance quantities and costs. County shall reserve the right to add or delete equipment from the Statement of Work and Exhibit H – Firmware and Software Maintenance Services Specifications, pursuant to Agreement pricing, which shall increase or decrease the monthly subscriber maintenance fee charge as mutually agreed upon by the County Project Manager and the Contractor via written approval between the Parties without written amendment or Change Order to this Agreement.

10.4 Subject to any changes approved pursuant to Section 10.6 it is acknowledged and agreed by the Contractor that the Fees set forth in Section 10.1 is the maximum compensation and rates payable and constitutes a limitation upon the County's obligation to compensate the Contractor. The maximum amounts, however, do not constitute a limitation of any sort, upon the Contractor's obligation to perform all Services and complete all items of Work required by or which can be reasonably inferred from this Agreement.

10.5 The compensation set forth in Section 10.1 is inclusive of any and all of the Contractor's overhead, operating costs, outlays, profit, and associated out-of-pocket costs including, but not limited to photocopying, long distance telephone, special mailings and the like. The Contractor shall also bear all of its own expenses arising from its performance of the obligations under this Agreement and the Scope of Work including (without limitation) expenses for facilities, work spaces, utilities, management, clerical and reproduction services, supplies, and the like. The foregoing shall not be construed to mean that the Contractor did not include their expenses as a factor such fees set forth in Exhibit B.1. The prices and costs stated for Deliverables exclude all taxes.

10.6 **Amendment/Change Orders**. The County may at any time, by written order, make changes within the general Scope of Work to be performed under this Agreement. Except as provided in this Agreement otherwise, if any such change causes an increase or decrease in the Contractor's costs or the time required for performance of the Project work or services, an equitable adjustment shall be made, and this Agreement shall be amended in writing, signed by authorized representatives of the parties, stating the equitable adjustment. Unless the County grants, in writing, an additional period of time before the completion of the

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Agreement, any claim by the Contractor for adjustment under this Section must be asserted in writing within thirty (30) days from the date of receipt by the Contractor of the notification of change; otherwise, the claim shall be deemed waived. The Contractor shall then proceed with the prosecution of the Services as changed. Except as otherwise provided in this Agreement, no charge for any extra work or materials shall be allowed or approved by the County. No additional work shall be performed or extra materials purchased until a written Change Order has been approved by the Contractor and the County except in cases of emergency endangering life or property. All change orders or amendments to this Agreement must be authorized by the appropriate County official or governing body having the requisite purchasing authority under the County's Code of Ordinances (http://library.municode.com/index.aspx?clientId=11665) and Purchasing Policies and Procedures (https://www.volusia.org/core/fileparse.php/5896/urlt/P-C-Manual-08-28-2020-Final.pdf) to obligate the County for additional cumulative financial obligations or risk exposure associated with a change order or amendment to this Agreement.

10.7 **Performance and Payment Bonds**.

10.7.1 **Project (excluding tower construction)**. Contractor shall furnish a Performance and Payment Bond to the County, prior to performing any work under the Agreement in an amount equal to the total value of the project, excluding terminals, including any amendments or change orders made thereto pursuant to the order or other documentation executed by the parties, in strict accordance with FL Statute, §255.05. Failing to do so, shall constitute a material breach of this Agreement. The Bond shall be secured from or countersigned by an agency or surety company recognized in good standing and authorized to do business in the State of Florida and subject to approval by the County Risk Manager.

Simultaneously with the delivery of the executed Contract to the County, and yearly on or before the anniversary date of the Agreement, the Contractor must deliver to the County, executed, separate performance and payment bonds on the prescribed forms, each in an amount of one hundred percent (100%) of the Contract price of the accepted proposal, excluding the cost of tower construction, as security for the faithful performance of this Contract and for the payment of all persons performing labor or furnishing materials in connection therewith. The performance and payment bonds shall have as the surety thereon only such surety company or companies as are authorized to write bonds of such character and amount under the laws of the State of Florida and with a resident agent in Florida. The Attorney-in-Fact or other officer who signs performance and payment bonds for a surety company must record with such bonds a certified copy of his Power-of Attorney authorizing him/her to do so.

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10.7.2 **Tower Construction**. Contractor shall furnish Performance and Payment Bonds to the County, prior to performing any tower construction work under the Contract in an amount equal to the total value of the tower construction including any amendments or change orders made thereto pursuant to the order or other documentation executed by the parties, in strict accordance with FL Statute, §255.05. Failing to do so, shall constitute a material breach of this Contract. The Bonds shall be secured from or countersigned by an agency or surety company recognized in good standing and authorized to do business in the State of Florida and subject to approval by the County Risk Manager.

Simultaneously with the delivery of the executed Contract to the County, and yearly on or before the anniversary date of the Agreement unless tower construction has been completed, the Contractor must deliver to the County, executed, separate performance and payment bonds on the prescribed forms, each in an amount of one hundred percent (100%) of the Contract price of the tower construction portion of this Contract as security for the faithful performance of this Contract and for the payment of all persons performing labor or furnishing materials in connection therewith. The performance and payment bonds shall have as the surety thereon only such surety company or companies as are authorized to write bonds of such character and amount under the laws of the State of Florida and with a resident agent in Florida. The Attorney-in-Fact or other officer who signs performance and payment bonds for a surety company must record with such bonds a certified copy of his Power-of Attorney authorizing him/her to do so.

10.8 Upon cancellation of the Agreement, the County reserves the right to obtain services on the open market as required without competition and for such time until a new solicitation can be advertised, received, evaluated, and an Agreement awarded.

10.9 **METHOD OF BILLING AND PAYMENTS**

10.9.1 **Implementation Milestone Payments.** Subject to the provisions of this Article 10 the County agrees to make payment for the implementation deliverables contemplated by this Agreement as set forth in Exhibit B.1. After completion of the respective Tasks designated for each Milestone Payment in the Milestone Payments Schedule, attached hereto as Exhibit B.2 and incorporated herein by this reference (the "Milestone Payment Schedule"), acceptance by the County of the Task or Tasks to be completed for such Milestone Payment, and confirmation of that acceptance by the County's execution of the Task Completion Notice, Contractor shall prepare and submit invoices for payment by the County under this Agreement.

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10.9.2 **Infrastructure Maintenance Payments.** Beginning with the infrastructure maintenance period for year four, an invoice shall be submitted sixty (60) days in advance of the next year of service in the amounts specified in Exhibit B.1. This invoice corresponds to infrastructure extended maintenance which shall include maintenance and support as specified in Exhibit B.1.

10.9.3 **Subscriber Maintenance (County Only).** Beginning with the subscriber period for year six, an invoice shall be submitted sixty (60) days in advance of the next year of service in the amounts specified in Exhibit B.1. This invoice corresponds to subscriber extended maintenance which shall include maintenance and support as specified in Exhibit B.1.

10.9.4 The Contractor acknowledges that the County is a tax exempt entity, and the County agrees to provide the Contractor with written proof of such status, if requested. As such, the County shall not be responsible for paying taxes.

10.9.5 In each invoice for payment associated to construction work, the Contractor shall certify as follows:

10.9.5.1 There are no known mechanic's or materialmen's liens outstanding at the date of this invoice; all due and payable bills with respect to the Project have been paid to date or shall be paid from the proceeds of this invoice for payment;

10.9.5.2 There is no known basis for the filing of any mechanic's or materialmen's liens on the Project; and waivers from all subcontractor's and materialmen employed by the Contractor have been or will be obtained in such form as to constitute an effective waiver of lien under the applicable laws of the State of Florida;

10.9.5.3 All improvements have been installed in accordance with the related contract documents (except where noted or agreed upon in writing by the County pursuant to an approved Change Order); and

10.9.5.4 No encroachments into the designated set-back lines and right of way, as stipulated, exist.

10.9.6 Beginning with the second invoice for payment associated with construction work, the Contractor shall also deliver with each such invoice, as a condition precedent to payment thereof, waivers of lien for

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each of its subcontractors, current through the effective date of the previous invoice for payment. The Contractor may, if any subcontractor or supplier refuses to furnish a release in full, furnish a bond satisfactory to the County against any lien.

10.9.7 The Contractor shall submit invoices for each milestone for which Work or Services were rendered to the County upon the completion of such Services or Work. Each invoice shall show detailed explanations of the Services and Work accomplished in accordance with the Agreement prices. All of the above shall sum to the total amount requested; otherwise, the County's Project Manager shall reject the invoice and notify the Contractor in writing of the discrepancy.

10.9.8 The County shall pay the Contractor within forty-five (45) days of receipt of the Contractor's proper invoice of services, subject to the applicable provisions of the Florida Prompt Payment Act (Part VII of Chapter 218, Florida Statutes) and pursuant to Section 9.7.1. To be deemed proper, all invoices must comply with the requirements set forth in this Agreement and applicable law and must be submitted on the form and pursuant to instructions prescribed by Contract Administrator. If the County receives an improper payment request or invoice from the Contractor, the County shall, within 10 days after receipt of such improper request or invoice, notify the Contractor in writing that the request or invoice is improper and state what corrective action on the part of the Contractor is needed to rectify the request or invoice. Payment may be withheld for disputed amounts until resolved by the parties as provided for by law.

10.9.9 Compensation shall not be adjusted due to (i) errors or omissions made in computing the Project costs that result in an increase in the cost of or compensation to be paid pursuant to the Scope of Work where such errors or omissions are not the fault of the County; (ii) the time for completion of the Work, Services, or a Project varies from the original estimate, including situations in which completion or substantial completion of this Scope of Work occurs prior to the scheduled Completion Date or a date specified by this Scope of Work; or (iii) on account of County's election to furnish any of the Work or Services. In addition, Contractor shall certify that the original prices included in the Contractors proposal or Compensation for Work and Services and any additions thereto shall be adjusted to exclude any significant sums by which the County determines the price or Compensation was increased due to inaccurate, incomplete, or noncurrent wage rates and other factual unit costs.

10.9.10 If additional travel outside of the Scope of Work becomes necessary, all such travel will be preconditioned on execution of an Amendment/Change Order and shall be conducted pursuant to the

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Volusia County Travel and Training Policy as set forth in the County's web site:

http://www.volusia.org/core/fileparse.php/4585/urlt/Travel-and-Training-Policy.pdf

10.9.11 The Contractor shall pay its Subcontractors within thirty (30) days following receipt of payment from the County for such services. The Contractor agrees that if it withholds an amount as retainage from such Subcontractors, that it shall release such retainage and pay same within thirty (30) days following receipt of payment of retained amounts from the County.

10.9.12 The County may withhold payment of any specific invoiced charges in a pay request or monthly statement which it disputes in good faith and pay all undisputed charges on the invoice, pay request or monthly statement.

10.9.13 Any provisions hereof to the contrary notwithstanding, the County shall not be obligated to make current payment to the Contractor hereunder if any one of the following conditions exists:

10.9.13.1 The Contractor fails to diligently prosecute the work in an efficient, timely, and workmanlike manner and in strict accordance with the provisions of the Contract Documents; or

10.9.13.2 The Contractor fails to use an adequate number of qualified personnel and sufficient equipment to complete the Project without undue delay; or

10.9.13.3 The Contractor fails to make prompt payments to its subcontractors, materialmen, or laborers; or

10.9.13.4 Any part of such payment to the Contractor is attributable to work which is defective or not performed in accordance with the drawings and specifications; provided, however, such payment shall be made as to the part thereof attributable to work which is performed in accordance with the drawings and specifications and is not defective; or

10.9.13.5 The Contractor is otherwise in default of any of its obligations hereunder or otherwise is in default under any of its contractual requirements.

10.9.14 In the event that the County requires the Contractor to provide Performance and Payment Bonds, the County agrees to pay the

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Contractor, by County's check, the invoice or proposal cost of those Bonds (whichever is less), not to exceed the price quoted in the Proposal.

10.9.15 Work and Services provided under this Agreement shall comply with all requirements of the Volusia County Code of Ordinances and the Purchasing Procedures Manual.

10.9.16 **Invoices.** Invoices shall be addressed to the following:

Volusia County Information Technology
119 W. Indiana Avenue
DeLand, FL 32720
Attention to: Trent Skille

Email: tskille@volusia.org
(Note: Invoice mailing address and email addresses subject to change with notification provided to Contractor by County Project Manager.)

10.9.17 The Contractor's Invoice(s) shall be accompanied by supporting data as may be required by the County Project Manager. County Project Manager shall review the Contractor's Invoice and supporting data and notify the Contractor in writing within ten (10) days from receipt of the statement if any amounts requested are disputed or lack adequate support or documentation.

10.9.18 **Contractor's Continuing Obligations**. Contractor's obligation to perform the Work in accordance with the Contract Documents shall be absolute. Neither approval of any payment by County to Contractor under the Contract Documents nor any act of acceptance by the County nor any failure to do so, nor any correction of defective work by County shall constitute an acceptance of Work or Services not in accordance with the Contract Documents.

11 APPROPRIATION

Notwithstanding any other term or provision of this Agreement, the continuation of this Agreement beyond a single fiscal year of County is subject to the appropriation and availability of funds in accordance with Chapter 129, Florida Statutes. Termination by the County due to non-appropriation shall be without a termination charge by Contractor. County shall not be obligated to pay Contractor under this Agreement beyond the date of termination except as set forth in this Agreement. County's obligation to pay Contractor is limited to the budgeted amount for a fiscal year approved by the Volusia County Council for the then current fiscal year of this Agreement and is otherwise limited to legally available non-ad valorem tax revenues.

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12 INDEMNIFICATION AND LIMITATION OF LIABILITY

12.1 **Indemnification.** The Contractor shall indemnify, defend and hold harmless the County, including its districts, authorities, separate units of government established by law, ordinance or resolution, partners, elected and non-elected officials, employees, agents, volunteers, and any party with whom the County has agreed by contract to provide additional insured status from and against all claims, damages, losses, and expenses, including, but not limited to attorney's fees, arising out of, resulting from, or incident to Contractor's performance of its obligations in whole or part of this Contract, unless such injury or damage is occasioned solely by the fault, negligence, or willful misconduct of the County. The duty to defend under this Section 12 is independent and separate from the duty to indemnify, and the duty to defend exists regardless of any ultimate liability of the Contractor, County and any indemnified party.

12.1.1 The duty to defend arises immediately upon presentation of a claim by any party and written notice of such claim being provided to Contractor. Contractor's obligation to indemnify and defend under this Section 12 will survive the expiration or earlier termination of this Agreement until it is determined by final judgment that an action against the County or an indemnified party for the matter indemnified hereunder is fully and finally barred by the applicable statute of limitations

12.2 In all claims against County, including its districts, authorities, separate units of government established by law, ordinance or resolution, partners, elected and non-elected officials, employees, agents, volunteers, and any party with whom the County has agreed by contract to provide additional insured status, and any employee of Contractor or anyone directly or indirectly employed by Contractor or anyone for whose acts Contractor may be held legally liable, no indemnification obligation shall be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for Contractor, or any contractor, subcontractor or sub-subcontractor thereof under Florida's Workers' Compensation acts, disability benefit acts, or other employee benefit acts.

12.3 **Sovereign Immunity**. County expressly retains all rights, benefits and immunities of sovereign immunity in accordance with Section 768.28, Florida Statutes (as amended). Notwithstanding anything set forth in any Section of this Agreement to the contrary, nothing in this Agreement shall be deemed as a waiver of immunity or limits of liability of the County beyond any statutory limited waiver of immunity or limits of liability which may have been or may be adopted by the Florida Legislature and the cap on the amount and liability of the County for damages, regardless of the number or nature of claims in tort, equity, or contract, shall not exceed the dollar amount set by the legislature for tort. Nothing in this Agreement shall inure to the benefit of any third party for the purpose of allowing any claim against the County, which claim would otherwise be barred under the doctrine of sovereign immunity or by operation of law.

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12.4 **Infringement Claim.**

12.4.1 For all Licensed Software or derivate works of the Licensed Software used by County under this Agreement, Contractor agrees to protect, defend, indemnify, and hold harmless County, its agents, elected officials and employees of County from and against any and all claims, demands, actions, and causes or action which may arise asserting that all or any part of Contractor's Licensed Software or applications that are owned and licensed by Contractor to County for use thereof by County, infringe or misappropriate any third party's patent, copyright, trademark, trade secret, or other intellectual property rights protected by law.(replaces "valid state patent, copyright, trademark, or any trade secret protected under United States law.").

12.4.2 In the event of an infringement claim, Contractor shall have the option: (i) to procure for County the right to continue using any product or service found to be infringing; (ii) to replace any such infringing product or service with a noninfringing product or service; or (iii) to modify such infringing product or service to make it non-infringing. Contractor shall have no obligation under this Section.

13 SUBCONTRACTING.

13.1 **Employment or Substitution of Subcontractors.** Contractor shall not employ any Subcontractor, other person, or organization of against whom the County may have reasonable objection, nor shall Contractor be required to employ any Subcontractor against whom it has reasonable objection. Contractor shall not make any substitution for any Subcontractor who has been accepted by the County without the County's approval.

13.2 **Disapproval of Subcontractors.** County's disapproval or requirement of removal or replacement of Contractor's employee or Subcontractor shall be deemed for lawful reasons if in County's reasonable judgment, such Contractor's employee or Subcontractor poses a threat or causes harm to the health, welfare, or safety, or morale of the County or its agencies, personnel or property or who fails any drug test administered in connection with this Agreement, or who has been convicted of a felony or a misdemeanor involving "moral turpitude" or has been released or dishonorably discharged or separated under conditions other than honorable from any of the Armed Forces of the United States.

13.3 **Contractor Responsible for Subcontractors.** Contractor shall be fully responsible for all negligent acts and omissions of its Subcontractor and of persons directly or indirectly employed by them and of persons for whose negligent acts any of them may be liable to the same extent that it is responsible for the negligent acts and omissions of persons directly employed by it. Nothing in the Agreement shall create any contractual relationship between any Subcontractor and the

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County or any obligation on the part of the County to pay or to see to the payment of any monies due any Subcontractor, except as may otherwise be required by law. County may furnish to any Subcontractor to the extent practicable, evidence of amounts paid to Contractor on account of specific Services done in accordance with the schedule of values.

13.4 **Subcontractors to Act Pursuant to this Agreement.** Contractor agrees to bind specifically every Subcontractor to the applicable terms and conditions of the Agreement for the benefit of the County, and shall require all Subcontractors or other outside associates employed in connection with this Agreement to comply fully with the terms and conditions of this Agreement as such may apply to the Services being performed for Contractor.

14 FORCE MAJEURE.

14.1 Neither party shall be liable for any failure or delay in the performance of its obligations under the Agreement to the extent such failure or delay necessarily results from the occurrence of a Force Majeure Event beyond the control or reasonable anticipation of either party, including, but not limited to, compliance with any unanticipated government law or regulation not otherwise in effect at the time of execution of this Agreement, acts of God; virus, bacterium, or other microorganism capable of inducing physical distress, illness, or disease, whether due to a pandemic or otherwise; unforeseeable governmental acts or omissions, fires, strikes, natural disasters, wars, riots, transportation problems, and/or any other unforeseeable cause whatsoever beyond the reasonable control of the parties (and such cause being referred to as a "Force Majeure Event"). Accordingly, the parties further agree that:

14.2 Upon the occurrence of Force Majeure Event, the non-performing party shall be excused from any further performance of those obligations under this Agreement that are affected by the Force Majeure Event for as long as (a) the Force Majeure Event continues; and (b) the non-performing party continues to use commercially reasonable efforts to recommence performance whenever and to whatever extent possible without delay.

14.3 Upon the occurrence of a Force Majeure Event, the non-performing party shall notify the other party of the occurrence of such event and describe in reasonable detail the effect(s) of such event upon the party's performance of its obligations and duties pursuant to this Agreement. Such notice shall be delivered or otherwise communicated to the other party within two (2) business days following the failure or delay caused by the Force Majeure Event, or as soon as possible after such failure or delay if the Force Majeure Event precludes the non-performing party from providing notice within such time period.

14.4 In the event of a Force Majeure Event, the time for performance by the parties under the applicable Statement of Work shall be extended for a period of time

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equal to the time lost by reason of such cause through execution of a change order pursuant to the terms of the Agreement.

15 INSURANCE

Contractor shall provide the required insurance detailed in Exhibit C.1and Exhibit C.3 for the entire Term of the Agreement and Exhibit C.2 during any construction phases of the Agreement. Regardless of anything submitted as proof of insurance, Contractor shall comply with all requirements of Exhibit C.1, Exhibit C.2, and Exhibit C.3.

16 SECURITY

16.1 FBI CJIS Security

16.1.1 **FBI CJIS Security Policy**. Contractor agrees to the provisions set forth in the FBI Criminal Justice Information Services (CJIS) Security Policy attached hereto as Exhibit D – FBI CJIS Security Policy, Addendum, and Acknowledgement Forms and incorporated herein as part of the Contract. In accordance with this FBI CJIS Security Policy, Contractor agrees to maintain a security program consistent with the current version of the FBI Criminal Justice Information Services (CJIS) Security Policy.

16.1.2 **Security Officer**. Throughout the term of the Contract, Contractor shall designate a Security Officer that will serve as the principal point of contact for all matters pertaining to information security and ensure compliance with the security and personnel screening requirements defined in the Contract. The County's Security Officer, at their sole discretion based on the "need to know" principle, may bypass the project lead(s) and other Contractor personnel and communicate directly with the designated Contractor Security Officer to discuss and resolve security and privacy issues and concerns.

16.1.3 **Personnel Screening**. It is acknowledged by Contractor that to fulfill obligations under the Contract, Contractor personnel may come in contact with business proprietary, personally identifiable, health care, sensitive and privileged law enforcement, and criminal justice information. Contractor is prohibited from divulging, disclosing, or providing access to information obtained as a result of the Contract to any entity or individual not so authorized by the County. Any misuse or unauthorized access of information is subject to administrative and criminal penalties. Contractor agrees at its expense to ensure that all of its personnel shall comply with the following requirements prior to providing the County with on-site or remote support under the Contract:

16.1.3.1 Submit to level 2 background screening, pursuant to Section 435.04, Florida Statutes, performed by the County that

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includes a “Florida” and “national” fingerprint-based record check.

16.1.3.2 Successfully complete an initial security awareness training course to start working under the Contract and annual security awareness refresher training thereafter. The security awareness training course shall be approved by the County and the Contractor shall provide written certification annually attesting that all its personnel working under this Contract have completed the required security awareness training.

16.1.3.3 Receive a copy of FBI CJIS Security Policy (current version) of the Contract, and execute an acknowledgement of such receipt using FBI CJIS Security Addendum Acknowledgement Form. The CJIS Security Policy CJIS Security Policy, Addendum, & Acknowledgement forms document may be found in the Key Links section of the Purchasing & Contracts page on the County of Volusia website at www.volusia.org/purchasing.

16.1.4 The Contractor is responsible for providing signed FBI CJIS Security Addendum Acknowledgement Form(s) to the County Project Manager.

16.1.5 Right of Personnel Approval: The County shall have the right to reject any personnel assigned by Contractor to provide support to the County or that will have access to County-Owned Content. Should the County elect to reject any Contractor personnel; the County will provide Contractor with a written notice that includes a basis for the rejection. Upon receipt of the notice, Contractor shall provide a timely replacement satisfactory to the County at no additional cost to the County.

16.1.6 Personnel Updates: Contractor shall immediately notify the County of terminations, reassignments, or arrests involving personnel that have previously been authorized to provide support or access County-Owned Content under the provisions of this Agreement.(s) to the County Project Manager.

17 INTELLECTUAL PROPERTY

17.1 **Warranty as to Intellectual Property Infringement**. The Contractor represents and warrants that at the time of entering into this Agreement no claims have been asserted or action or proceeding brought against the Contractor that allege that all or any part of the Software to be supplied by the Contractor or the operation or use thereof by County, infringes or misappropriates any patent, copyright, mask copyright or any trade secret or other intellectual or proprietary right of a third party, nor is the Contractor aware of any such potential claim. The Contractor also

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represents and warrants that its Services and Deliverables to be provided pursuant to this Agreement do not infringe or misappropriate any patent, copyright, mask copyright or any trade secret or other intellectual or proprietary right of a third party; provided that nothing in this section shall be construed to limit the Contractor's obligation to indemnify County pursuant to Section 12.2 hereof.

18 TERM OF AGREEMENT AND NOTICE TO PROCEED

18.1 **Term of Agreement.** The term of this Agreement shall commence when it is fully executed by all parties and shall terminate seventeen (17) years from the Final System Acceptance date defined and agreed to by both parties.

18.2 **Automatic Renewal**. The services shall be automatically extended at the end of the initial term for an additional year and on a succeeding yearly basis thereafter unless either party notifies the other, in writing, at least ninety (90) days prior to the end of the yearly period then in effect that the services shall not be extended. Additional year renewals are subject to County Council approval.

18.3 After Final System Acceptance, there shall be no limits to the County's use of the system, which shall remain absolute, regardless of whether the term of the Agreement is current or has expired, including licenses for radios, systems, and applications which shall be considered perpetual.

18.4 All Change Orders issued under this Agreement shall terminate at the expiration of the term of the Change Order, unless amended in writing by the parties, or the term of this Agreement, except if a Change Order issued before the expiration of this Agreement cannot be completed until after the expiration of this Agreement, then this Agreement shall expire on the Completion Date of said Change Order, including any amendments thereto, and after all Services under the Change Order have been approved and accepted by County's Project Manager. As such, the obligations entered therein by both parties under this Agreement and said Change Order shall remain in full force and effect until completion of all Services performed under this Agreement and/or the Change Order.

18.5 **Notice to Proceed**. "Notice to Proceed" means written notice (including a Purchase Order) issued by the Contract Administrator authorizing Contractor to proceed with providing the Deliverables and Services pursuant to this Agreement. Prior to beginning the performance of any Services, the Contractor must receive a Notice to Proceed from the Contract Administrator. Prior to the execution of this Agreement, the Contractor shall provide the County with a properly completed insurance certificate, the completion of and submittal of which is considered a condition precedent to the execution of this Agreement, the County shall issue the Notice to Proceed no later than sixty (60) County business days after the County's receipt and approval of the insurance certificate and the date that the County executes this Agreement.

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18.6 **Completion of System Implementation Timetable.**

18.6.1 The schedule for the implementation of the System shall initially be governed by the Preliminary Project Plan included in Exhibit A.2 – Ci Statement of Work, Section 9.6 and incorporated herein by this reference. The Preliminary Project Plan shall be replaced by a definitive project schedule to be known as the Project Plan to be delivered hereunder in accordance with the Statement of Work. When delivered and accepted by the County, the Project Plan shall be deemed to be incorporated herein by this reference and shall become part of this Agreement as replacement Exhibit A.4.

18.6.2 The Contractor shall not be responsible for any delay resulting from acts or omissions due to a Force Majeure Event described in Section 14.1; or County's failure to perform testing because of a Force Majeure Event or its proximate fault, to provide information or materials requested by the Contractor that are necessary for making the System ready for System Acceptance; or any material delay caused by the County preventing the Contractor for making the System ready for System Acceptance.

19 TERMINATION

19.1 County shall have the right to terminate this Agreement upon at least sixty (60) days prior written notice to Contractor if: (1) Contractor fails to meet any one or more of the terms or conditions of this Agreement set forth herein, including, without limitation, requirements for licensure; (2) Contractor breaches any other material term of this Agreement and this breach is not cured within the (30) day notice period; (3) Contractor fails to maintain liability insurance, as required; or (4) Contractor receives a determination by a government entity or review body that it has violated any law or is engaged in or is engaging in fraud, waste or abuse. Contractor shall also have the right to terminate this Agreement upon thirty (60) days prior written notice if there is a material breach by County of this Agreement and this breach is not cured within the thirty (30) day notice period.

19.2 In the event that the County terminates the Contract due to default by the Contractor or does not accept the proposed product(s) after installation due to errors, malfunctions, and/or non-performance of the Contractor (or its sub-contractor), the County shall have the right to use the product(s), without charge, until it can be replaced in accordance with the Transition Plan provisions of this solicitation.

19.3 In the event that the Contractor cannot correct Critical Failure noted by the County in the then implemented version (including updates) of the product(s), the Contractor shall replace the product or provide a “work around” within ten (10) calendar days after notification that a software or hardware correction is required. In the event that the Contractor does not keep the product(s) functioning according to specifications in accordance with the County’s sole judgment, then the County,

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at its sole option, shall have the right to return any or all of the product(s) and related technical data and terminate the Contract. The County may withhold final payments in the case that the system proves unreliable or does not perform. The County may terminate the Contract for this cause.

19.4 Contractor may terminate this Agreement upon at least one hundred eighty (180) days prior written notice to County. Termination without cause is applicable only after Final System Acceptance has occurred.

19.5 Upon receipt of notice of termination by the County from Contractor or upon delivery of notice of termination from the County to Contractor, Contractor shall:

19.5.1 Stop work under the Agreement on the date and to the extent specified in County's Notice of Termination.

19.5.2 Inform County of the extent to which performance is completed.

19.5.3 Place no further orders or subcontracts for materials, services or facilities except as may be necessary for completion of such portion of the work under the Agreement that is in progress but not yet completed.

19.5.4 Assign to the County, in the manner, at the times, and to the extent directed by the County, all of the right, title and interest of the Contractor under the orders and subcontracts so terminated.

19.6 For all undisputed outstanding invoices submitted to the County prior to the effective date of the termination and subject to Article 18 - Term of Agreement and Notice to Proceed, Article 10 – Compensation and Method of Payment, and this Article 19 - Termination, the County shall cause payments to be made to Contractor within forty five (45) days of receipt of invoice. Contractor shall invoice the County for any sums Contractor claims to be owed by County under this Agreement for work performed from the last invoice to the effective date of termination. County shall review such invoice for payment and County shall pay any undisputed amount within forty five (45) days.

19.7 With the approval of the County and to the extent required by the County, settle all outstanding liabilities and all claims arising out of such termination. County's approval of such settlements shall be final for all the purposes of a termination under this Article 19 - Termination. In addition, Contractor shall transfer title and deliver to the County, in the manner, at the times, and to the extent, if any, directed by the County of Deliverables, work-in-progress, reports, models, studies, and other materials produced as a part of, or acquired in connection with the performance of the Services terminated.

19.8 If Contractor fails to cure a breach within ten (10) calendar days after receipt of notice from the County of said breach, the County may take over the Services and

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complete the Services and Contractor shall be liable to the County for any increased cost of the Project reasonably incurred by the County to complete the Contractor's unfinished Services. As such, County may apply unpaid Compensation due and owing to the Contractor prior to the default as a set off against the costs incurred by the County for taking over such Services.

19.9 The right of termination provided to the County and the Contractor herein shall be cumulative of all other remedies available at law.

19.10 All provisions of this Agreement which imposes or contemplates continuing obligations on a party will survive the expiration or termination of this Agreement.

20 TESTING AND FINAL SYSTEM ACCEPTANCE

20.1 The Contractor shall notify the County in writing when the System is completed and ready for testing and review by the County. For purposes of this notification to the County and this section only, written notice may be also provided by email. If the County terminates this Agreement in accordance with Article 19 - Termination, the Contractor shall be paid as provided therein. Subject to Section 20.2 below, the System Acceptance testing phase shall be conducted in accordance with this Agreement and related Exhibits attached hereto.

20.2 The Contractor agrees that the System as a whole shall be inspected and tested by County. Contractor will provide to Customer at least ten (10) days notice before the acceptance tests commence. System testing will occur only in accordance with the Acceptance Test Plan. Final System Acceptance shall be evidenced by a written acknowledgement by the County Project Manager to the Contractor that the System meets all the scope of work provided for in this Agreement and Exhibits attached hereto and the acceptance criteria to be described in the final test plans as mutually agreed upon between the Contactor and the County. Final System Acceptance shall also include the delivery of all documentation, infrastructure equipment, software storage media, and other items identified in this contract.

20.3 Upon System Acceptance, the Parties will memorialize this event by promptly executing a System Acceptance Certificate. If the System Acceptance Test Plan includes separate tests for individual Subsystems or phases of the System, acceptance of the individual Subsystem or phase will occur upon the successful completion of the Acceptance Tests for the Subsystem or phase, and the Parties will promptly execute an acceptance certificate for the subsystem or phase. If the County believes the System has failed the completed Acceptance Tests, the County will provide to Contractor a written notice that includes the specific details of the failure. If Customer does not provide to Contractor a failure notice within thirty (30) days after completion of the Acceptance Tests, System Acceptance will be deemed to have occurred as of the completion of the Acceptance Tests. Minor omissions or variances in the System that do not materially impair the operation of the System as a whole will not postpone System Acceptance or Subsystem acceptance, but will be corrected according to a mutually agreed schedule.

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20.4 **Beneficial Use**. The County acknowledges that Contractor's ability to perform its implementation and testing responsibilities may be impeded if the County begins using the System before System Acceptance. Therefore, the County will not commence Beneficial Use before System Acceptance without Contractor's prior written authorization, which will not be unreasonably withheld. Contractor is not responsible for System performance deficiencies that occur during unauthorized Beneficial Use. Upon commencement of Beneficial Use, the County assumes responsibility for the use and operation of the System.

20.5 **Final Project Acceptance**. Final Project Acceptance will occur after System Acceptance when all deliverables and other work have been completed. When Final Project Acceptance occurs, the parties will promptly memorialize this final event by so indicating on the System Acceptance Certificate.

20.6 The parties acknowledge that this Agreement may not delineate every detail and minor work task required to be performed by the Contractor to complete its Services and provide the Deliverables and the System. If, during the course of the performance of the Services, the Contractor and the County determine that additional work should be performed to complete the System which, in the Contractor's opinion, is outside the level of effort originally anticipated by this Agreement, the Contractor shall notify the Contract Administrator in writing in a timely manner, with such notification being made pursuant to the notice provisions of this Agreement and serving as the Contractor's request for a Change Order. If the Contractor proceeds with said work without notifying the Contract Administrator, said work shall be deemed to be within the original level of effort, regardless of whether such work is specifically addressed in this Agreement. Notice for such additional work that is inconsistent with the Change Order requirements of this Agreement to the Contract Administrator by the Contractor shall not constitute authorization or approval by the County to perform said work. Accordingly, performance of work by the Contractor outside the originally anticipated level of effort without prior written the County approval is at the Contractor's sole risk and the County shall not be liable for payment for said additional work.

20.7 If a dispute between the Contract Administrator and the Contractor arises over whether requested services constitute additional work or services or are outside the level of effort originally anticipated by this Agreement, and such dispute cannot be resolved by the Contract Administrator and the Contractor, such dispute shall be submitted to the process prescribed in Article 24 – Dispute Resolution.

20.8 The County's Purchasing and Contracts Director or such other proper authority pursuant to the County's policies and procedures shall have the authority to approve, award, and execute all documents or other instruments required to effectuate changes, modifications, or additional service contemplated by this Article, so long as the then cumulative financial obligation of the County for such additional items does not exceed the Director of Purchasing and Contracts'

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authority under the County Code of Ordinances or policies and procedures. Any change, modification or additional service that causes the cumulative financial obligation of the County for such additional items to exceed the Purchasing Director's or the County Manager's authority under the Procurement Code shall be presented to the Volusia County Council for possible approval.

21 COUNTY DATA

21.1 Contractor agrees and understands that all files and other information and data created in connection with the administration of this Agreement constitute a public record, except to the extent it is exempt or proprietary under Florida Law (Chapter 119, Florida Statutes) from disclosure or as preempted by federal law. Contractor agrees to maintain for public record access such files and to maintain for public access such files after termination of this Contract to the extent required by the laws of the State of Florida.

21.2 Upon any termination or expiration of this Agreement, Contractor, upon County's written request, shall promptly deliver, but not more than thirty (30) days after County's request, to County an extract of any County's data hosted in XML format or such other format as mutually agreed upon by County and Contractor.

21.3 **THE ABOVE DUTIES AND OBLIGATIONS SHALL SURVIVE THE CANCELLATION OR TERMINATION OF THIS CONTRACT.**

22 DATA SECURITY

With respect to the System and environment the Contractor uses to provide services, including those for data processing, storage and transmission, the Contractor is responsible for protecting the confidentiality, integrity, and availability of County Data and agrees as follows:

22.1 **Ownership of County Data.** County is the owner of its data, data compilations and reports or compilations of its data generated from use of the supplied software ("County Data"). Notwithstanding anything to the contrary contained in this Agreement, the County shall have the right to use the Contractor's supplied software to access and have unfettered use of such data, reports, compilations, or information derived from or resulting from the use of the supplied software and/or to generate reports from such data, files or information. Contractor acknowledges and agrees that the County is the owner and custodian of said data, compilations and information whether or not such is electronically retained and regardless of the retention media and that the use of the supplied software in relation to such information or data does not in any way restrict County in the County's rights of disclosure of its data and information.

22.2 **County Proprietary Information.** It is acknowledged by Contractor that to fulfill obligations under the Contract, Contractor personnel may come in contact with

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business proprietary, personally identifiable, health care, sensitive and privileged law enforcement, and criminal justice information. Contractor is prohibited from divulging, disclosing, or providing access to information obtained as a result of the Contract to any entity or individual not so authorized by the County. Any misuse or unauthorized access of information is subject to administrative and criminal penalties.

22.2.1 The Contractor shall take necessary security measures to ensure there is no unauthorized access to County data and that the County proprietary information cannot be downloaded to or printed from any devices that its employees, contractors or subcontractors use, including, and without limitation, desktops, laptops, and USB flash drives.

22.3 **County Data.** In storing, processing, or transmitting County Data, the Contractor shall not comingle the County Data with any data from Contractor's other clients.

22.4 **Data Sanitization Requirements.** The Contractor shall certify to the County, when required, that County data is destroyed and the Contractor is not maintaining, keeping, or archiving County data. Said certification will be provided to the County Contract Manager in writing. Times this may be required during final acceptance and at Contract termination.

22.5 **Data Monetization.** The Contractor shall not profit from utilizing County data, metadata, or other County information.

22.6 **Security Operating Protocols.** The Contractor shall adhere to cybersecurity standards and best practices published by the National Institute of Standards and Technology (NIST) as applicable, and, employ generally accepted industry security methods and internal security operating protocols to prevent unauthorized access into the service the Contractor provides to the County or interception of data or communications by unauthorized individuals or unauthorized third parties. Such practices shall include, as applicable: Data Risk Management; Secure Configuration and Vulnerability Management; Access Control; encryption of data stored and transmitted using cryptographic modules validated as compliant with Federal Information Processing Standard 140-2 ; firewall protection; password protection; review of firewall logs and intrusion detection and protection systems (IDPS) notifications on a daily basis; and, update of virus definitions and security patches on an as-needed basis.

22.7 **Incident and Disaster Recovery Plans.** The Contractor shall implement and maintain, at all times, appropriate incident response and disaster and recovery plans and provide the County with updated written copies of the plans upon request. In addition, the Contractor shall provide the County with a copy of any future third party certification report(s) that review and/or certify the incident response or disaster and recovery plans when such report(s) are made available to the Contractor. Failure Scenarios and Redundant Features are described in Exhibit A.2, Section 9.2.

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22.8 Access to the County System

22.8.1 The County will permit the Contractor to have remote on-line access to designated computer systems of the County in order to facilitate the Contractor's ability to perform its obligations under this Agreement. Such access shall be used only in furtherance of the Contractor's duties under this Agreement and may not be used for any other purpose. If such access is granted, the Contractor shall give to the County the names of the Contractor's employees who have a legitimate business need for such access to the County's computer systems, and the County shall provide a separate user identification code for each person, if applicable. The Contractor shall audit all remote access used by its employees at least quarterly to ensure its employees are performing their duties in strict adherence to all security and privacy requirements under this Agreement, and shall immediately notify the County of and take immediate action to rectify any deviations. The County may revoke access at any time, and all connectivity will be in accordance with County specifications. However, Contractor will not be held responsible for any such delays resulting in access limitations.

22.8.2 The Contractor, at its own expense, shall provide and maintain any hardware, telecommunications services and software not furnished by the County which is needed to communicate reliably with the County's computer systems. The County, in its sole discretion, may terminate the Contractor's access to the County's computer network at any time. The Contractor shall ensure that: (a) computer access is limited to those employees with a legitimate business need whose names have been furnished to the County; and (b) such employees with access agree to keep any information so obtained strictly confidential, to use such information only to perform the Contractor's contract obligations to the County and to cease accessing the County's computer systems when no longer required to perform work under this Agreement.

22.8.3 The Contractor shall immediately notify the County if it becomes aware of any unauthorized access to the County's System or unauthorized use of the information on the System. Any information to which the Contractor, its officers, employees, subcontractors or agents becomes privy as a result of such access shall be deemed proprietary information and protected by the provisions of this Agreement.

22.8.4 The Contractor shall cooperate with the County in the investigation of any apparent unauthorized access by the Contractor to the County computer or electronic data storage systems or unauthorized release of the County Data by the Contractor. The Contractor warrants and agrees that its personnel will not remotely access the County's system from a networked

computer unless the network is protected from all third party networks by a firewall that is maintained with all patches up to date by qualified, trained and competent administrative staff. Said firewall must be certified by the International Computer Security Association (ICSA) (or an equivalent certification as determined by the County) if the connection to the County's network is an ongoing connection such as broadband or Metro-E.

23 NOTICES

23.1 **Notice.** All notices required under this Agreement shall be in writing and shall be sent by certified United States Mail or national parcel service, postage prepaid, return receipt requested, or by hand-delivery with a written receipt of delivery, addressed to the party for whom it is intended at the place last specified. The place for giving notice shall remain the same as set forth herein until changed in writing in the manner provided in this section. For the present, the parties designate the following:

In the case of County:	**with copies of legal notices to:**
County of Volusia Attn: Director of Purchasing & Contracts Address: 123 W. Indiana Ave., Rm. 302 DeLand, Florida 32720 Phone: 386-736-5935 **with copies of claim notices to:** **County of Volusia** Attn: Risk Management Director Address: 230 N. Woodland Blvd., Rm. 250 DeLand, Florida 32720 Phone: 386-736-5963	**County of Volusia** Attn: County Attorney Address: 123 W. Indiana Ave., Rm. 301 DeLand, Florida 32720 Phone: 386-736-5950
In the case of Contractor:	**with a copy of legal notices to:**
Communications International, Inc. Attn: Jeana Quintana, CFO Address: 4450 U.S. Highway 1 Vero Beach, FL 32967 Phone: 772.569.5355	**Communications International, Inc.** Attn: Legal Dept. Address: 4450 U.S. Highway 1 Vero Beach, FL 32967 Phone: 772.569.5355

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24 DISPUTE RESOLUTION

24.1 **Good Faith Efforts to Resolve.** The parties to this Agreement shall exercise their best efforts to negotiate and settle promptly any dispute that may arise with respect to this Agreement in accordance with the provisions set forth in this Section 24, Dispute Resolution. The Contractor and County Project Manager shall use reasonable efforts to arrange personal meetings and/or telephone conferences as needed, at mutually convenient times and places, to address and work toward resolution of issues that arise in performance of this Agreement and any applicable Scope of Work. Issues shall be escalated to successive management levels as needed.

24.2 **Informal Dispute Resolution.** If a dispute develops between the parties concerning any provision of this Agreement, or the interpretation thereof, or any conduct by the other party under these agreements, and the parties are unable to resolve such dispute within five (5) business days or longer, that party, known as the Invoking Party, through its applicable Project Manager, shall promptly bring the disputed matter to the attention of the non-Invoking Party's Project Manager or designated representative, as the case may be, of the other party in writing ("Dispute Notice") in order to resolve such dispute.

24.3 **Discovery and Negotiation / Recommended Procedures.** Upon issuance of a Dispute Notice, the Project Managers or designated representative shall furnish to each other all non-privileged information with respect to the dispute believed by them to be appropriate and germane. The Project Managers shall negotiate in an effort to resolve the dispute without the necessity of any formal proceeding. If such dispute is not resolved by the Project Managers or designated representative within five (5) County Work Days of issuance of the Dispute Notice, or such other time as may be mutually allowed by the Project Managers as being necessary given the scope and complexity of the dispute, the Project Managers may, depending upon the nature, scope, and severity of the dispute, escalate the dispute as indicated below:

County Work Days	Contractor's Representative	County Representative
10	Contractor's Project Manager	County's Project Manager
10	Contractor's COO	Director of Purchasing and Contracts
20	Contractor's CEO	Deputy County Manager

24.4 **Formal Dispute Resolution.** At any point after issuance of a Dispute Notice under this section, either party may request and initiate formal non-binding mediation before a single mediator, which mediation shall be completed within thirty (30) days of initiation or such longer time as may be agreed upon by both parties as being necessary for the mutual selection of a mediator and scheduling of such mediation. Any such mediation shall be convened and conducted in accordance with the rules of practice and procedure adopted by the Supreme Court of Florida for court-ordered mediation, Rule 1.700 et seq. of the Florida Rules of Civil Procedure, and Chapter 44, Florida Statutes. If the dispute remains unresolved after conducting such mediation, then either party may proceed to finalize any pending termination remedies and commence litigation in a court of competent jurisdiction. Each party shall bear its own costs and attorney's fees for mediation or arbitration of an issue arising under this Agreement.

24.5 **Right to Terminate Reserved.** Regardless of the dispute resolution procedures provided for in this Section 24, Dispute Resolution, nothing herein shall affect, delay, or otherwise preclude a party from terminating this Agreement in accordance with the provisions of Section 19, Termination, it being understood that these dispute resolution procedures are intended as a means of resolving disputes both during the term of this Agreement and after termination or expiration thereof.

25 LOCAL GOVERNMENT REQUIREMENTS

25.1 **Public Records Law.** Pursuant to section 119.0701(2)(a), Florida Statutes, the County is required to provide Contractor with this statement and establish the following requirements as contractual obligations pursuant to the Agreement:

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT 386-736-5935, PURCHASING@VOLUSIA.ORG, BY MAIL: PURCHASING AND CONTRACTS DIVISION, ATTN: PUBLIC RECORDS CUSTODIAN, 123 W. INDIANA AVE. RM 302 DELAND, FL 32720.

By entering into this Contract, Contractor acknowledges and agrees that any records maintained, generated, received, or kept in connection with, or related to the performance of services provided under, this Contract are public records subject to the public records disclosure requirements of section 119.07(1), Florida Statutes, and Article I, section 24 of the Florida Constitution. Pursuant to section 119.0701, Florida Statutes, any Contractor entering into a contract for services with the County is required to:

A. Keep and maintain public records required by the County to perform the services and work provided pursuant to this Contract.

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B. Upon request from the County's custodian of public records, provide the County with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes, or as otherwise provided by law.

C. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the Contract term and following completion or termination of the Contract if the Contractor does not transfer the records to the County.

D. Upon completion or termination of the Contract, keep and maintain public records required by the County to perform the service. The Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the County, upon request from the County's custodian of public records, in a format that is compatible with the information technology systems of the County.

Requests to inspect or copy public records relating to the County's Contract for services must be made directly to the County. If Contractor receives any such request, Contractor shall instruct the requestor to contact the County. If the County does not possess the records requested, the County shall immediately notify the Contractor of such request, and the Contractor must provide the records to the County or otherwise allow the records to be inspected or copied within a reasonable time.

Contractor acknowledges that failure to provide the public records to the County within a reasonable time may be subject to penalties under section 119.10, Florida Statutes. Contractor further agrees not to release any records that are statutorily confidential or otherwise exempt from disclosure without first receiving prior written authorization from the County. Contractor shall indemnify, defend, and hold the County harmless for and against any and all claims, damage awards, and causes of action arising from the Contractor's failure to comply with the public records disclosure requirements of section 119.07(1), Florida Statutes, or by Contractor's failure to maintain public records that are exempt or confidential and exempt from the public records disclosure requirements, including, but not limited to, any third party claims or awards for attorneys' fees and costs arising therefrom. Contractor authorizes County to seek declaratory, injunctive, or other appropriate relief against Contractor from a Circuit Court in Volusia County on an expedited basis to enforce the requirements of this section.

25.2 **No Code Violation or Past Due Debt.** Contractor warrants and represents that neither the business, nor any officer or significant stakeholder of the business is in violation of the Volusia County Code of Ordinances, and does not owe the County any past due debt. Any breach of the foregoing warranty and representation shall be a material breach of this Agreement and the County shall have the right to terminate this Agreement as set forth herein.

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25.3 **Changes Due to Public Welfare**. The County and Contractor agree to enter into good faith negotiations regarding modifications to this Agreement which may be required in order to implement changes in the interest of the public welfare or due to change in law or ordinance.

25.4 **Compliance with Applicable Laws**. Contractor shall perform its obligations hereunder in accordance with all applicable federal, state and local laws, ordinances, rules, regulations, and all orders and decrees of bodies or tribunals having jurisdiction or authority which in any manner affect the performance of this Agreement. Contractor shall indemnify, defend, and hold harmless the County and all its officers, agents, servants and employees against any claim or liability arising from or based on the violation of any such law, ordinance, rule, regulation, order or decree caused or committed by Contractor, its representatives, subcontractors, professional associates, agents, servants or employees. Additionally, Contractor shall obtain and maintain at its own expense all applicable licenses and permits to conduct business pursuant to this Agreement from the federal government, State of Florida, County of Volusia or municipalities when legally required and maintain same in full force and effect during the term of this Agreement.

25.5 **Drug Free Workplace.** The County of Volusia and the County courts are a drug-free and smoke-free workplace. Contractor agrees that it shall provide a drug-free environment to its personnel during the term of this Agreement and will comply, subject to the prior receipt thereof, with the County's policies on drug-free and smoke-free work place during the term of this Agreement**.**

25.6 **E-verify.** The Contractor shall utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility and work authorization status of all new employees hired by the Contractor on or after the effective date of this Contract and thereafter during the remaining term of the Contract, including Subcontractors. If and to the extent the Agreement meets the criteria set forth at 48 C.F.R. § 52.222-54(e), the criteria of 48 C.F.R. § 52.222-54 are hereby incorporated by reference into this Agreement as if fully set forth herein.

25.6.1 The Contractor covenants and agrees that if the County has a good faith belief that Contractor has knowingly violated or if Contractor is found to have violated this Section 25.6; Section 446.09(1), Florida Statutes; Section 446.095, Florida Statutes; or the presidential Executive order and subsequent Federal Acquisition Regulation (FAR) rule requiring federal contractors to use E-Verify, if applicable, then the following shall be true: (i) such shall be a material breach of this Contract by Contractor; (ii) Contractor shall indemnify, defend, and hold harmless the County from any fines or penalties levied by a government agency, including the loss or repayment of grant funds by the County; (iii) the County may terminate this Agreement immediately and without penalty and such termination shall not be or be considered a breach of this Agreement; and (iv) Contractor shall be liable for any additional costs incurred by the County as a result of the

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termination of the Agreement. Contractor acknowledges and understands that if the County terminates this Agreement in accordance with this Section 25.6, the Contractor shall be ineligible for award of a public contract for at least one (1) year after the date on which the Agreement was terminated.

25.6.2 Any subcontract entered into by Contractor with any Subcontractor performing work under this Agreement shall include the following language: "The Subcontractor shall utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the Subcontractor on or after the effective date of this Contract and thereafter during the remaining term of the Contract." In accordance with Florida law, if Contractor enters into a subcontract to perform work under this Agreement, Contractor shall require from said subcontractor an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien, and Contractor shall maintain a copy of such affidavit for the duration of this Agreement with the subcontractor, whichever is longer. Contractor acknowledges and agrees that if the County has a good faith belief that a subcontractor knowingly violated this Section 25.6 or Sections 446.09(1) or 446.095 of the Florida Statutes, but also has a good faith belief that Contractor otherwise complied with this Section 25.6 and applicable law, the County shall promptly notify the Contractor and order the Contractor to immediately terminate the contract with the subcontractor. Failure to comply with said order shall constitute a violation of this Section 25.6 and the terms of Section 25.6.1 shall apply.

25.7 **Anti-Lobbying.** To the best of the County's knowledge and belief:

25.7.1 No Federal appropriated funds have been paid or shall be paid, by or on behalf of County, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative contract, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative contract.

25.7.2 If any funds other than Federal appropriated funds have been paid or shall be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative contract, it shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

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25.8 **Safety.** The Contractor shall take the necessary precautions and bear the sole responsibility for the safety of the methods employed in performing the work. The Contractor shall at all times comply with the regulations set forth by federal, state, and local laws, rules, and regulations concerning "OSHA" and all applicable state labor laws, regulations, and standards. The Contractor shall indemnify and hold harmless the County from and against all liabilities, suits, damages, costs, and expenses (including attorney's fees and court costs) which may be imposed on the County because of the bidder, subcontractor, or supplier's failure to comply with the regulations.

25.9 **Material Safety Data Sheet.** In accordance with Chapter 442 of the Florida Statutes, it is the Contractor's responsibility to identify and to provide to the County a Material Safety Data Sheet for any material as may apply to this contract.

25.10 **Employment of Illegal Aliens**. Contractor certifies that it does not knowingly or willingly and will not during the performance of the Agreement employ illegal alien workers or otherwise violate the provisions of the Federal Immigration Reform and Control Act of 1986, as amended.

25.11 **Prohibition Against Contingent Fees.**

25.11.1 The Contractor warrants that he or she or it has not employed or retained any company or person, other than a bona fide employee working solely for the Contractor to solicit or secure this Agreement and that he or she or it has not paid or agreed to pay any person, company, corporation, individual, or firm, other than a bona fide employee working solely for the Contractor any fee, commission, compensation, percentage, gift, or other consideration contingent upon or resulting from the award or making of this Agreement. For the breach or violation of this provision, the County shall have the right to terminate this Agreement without liability and, at its sole discretion, to deduct from the Agreement price or compensation, or otherwise recover, the full amount of such fee, commission, percentage, gift, or consideration.

25.11.2 Contractor understands and acknowledges that any individual, corporation, partnership, firm, or company, other than a bona fide employee working solely for the Contractor, who offers, agrees, or contracts to solicit or secure County contracts for professional services for any other individual, company, corporation, partnership, or firm and to be paid, or is paid, any fee, commission, percentage, gift, or other consideration contingent upon, or resulting from, the award or the making of an agreement for professional services shall, upon conviction in a competent court of this State, be found guilty of a first degree misdemeanor, punishable as provided in Sections 775.082 or 775.083 of the Florida Statutes.

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25.11.3 Any County official, agent or employee who offers to solicit or secure, or solicits or secures, an agreement for professional services and to be paid, or is paid, any fee, commission, percentage, gift, or other consideration contingent upon the award or making of such an agreement for professional services between the County and any individual person, company, firm, partnership, or corporation shall, upon conviction by a court of competent authority, be found guilty of a first degree misdemeanor, punishable as provided in Sections 775.082 or 775.083 of the Florida Statues.

25.11.4 All provisions of this Agreement which impose or contemplate continuing obligations on a party shall survive the expiration or termination of this Agreement.

25.12 **Scrutinized Companies-FL Statute Section 287.135 and 215.473.**

Contractor certifies that neither the undersigned entity, nor any of its wholly owned subsidiaries, majority-owned subsidiaries, parent companies, or affiliates of such entities or business associations, that exists for the purpose of making profit have been placed on the Scrutinized Companies that Boycott Israel List created pursuant to s. 215.4725 of the Florida Statutes, or are engaged in a boycott of Israel.

In addition, if this Contract amount equals or exceeds one million dollars, Contractor certifies that neither the undersigned entity, nor any of its wholly owned subsidiaries, majority- owned subsidiaries, parent companies, or affiliates of such entities or business associations, that exists for the purpose of making profit are on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, created pursuant to s.215.473 of the Florida Statutes, or are engaged in business operations in Cuba or Syria as defined in said statute.

Contractor understands and agrees that the County may immediately terminate this Contract upon written notice if the undersigned entity (or any of those related entities of respondent as defined above by Florida law) are found to have certified falsely or if any of the following occur with respect to the company or a related entity: (i) it has been placed on the Scrutinized Companies that Boycott Israel List, or is engaged in a boycott of Israel, or (ii) for any contract for goods or services of one million dollars or more, it has been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or it is found to have been engaged in business operations in Cuba or Syria.

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26 MISCELLANEOUS

26.1 **Equal Opportunity; Disadvantaged Business Enterprises**. Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, gender, sexual orientation, age, national origin, political affiliation, disability, or family status. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, color, sex or national origin. Such action shall include, but not be limited to the following: employment, up-grading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.

26.2 **Nondiscrimination and Americans with Disabilities Act**. The Contractor shall not unlawfully discriminate against any person in the operations and activities in the use or expenditure of the funds or any portion of the funds in the provision of goods and services pursuant to this Agreement. Contractor agrees it shall affirmatively comply with all applicable provisions of the Americans with Disabilities Act (ADA) in the course of providing all goods and services funded or paid for by the County, including Titles I, II and III of the ADA (regarding nondiscrimination on the basis of disability), and all applicable regulations, guidelines, and standards. For the purposes of this Agreement, any services or products offered to the public via the internet or online must comply with Web Content Accessibility Guidelines (WCAG) 2.0 AA in order to be deemed ADA compliant. If the County, the Department of Justice or other governmental entity tasked with the enforcement of the ADA ("Enforcement Agency") notes any deficiency in the facilities, practices, services, or operations of the Contractor furnished or provided in connection with this Agreement, Contractor shall, at no additional charge or cost to the County, immediately cure any such deficiencies without delay to the satisfaction of such Enforcement Agency. Contractor further agrees that it shall, to the extent permitted by law, indemnify, defend, and hold harmless the County against any and all claims, sanctions, or penalties assessed against the County, which claims, sanctions, or penalties arise or otherwise result from Contractor's failure to comply with the ADA or WCAG 2.0 AA, for online or internet service products. In performing under this Agreement, Contractor agrees that it shall not commit an unfair employment practice in violation of any state or federal law and that it shall not discriminate against any member of the public, employee or applicant for employment for work under this Agreement because of race, color, religion, gender, sexual orientation, age, national origin, political affiliation, or disability and will take affirmative steps to ensure that applicants are employed and employees are treated during employment without regard to race, color, religion, gender, sexual orientation, age, national origin, political affiliation, disability, or family status.

26.3 **Independent Contractor.** The Contractor shall provide the services required herein strictly in an independent contractual relationship with the County and, except as expressly set forth herein, is not, nor shall be, construed to be an agent

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or employee of the County. Nothing herein shall create any association, partnership, joint venture or agency relationship between them. The County shall not provide vehicles or equipment to the Contractor to perform the duties required under this Agreement nor will the County pay for any business, travel, office, or training expense or any other Agreement performance expense not specifically set forth in the Scope of Work of this Agreement. The Contractor is not exclusively bound to the County and may provide Services or Work to other private and public entities, but agrees and covenants that any such Service provided by the Contractor to or for such entities will not conflict or otherwise interfere with the Contractor's provision of Services or Work to the County under this Agreement.

26.4 **Third Party Beneficiaries.** Neither Contractor nor County intends to directly or substantially benefit a third party by this Agreement. The Parties expressly acknowledge that it is not their intent to create any rights or obligations in any third person or entity under this Agreement. Therefore, the Parties agree that there are no third party beneficiaries to this Agreement and that no third party shall be entitled to assert a claim against either of them based upon this Agreement, except as otherwise provided in this Agreement.

26.5 **Applicable Law, Venue and Waiver of Jury Trial.** This Agreement shall be interpreted and construed in accordance with and governed by the laws of the state of Florida. Jurisdiction over and venue for any controversies or legal issues arising out of this Agreement shall, if in state court, be exclusively in the 7th Judicial Circuit in and for County of Volusia, Florida, or, if in federal court, in the Middle District of Florida, Orlando Division. By entering into this Agreement, Contractor and County hereby expressly waive any rights either party may have to a trial by jury of any civil litigation related to this Agreement, and, unless otherwise expressly provided herein, each agrees to bear its own costs and attorney's fees relating to any dispute arising under this Agreement.

26.6 **Assignment**. Contractor may not assign or otherwise convey Contractor's rights and/or obligations under this Agreement without obtaining County's prior written consent, which consent County may withhold, limit and/or condition in County's sole discretion, including, but not limited to, requiring the Contractor or his/her proposed successor in interest to post a performance bond. Any consent by the County under this Section shall be by written amendment to the Agreement in a form and substance specified by the County in its sole discretion. If Contractor desires to assign or otherwise convey its rights and/or obligations under this Agreement, Contractor shall, no less than thirty (30) days prior to the assignment's proposed effective date, provide County with a written request for County's consent. Failure to provide such notice may result in the County assessing a processing fee of Five Hundred Dollars (US $500.00); however, payment of such fee shall not entitle the Contractor to the County's acceptance or approval of its request for assignment.

Nothing herein shall preclude the right of the County to waive its rights under this

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Section but no waiver shall be granted by the County without a written and duly executed amendment to the Agreement.

26.7 **Conflicts.** Neither Contractor nor its employees shall have or hold any continuing or frequently recurring employment or contractual relationship that is substantially antagonistic or incompatible with Contractor's loyal and conscientious exercise of judgment related to its performance under this Agreement. Contractor further agrees that none of its officers or employees shall, during the term of this Agreement, serve as an expert witness against County in any legal or administrative proceeding in which he, she, or Contractor is not a party, unless compelled by court process. Further, Contractor agrees that such persons shall not give sworn testimony or issue a report or writing, as an expression of his or her expert opinion, which is adverse or prejudicial to the interests of County in connection with any such pending or threatened legal or administrative proceeding unless compelled by court process. The limitations of this section shall not preclude Contractor or any persons in any way from representing themselves, including giving expert testimony in support thereof, in any action or in any administrative or legal proceeding. In the event Contractor is permitted pursuant to this Agreement to utilize Subcontractors to perform any Services required by this Agreement, Contractor agrees to require such Subcontractors, by written Agreement, to comply with the provisions of this section to the same extent as Contractor.

26.8 **Audit Right and Retention of Records.** County shall have the right to audit the books, records, and accounts of Contractor and its Subcontractors that are related to this Agreement. Contractor and its Subcontractors shall keep such books, records, and accounts as may be necessary in order to record complete and correct entries related to the Agreement. Contractor shall preserve and make available, at reasonable times for examination and audit by County, all financial records, supporting documents, statistical records, and any other documents pertinent to this Contract for a retention period of five (5) years after completion or termination of this Contract, and any renewals, as required by Item 65, General Records Schedule GS1-SL for State and Local Government Agencies, effective February 19, 2015 and the Florida Public Records Act (Chapter 119, Florida Statutes). Contractor shall, by written contract, require its Subcontractors to agree to the requirements and obligations of this Section 26.8. Audits will be subject to applicable privacy and confidentiality laws and regulations and Contractor's privacy and confidentiality policies and procedures. All audits must be performed at Contractor's home office in Vero Beach, Florida. Nothing in this section 26.8 shall require Contractor to violate any laws applicable to Contractor as a provider of the P25 compliant 800 MHz radio system.

26.9 **Time of the Essence.** Time is of the essence for all work or Services performed throughout this Agreement.

26.10 **References to County or Contractor.** Contractor agrees that during the term of this Agreement, except as provided herein, Contractor may not reference County

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in Contractor's website, and/or press releases, and, may not place County's name and logo on Contractor's Web site or in collateral marketing materials relating to Contractor's products and Services without prior review and written approval by County. Further, Contractor agrees that it may not use County's name, logo or any trademarks (including in any press releases, customer "case studies," and the like) without County's prior written consent. Termination or expiration of this Agreement shall not affect Contractor's obligation in this regard and such obligation shall survive the termination or cancellation of this Agreement.

26.11 **Truth-in-Negotiations.** The Contractor's signature on this Agreement shall act as execution of a truth-in-negotiations certificate stating that wage rates and other factual unit costs supporting the compensation set forth in this Agreement are accurate, complete, and current at the time of contracting and that it has disclosed all obligations, debts or fees owed to the County or pending before the County prior to the execution of this Agreement.

26.12 **County's Limited Right to Transfer License.** The County can assign the Licensed Software or this Agreement to any person or entity (other than a competitor of Contractor) that assumes the County's functions as it relates to the use of the System, including but not limited to a surviving governmental entity in the event of any change in the manner or form by which the County is organized, provided that such assignment does not materially increase the scope or volume of work processed through the Licensed Software.

26.13 **Bankruptcy Rights of County.** All rights and licenses granted under or pursuant to this Agreement or any attachments hereto by Contractor to County are, and shall otherwise be deemed to be, for purposes of Section 365 (n) of the United States Bankruptcy Code (the "Code"), or replacement provision therefore, licenses to rights to "intellectual property" as defined in the Code. The parties agree that County, as licensee of such rights under this Agreement, shall retain and may fully exercise all of its rights and elections under the Code. The parties further agree that, in the event of the commencement of a bankruptcy proceeding by or against Contractor under the Code, County shall be entitled to retain all of its rights under this Agreement.

26.14 **Waiver of Breach and Materiality.** Failure to enforce any provision of this Agreement shall not be deemed a waiver of such provision or modification of this Agreement. A waiver of any breach of a provision of this Agreement shall not be deemed a waiver of any subsequent breach and shall not be construed to be a modification of the terms of this Agreement.

26.15 **Compliance with Laws / Certification of System.** Each party shall comply with all federal, state, and local laws, codes, ordinances, rules, and regulations in performing its duties, responsibilities, and obligations related to this Agreement, including the laws and regulations of the state of Florida pertaining to the provision and sale of System. Any such modifications or adjustments required or mandated by state law or regulations shall be made and the sole expense of the Contractor,

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and the County shall not under any circumstances and regardless of any provisions of this Agreement to the contrary be responsible for the costs of such modifications or adjustments.

26.16 **Severance.** In the event this Agreement or a portion of this Agreement is found by a court of competent jurisdiction to be invalid, the remaining provisions shall continue to be effective to the extent practicable unless County or Contractor elects to terminate this Agreement.

26.17 **Entire Agreement.** This Agreement contains the entire agreement between Contractor and County. Any modifications to this Agreement shall not be binding unless in writing and signed by both parties.

26.18 **Amendments.** No modification, change order, amendment, or alteration in the terms or conditions contained herein shall be effective unless contained in a written document prepared with the same or similar formality as this Agreement and executed by the award authority and Contractor.

26.19 **Prior Agreements.** This document represents the final and complete understanding of the Parties and incorporates or supersedes all prior negotiations, correspondence, conversations, agreements, and understandings applicable to the matters contained herein. The Parties agree that there is no commitment, agreement, or understanding concerning the subject matter of this Agreement that is not contained in this written document. Accordingly, the Parties agree that no deviation from the terms hereof shall be predicated upon any prior representation or agreement, whether oral or written.

27 All provisions of this Agreement which impose or contemplate continuing obligations on a party shall survive the expiration or termination of this Agreement.

[The remainder of this page has been purposefully left blank.]

Attachment: B-Volusia County Radio Contract (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County

IN WITNESS WHEREOF, the parties have made and executed this Agreement for the P25 Phase 2 Compliant Radio System, Infrastructure, and Maintenance on the date last written below.

COMMUNICATIONS INTERNATIONAL INC.

BY: _____

Name: JEANA QUINTANA

Title: CFO

Date: 6/9/21

ATTEST

BY: _____

Name: Henry F. Erfurt II

Title: Director of Accounts

Date: 6/9/2021

COUNTY OF VOLUSIA, FLORIDA

BY: _____

Name: Jeffrey S. Brower

Title: County Chair

Date: 6/22/2021

ATTEST

BY: _____

Name: George Recktenwald

Title: County Manager

Date: 6/23/2021

Council Date: 6/22/2021

Attachment: B-Volusia County Radio Contract (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County

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Attachment: C-Volusia County Radio Contract - Amendment No 2 - FULLY EXECUTED (2022-R-8 : Purchase of a P25 Radio Communications

AMENDMENT NO. 2
TO AGREEMENT FOR P25 COMPLIANT RADIO SYSTEM, INFRASTRUCTURE, AND MAINTENANCE BETWEEN COUNTY OF VOLUSIA, FLORIDA AND COMMUNICATIONS INTERNATIONAL, INC.

This Amendment No. 2 to the Agreement for P25 Compliant Radio System, Infrastructure, and Maintenance between the County of Volusia, Florida and Communications International, Inc. ("Amendment No. 2") is hereby made and entered into by and between the County of Volusia, a body corporate and politic and a political subdivision of the State of Florida, with its administrative offices at 123 West Indiana Ave, DeLand, Florida 32720 (hereinafter "**County**"), and Communications International, Inc., duly authorized to conduct business in the State of Florida, with its principle place of business at 4450 U.S. Highway 1, Vero Beach, Florida 32967 (hereinafter "**Contractor**").

WHEREAS, the County and Contractor entered into an Agreement for P25 Compliant Radio System, Infrastructure, and Maintenance (hereinafter "Agreement") with an effective date of June 23, 2021; and,

WHEREAS, the County and the Contractor amended the Agreement through Amendment No. 1 to add Exhibit A.7 – XL Connect 95 Portable Radio which detailed features of the XL Connect 95 radio replacing the XG-25P.

WHEREAS, the County and the Contractor amended the Agreement through Amendment No. 1 to replace Exhibit B.1 – Pricing with Exhibit B.1 – Pricing – Revision 1 which replaced Section 1.63b XG-25P Low Tier Portable Radio Equipment – No Encryption with Section 1.63d XL95P Portable Radio Equipment - No Encryption; replaced Section 1.63c XG-25P Low Tier Portable Radio Equipment - (Public Safety) Encrypted with Section 1.63e XL95P Portable Radio Equipment (Public Safety) Encrypted; and detailed upgrade pricing for existing radios utilized on the system.

WHEREAS, the County and the Contractor amended the Agreement through Amendment No. 1 to replace Exhibit B.2 – Milestone Payments Schedule with Exhibit B.2 – Milestone Payments Schedule – Revision 1 which corrected Milestone 4 to remove 'Paging' and a scrivener's error for the heading of Milestone 5.

WHEREAS, the County and the Contractor amended the Agreement through Amendment No. 1 to amend Section 10.1.3 to include discount pricing for products and features not specifically listed in the Agreement.

WHEREAS, the County and the Contractor desire to amend the Agreement through this Amendment No. 2 to add Exhibit A.8 – 800Mhz Radio Equipment, Repair, and Maintenance Services Scope of Work and Exhibit B.6 – Repair Pricing for service and repair of equipment not covered under warranty or a maintenance agreement.

NOW, THEREFORE, in consideration of the foregoing recitals, which are incorporated herein by reference, and other specific consideration set forth in this Amendment No. 2, the receipt and sufficiency of which are acknowledged by the Contractor and County, the parties agree to amend the Agreement as follows:

1. The parties agree that the foregoing recitals are true, correct and material to this Amendment No. 2.

2. The parties hereby amend the Agreement by adding Exhibit A.8 - 800Mhz Radio Equipment, Repair, and Maintenance Services Scope of Work, attached hereto and incorporated herein.

3. The parties hereby amend the Agreement by adding Exhibit B.6 – Repair Pricing, attached hereto and incorporated herein.

4. The parties hereby amend the Agreement by adding Section 10.1.6 to read as follows:

   10.1.6 Repair pricing for radio equipment not under warranty or a maintenance agreement is listed in Exhibit B.6. This pricing shall be valid through December 31, 2026. Thereafter, repair pricing shall be amended upon written mutual agreement between the Contractor and the County.

5. This Amendment No. 2, including any exhibits, sets forth the entire modification to the Agreement with respect to the products and services provided under this Amendment No. 2 unless the Agreement is otherwise amended or modified as set forth in the Agreement, and supersedes all prior proposals, agreements, and communications, both written and oral.

6. This Amendment No. 2 is incorporated by reference into the Agreement as if fully set forth therein. Except as provided herein, all other terms and conditions of the Agreement shall remain unchanged and in full force and effect and are hereby ratified and reaffirmed by the parties hereto. In the event of any conflict or inconsistency between the provisions set forth in this Amendment No. 2 and the Agreement, this Amendment No. 2 shall govern and control.

Electronic Signatures. Contractor acknowledges that Jeana Quintana CFO [name and title of signatory] (the "Authorized Signatory") is authorized to execute contracts/agreements on behalf of Communications International, Inc. with the County of Volusia and any affixed electronic or conformed signature of the Authorized Signatory shall be the act of and attributable to the Authorized Signatory and Communications International, Inc. By signing this Agreement electronically, the Authorized Signatory does thereby adopt the electronic or conformed signature as his or her own and designates a copy of same for use as an official record by the County of Volusia.

[The remainder of this page has been purposefully left blank.]

Attachment: C-Volusia County Radio Contract - Amendment No 2 - FULLY EXECUTED (2022-R-8 : Purchase of a P25 Radio Communications

IN WITNESS WHEREOF, the parties have made and executed this Amendment No. 2 to the Agreement for P25 Compliant Radio System, Infrastructure, and Maintenance between the County of Volusia, Florida and Communications International, Inc. on the respective dates under each signature.

COMMUNICATIONS INTERNATIONAL, INC.

By: DocuSigned by: Jeana Quintana 926DE012F801440...

Name: Jeana Quintana

Title: CFO

Date: 12/17/2021 | 13:27:44 EST

Attest: DocuSigned by: Henry Erfurt 5B176A8068FA47B...

Name: Henry Erfurt

Title: Director of Strategic Accounts

Date: 12/17/2021 | 15:19:42 EST

COUNTY OF VOLUSIA
County of Volusia, FL

By: DocuSigned by: Pam Wilsky F6F72DB40F5348...

Pamela Wilsky
Director of Purchasing and Contracts

Date: 12/17/2021 | 15:20:07 EST

Attest: DocuSigned by: 31BC8491470449...

John Duckworth
Sr. Procurement Analyst

Date: 12/17/2021 | 16:13:04 EST

Attachment: C-Volusia County Radio Contract - Amendment No 2 - FULLY EXECUTED (2022-R-8 : Purchase of a P25 Radio Communications

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EXHIBIT A.8

800MHZ RADIO EQUIPMENT, REPAIR, AND MAINTENANCE SERVICES

SCOPE OF WORK

To repair radios, provide labor, repair parts, communications and engineering services for units, not under warranty or a maintenance agreement, as required by the County.

Radio service maybe provided to the County on different brands of radio equipment to include Harris, Kenwood, Tait and Icom. Other brands and type of equipment are available on request.

Communications International, Inc. will provide professional service by request and will price such services using the pricing in Exhibit B.6.

NOTE: No extra charges of any kind shall be allowed unless specifically agreed to in writing by both parties.

Attachment: C-Volusia County Radio Contract - Amendment No 2 - FULLY EXECUTED (2022-R-8 : Purchase of a P25 Radio Communications

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EXHIBIT B.6
REPAIR PRICING

LABOR RATES
VOLUSIA COUNTY

SERVICE	PER HOUR RATE
Contract Service	$ 82.50
Overtime rate (One and One Half Contract Rate)	$ 123.75
Travel Time (Billed at Contract Rate)	$ 82.50
Project Management	$ 125.00
Site Management	$ 100.00
System Engineer	$ 125.00
IP Network Engineer	$ 125.00
IP Network Technician	$ 95.00
Clerical	$ 55.00

SERVICE	PER UNIT RATE
Mobile/Portable Radio Reprogramming	$ 34.00

Repair pricing as specified on Exhibit B.6 shall be applicable through December 31, 2026. Thereafter, rates shall be negotiated/updated by written amendment upon mutual agreement of the County and the Contractor.

Attachment: C-Volusia County Radio Contract - Amendment No 2 - FULLY EXECUTED (2022-R-8 : Purchase of a P25 Radio Communications

DocuSign

Certificate Of Completion

Envelope Id: 4376D06C50DC47D690F6D9C27D292B2F
Status: Completed
Subject: Please DocuSign: Communications International - Amendment No 2
Source Envelope:
Document Pages: 5
Signatures: 4
Certificate Pages: 5
Initials: 0
AutoNav: Enabled
EnvelopeId Stamping: Enabled
Time Zone: (UTC-05:00) Eastern Time (US & Canada)

Envelope Originator:
John Duckworth
119 W. Indiana Ave.
DeLand, FL 32720
jduckworth@volusia.org
IP Address: 74.191.71.218

Record Tracking

Status: Original
12/16/2021 2:20:32 PM
Holder: John Duckworth
jduckworth@volusia.org
Location: DocuSign

Security Appliance Status: Connected
Pool: StateLocal

Storage Appliance Status: Connected
Pool: County of Volusia
Location: DocuSign

Signer Events	Signature	Timestamp
Jeana Quintana jquintana@ask4ci.com CFO Security Level: Email, Account Authentication (None)	DocuSigned by: Jeana Quintana 926DE012F801440...	Sent: 12/16/2021 4:12:43 PM Viewed: 12/17/2021 7:43:58 AM Signed: 12/17/2021 1:27:44 PM
	Signature Adoption: Pre-selected Style Using IP Address: 68.216.35.62	
Electronic Record and Signature Disclosure: Accepted: 12/17/2021 7:43:58 AM ID: 598ab35d-1186-4008-807b-bf196ab4f3c1		
Henry Erfurt herfurt@ask4ci.com Director of Strategic Accounts Security Level: Email, Account Authentication (None)	DocuSigned by: Henry Erfurt 5B176A8068FA47B...	Sent: 12/17/2021 1:27:47 PM Viewed: 12/17/2021 3:08:32 PM Signed: 12/17/2021 3:19:42 PM
	Signature Adoption: Pre-selected Style Using IP Address: 68.216.35.62	
Electronic Record and Signature Disclosure: Accepted: 12/17/2021 3:08:32 PM ID: 358fc848-642b-400b-8b23-a1d69acc3604		
Pam Wilsky pwilsky@volusia.org Purchasing Director Volusia County Purchasing Division Security Level: Email, Account Authentication (None)	DocuSigned by: Pam Wilsky F6F72DB46FB548A...	Sent: 12/17/2021 3:19:46 PM Viewed: 12/17/2021 3:20:01 PM Signed: 12/17/2021 3:20:07 PM
	Signature Adoption: Pre-selected Style Using IP Address: 74.191.71.218	
Electronic Record and Signature Disclosure: Not Offered via DocuSign		
John Duckworth jduckworth@volusia.org Senior Purchasing Analyst Volusia County Purchasing And Contracts Division Security Level: Email, Account Authentication (None)	DocuSigned by: 31BC34911470449...	Sent: 12/17/2021 3:20:11 PM Viewed: 12/17/2021 4:12:57 PM Signed: 12/17/2021 4:13:04 PM
	Signature Adoption: Drawn on Device Using IP Address: 74.191.71.218	
Electronic Record and Signature Disclosure: Not Offered via DocuSign		

Attachment: C-Volusia County Radio Contract - Amendment No 2 - FULLY EXECUTED (2022-R-8 : Purchase of a P25 Radio Communications

In Person Signer Events	Signature	Timestamp

Editor Delivery Events	Status	Timestamp
Jennifer Ditslear jditslear@volusia.org Procurement Manager Volusia County Purchasing Division Security Level: Email, Account Authentication (None) **Electronic Record and Signature Disclosure:** Not Offered via DocuSign	VIEWED Using IP Address: 74.191.71.218	Sent: 12/16/2021 2:21:54 PM Viewed: 12/16/2021 2:34:12 PM Completed: 12/16/2021 2:38:32 PM
Pam Wilsky pwilsky@volusia.org Purchasing Director Volusia County Purchasing Division Security Level: Email, Account Authentication (None) **Electronic Record and Signature Disclosure:** Not Offered via DocuSign	VIEWED Using IP Address: 74.191.71.218	Sent: 12/16/2021 2:38:33 PM Viewed: 12/16/2021 4:11:28 PM Completed: 12/16/2021 4:12:43 PM

Agent Delivery Events	Status	Timestamp

Intermediary Delivery Events	Status	Timestamp

Certified Delivery Events	Status	Timestamp

Carbon Copy Events	Status	Timestamp

Witness Events	Signature	Timestamp

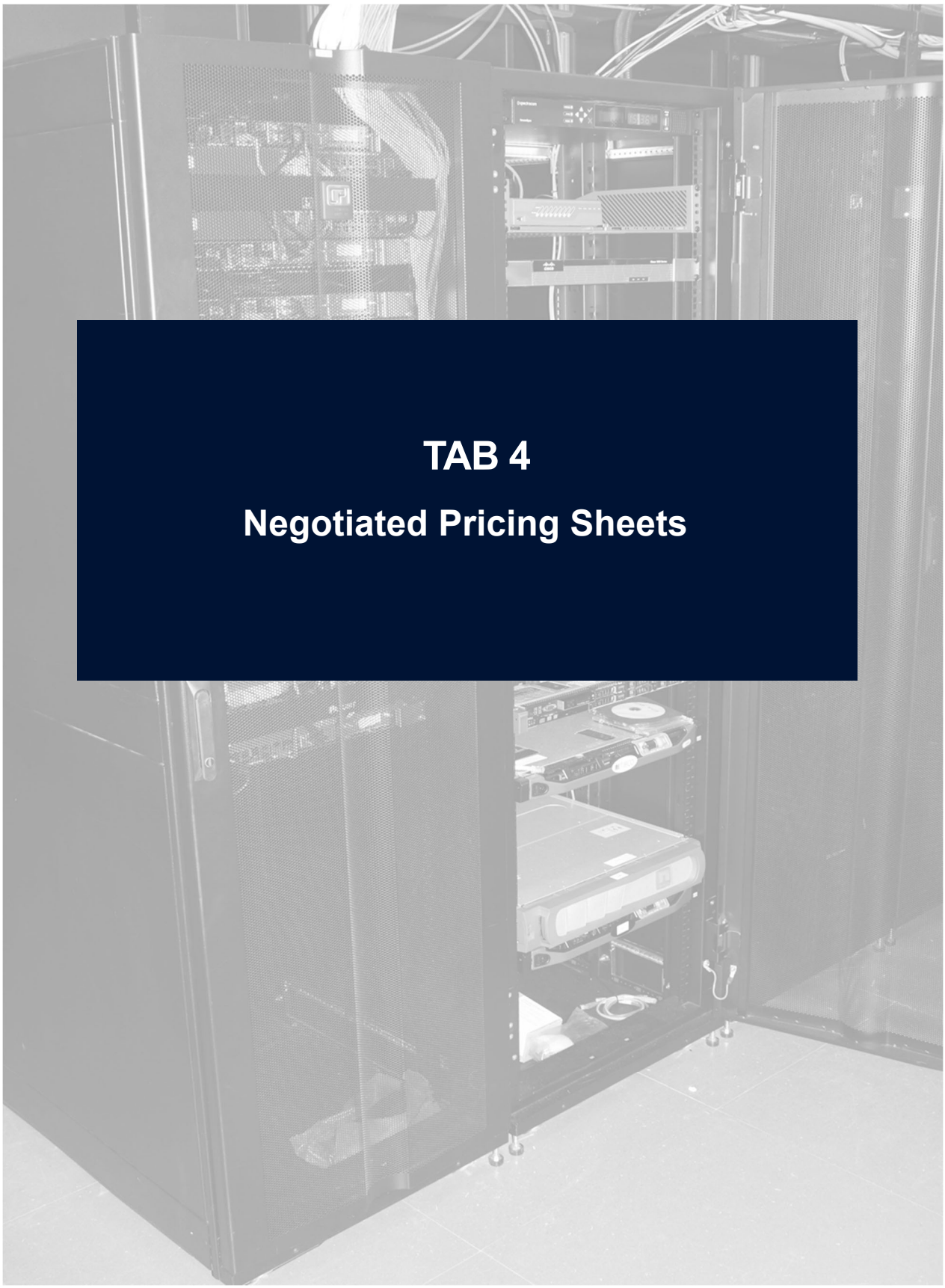
Notary Events	Signature	Timestamp

Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	12/16/2021 2:21:54 PM
Certified Delivered	Security Checked	12/17/2021 4:12:57 PM
Signing Complete	Security Checked	12/17/2021 4:13:04 PM
Completed	Security Checked	12/17/2021 4:13:04 PM

Payment Events	Status	Timestamps

Electronic Record and Signature Disclosure

Attachment: C-Volusia County Radio Contract - Amendment No 2 - FULLY EXECUTED (2022-R-8 : Purchase of a P25 Radio Communications



TAB 4

Negotiated Pricing Sheets

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

1.1Master Core Point Equipment and Services (EOSCC)

Master Core Point Site (EOSCC)			
Description	**Qty**	**Unit Cost**	**Extended Cost**
L3Harris Premier VIDA CORE Geo Location HA (Primary) *Includes:* *VIDA Premier CORE NSC VM Ware Server GeoHA* *VIDA Core Dell R640 Servers with Windows Server 2016* *License Windows Server 2016 Data Center* *Netclock GPS Master Clocks w GPS Antenna Kits* *VIDA CORE VM Software - License VMware Foundation* *VIDA CORE UNA-RNM Application* *License Sums Endpoint (72) License Sums Core (50)* *License Console (51) License Console Talkpaths (864)* *License P25 Sites (17) License P25 Talkpaths (80)* *License Conventional Interop Sites (2)* *License Conventional Talkpaths (84)* *License Transcoder (14)* *License HA Geo Location VIDA Core* *License P25 Applications Phase 1 & Phase 2* *License Quad Mode Vocoder* *License SQL Server 2016 4 Core* *License Quest Authentication Server with 6 Users* *Server Unitrends RS8006* *VM Firepower Management5 Center with 10 Clients* *Quest Defender Two Factor Authentication* *License SysLog Enterprise* *License Logging Recorder (2) w / (96 Talkpath)*	1	$1,006,500.57	$1,006,500.57
Switch, LAN, WAN Network Equipment *L3Harris VIDA Core Network Equipment* *Includes:* *Cisco Firewall ASA5506-X with SEC+/ Anycon-25USR Firewall* *ASA5508-X w Security + Firepower* *Cisco Routers ISR4331 APPX LIC* *Cisco Router C881-K9, ADV IP SVC* *Redundant Cisco Catalyst Switch 3650 24IP* *Cisco Router C1111-4P SEC* ***NOTE: Networking Equipment Included with L3HARRIS VIDA CORE Above***	1	*Included*	*Included*
P25 Phase 1 FDMA and Phase 2 TDMA Dynamically on all Channels *Phase 1 and Phase 2 is included in VIDA Premier Cores.* *No additional Hardware or Software is required*	1	*Included*	*Included*
Capacity to Support for 16,000,000 User IDs *P25 User ID range of 1 to 16,777,212 is included in the VIDA Premier Core*	1	*Included*	*Included*
Configured for 2000 Talk Groups and Capacity to Support 5000 *P25 Group ID range of 1 to 65534 is included in the VIDA Premier Core*	1	*Included*	*Included*

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Encryption Key Manager *L3Harris KMF (Key Manager Facility) Supports Over the Air Rekeying of Radios equipped with the OTAR Feature as well as Consoles and other Devices on the Network that use the AES Multi-Key Encryption*	1	$88,500.00	$88,500.00
Radio TextLink *VM Software that resides on the VIDA Core. Licensed for 10 Concurrent Terminals*	1	$35,625.00	$35,625.00
Server/Client Equipment *This equipment is included in VIDA Premier Cores.*	1	*Included*	*I*
Alarm Monitoring Equipment *Alarm Monitoring is part of the L3Harris Enhanced Enterprise Network Management and is listed under Network Control and Management.*	1	*Included*	*I*
P25 ISSI Interface (5 ports/connections) *P25 ISSI Gateway VM Software with Five (5) Remote Site Interfaces. The ISSI Gateway can support up to 8 Remote Site Connections with 25 Talkpaths*	1	$297,187.50	$297,187.50
Each Additional P25 ISSI Interface (Do not add to total) *Includes: Additional ISSI Site Interface*	1	$37,500.00	$0.00
Other Equipment (Please Specify)		*None required*	*None required*
Credit for Existing VIDA Core Licenses per 1.71			$(281,231.25)
Credit for Existing ISSI Licenses per 1.71			$(156,562.50)
Services: Installation, Engineering, Optimization, Programming	1	$86,396.12	$86,396.12
Project Management	1	$30,674.12	$30,674.12
Total Equipment and Services			**$1,107,089.56**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

1.2 Master Core Control Point Equipment and Services (EOC-A)

Geo-Redundant Master Core Site (EOC-A Control Point)			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Master Network Core Controller (Geo-Redundant) *Includes:* *VIDA Premier CORE NSC VM Ware Server Geo HA* *VIDA Core Dell R640 Servers with Windows Server 2016* *License Windows Server 2016 Data Center* *Netclock GPS Master Clocks w GPS Antenna Kits* *VIDA CORE VM Software - License VMware Foundation* *VIDA CORE UNA-RNM Application* *License Sums Endpoint (72) License Sums Core (50)* *License Console (51) License Console Talkpaths (864)* *License P25 Sites (17) License P25 Talkpaths (80)* *License Conventional Interop Sites (2)* *License Conventional Talkpaths (84)* *License Transcoder (14)* *License HA Geo Location VIDA Core* *License P25 Applications Phase 1 & Phase 2* *License Quad Mode Vocoder* *License SQL Server 2016 4 Core* *License Quest Authentication Server with 6 Users* *Server Unitrends RS8006* *VM Firepower Management5 Center with 10 Clients* *Quest Defender Two Factor Authentication* *License Radio Text Link License SysLog Enterprise* *License Logging Recorder (2) with 96 Talkpaths*	1	$259,408.42	$259,408.42
Switch, LAN, WAN Network Equipment *L3Harris VIDA Core Network Equipment* *Includes:* *Cisco Firewall ASA5506-X with SEC+/ Anycon-25USR* *Firewall ASA5508-X w Security + Firepower* *Cisco Routers ISR4331 APPX LIC* *Cisco Router C881-K9, ADV IP SVC* *Redundant Cisco Catalyst Switch 3650 24IP* *Cisco Router C1111-4P SEC* **NOTE: Networking Equipment Included with L3HARRIS VIDA CORE Above**	1	*Included*	*Included*
P25 Phase 1 FDMA and Phase 2 TDMA Dynamically on all Channels *Phase 1 and Phase 2 is included in VIDA Premier Cores. No additional Hardware or Software is required*	1	*Included*	*Included*
Capacity to Support for 16,000,000 User IDs *P25 User ID range of 1 to 16,777,212 is included in the VIDA Premier Core*	1	*Included*	*Included*
Configured for 2000 Talk Groups and Capacity to Support 5000 *P25 Group ID range of 1 to 65,534 is included in the VIDA Premier Core*	1	*Included*	*Included*

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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Encryption Key Manager *L3Harris KMF (Key Manager Facility) Supports Over the Air Rekeying of Radios equipped with the OTAR Feature as well as Consoles and other Devices on the Network that use the AES Multi-Key Encryption* *Included in Primary VIDA Core*	1	*Included*	*Included*
Radio TextLink *VM Software that resides on the VIDA Core. Licensed for 10 Concurrent Terminals Included in Primary VIDA Core*	1	*Included*	*Included*
Server/Client Equipment *This equipment is included in VIDA Premier Cores.*	1	*Included*	*Included*
Alarm Monitoring Equipment *Alarm Monitoring is part of the L3Harris Enhanced Enterprise Network Management and is listed under Network Control and Management.*	1	*Included*	*Included*
P25 ISSI Interface (5 ports/connections) *P25 ISSI Gateway VM Software with Five (5) Remote Site Interfaces. The ISSI Gateway can support up to 8 Remote Site Connections with 25 Talkpaths* *Included in Primary VIDA CORE*	5	*Included*	*Included*
Each Additional P25 ISSI Interface (Do not add to total) *Includes Additional ISSI Site Interface*	1	*Included*	*Included*
Other Equipment (Please Specify)		*None required*	*None required*
Services: Installation, Engineering, Optimization, Programming	1	$71,481.72	$71,481.72
Project Management	1	$24,539.20	$24,539.20
Total Equipment and Services			**$355,429.34**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

1.3 P25 Simulcast System A Control Equipment and Services (EOC-A)

P25 Simulcast System A Control (EOC-A Control Point) *Not Required with The L3Harris Virtualized Distributed Control Point* *Ci has Includes Three (3) Virtualized Control Points in Each Simulcast Cell*			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Simulcast System Controller		*None Required*	*None Required*
Switch, LAN, WAN Network Equipment		*None Required*	*None Required*
Simulcast System Receiver Voting		*None Required*	*None Required*
Simulcast Sync Equipment		*None Required*	*None Required*
Simulcast System Monitoring Equipment		*None Required*	*None Required*
Other Equipment (Please Specify)		*None Required*	*None Required*
Services: Installation, Engineering, Optimization, Programming		*None Required*	*None Required*
Project Management		*None Required*	*None Required*
Total Equipment and Services			**$0.00**

1.4 P25 Simulcast System A Control Equipment and Services (Orange City)

P25 Geo-Redundant Simulcast System A Control (Orange City) *Not Required with The L3Harris Virtualized Distributed Control Point* *Ci has Includes Three (3) Virtualized Control Points in Each Simulcast Cell*			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Simulcast System Controller		*None Required*	*None Required*
Switch, LAN, WAN Network Equipment		*None Required*	*None Required*
Simulcast System Receiver Voting		*None Required*	*None Required*
Simulcast Sync Equipment		*None Required*	*None Required*
Simulcast System Monitoring Equipment		*None Required*	*None Required*
Other Equipment (Please Specify)		*None Required*	*None Required*
Services: Installation, Engineering, Optimization, Programming		*None Required*	*None Required*
Project Management		*None Required*	*None Required*
Total Equipment and Services			**$0.00**

1.5 P25 Simulcast System B Control Equipment and Services (Port Orange)

P25 Simulcast System B Control (Port Orange) *Not Required with The L3Harris Virtualized Distributed Control Point* *Ci has Includes Three (3) Virtualized Control Points in Each Simulcast Cell*			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Simulcast System Controller		*None Required*	*None Required*
Switch, LAN, WAN Network Equipment		*None Required*	*None Required*
Simulcast System Receiver Voting		*None Required*	*None Required*
Simulcast Sync Equipment		*None Required*	*None Required*
Simulcast System Monitoring Equipment		*None Required*	*None Required*
Other Equipment (Please Specify)		*None Required*	*None Required*
Services: Installation, Engineering, Optimization, Programming		*None Required*	*None Required*
Project Management		*None Required*	*None Required*
Total Equipment and Services			**$0.00**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

1.6 P25 Simulcast System B Control Equipment and Services (EOC-B)

P25 Geo-Redundant Simulcast System B Control (EOC-B) *Not Required with The L3Harris Virtualized Distributed Control Point* *Ci has included Three (3) Virtualized Control Points in Each Simulcast Cell*			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Simulcast System Controller		*None Required*	*None Required*
Switch, LAN, WAN Network Equipment		*None Required*	*None Required*
Simulcast System Receiver Voting		*None Required*	*None Required*
Simulcast Sync Equipment		*None Required*	*None Required*
Simulcast System Monitoring Equipment		*None Required*	*None Required*
Other Equipment (Please Specify)		*None Required*	*None Required*
Services: Installation, Engineering, Optimization, Programming		*None Required*	*None Required*
Project Management		*None Required*	*None Required*
Total Equipment and Services			**$0.00**

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1.7 Commercial Carrier Talk Group System for Smartphones

Commercial Carrier Talk Group System for Smartphones			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Control and Server System Hardware and Software *L3Harris BeOn is a Virtualized Service that resides on the VIDA Geo Location Redundant Cores. No Additional Server Required No Charge Existing License*	1	*Included*	*Included*
System Interface Software and Licensing Costs for a quantity 1,000 smartphones that would have access to 80 total talk groups consisting of a minimum of 20 encrypted talk groups. *Includes:* *L3Harris Enterprise BeOn VM Server License and Software that will support 5000 Mobile Clients and 1000 Smartphone Applications* ***Note: Server Client Licenses are perpetual***	1	$228,000.00	$228,000.00
System Licensing Cost for additional blocks of 100 smartphones *Not Required, VM Server is licensed for 5000 Clients*		*None Required*	*None Required*
Licensing Cost for additional blocks of 10 talk groups *L3Harris does not charge for licensing per talk group*		*N/A*	*N/A*
Licensing Cost per Smartphone for Encryption *L3Harris BeOn Smartphone Applications Support the AES Encryption Standard*	130	$56.25	$7,312.50
Licensing Cost per Talk-Group for Encryption *L3Harris does not charge per group for AES encryption*		*N/A*	*N/A*
Licensing Cost for BeOn Windows Client for PC ***Includes:*** ***Server License and Software***	1	$1,312.50	$1,312.50
Switch, LAN, WAN Network Equipment *None Required part of the VIDA Geo Location Cores*		*N/A*	*N/A*
Other Equipment (Please Specify)		*N/A*	*N/A*
Services: Installation, Engineering, Optimization, Programming	1	$15,772.40	$15,772.40
Project Management	1	$6,134.80	$6,134.80
Total Equipment and Services			**$258,532.20**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

1.8 Network Control and Management System Equipment and Services

NCMS System			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Network Control and Management System *L3Harris Enhanced Enterprise Network Manager* *All in one Network Management, Monitoring & Reporting Platform for 2500 Network Devices. VM Ware resides on VIDA GEO Location Cores*	1	$73,770.00	$73,770.00
System Management/Alarm Client Terminals/Locations 1 - EOSCC IT Computer Room 1 - EOC-A Control Point 2 - Remote Access	1	$3361.46	$3,361.46
UPS System for Client Terminals *Tripplite 300 Watt UPS*	2	$111.75	$223.50
Switch, LAN, WAN Network Equipment *No Additional Equipment Required part of VIDA CORE*		*N/A*	*N/A*
NCMS Reports Module *Included with the Enhanced Enterprise Network Manager*		*Included*	*Included*
Over the Air Programming *OTAP w Terminal*	1	$10,039.48	$10,039.48
Reuse NetGuardian RTUs at Existing Remote Sites *Existing System Ci will Interface has required by the County Cost included in services below*		*Included*	*Included*
Other Equipment: Microwave Networks Inc. (MNI) *SPARCS Network Microwave Network Management System. Includes: Network health Mobile App Software License & Setup. Apple IPAD Pro 128 GB +WIFI + 4G for Network Health Mobile App*	1	$23,115.00	$23,115.00
Services: Installation, Engineering, Optimization, Programming	1	$33,279.00	$33,279.00
Project Management	1	$18,404.40	$18,404.40
Total Equipment and Services			**$162,192.84**

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1.9 EOSCC Dispatch Center Common Console Equipment and Services

EOSCC Dispatch Center Common Console Equipment			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Switch, LAN, WAN Network Equipment *None Required Co-Located with VIDA CORE*		*N/A*	*N/A*
Stand-Alone Site Controller Equipment *Not Required*		*N/A*	*N/A*
AES256 Encryption for 100 Talk Groups *AES is Encryption is a Console Function and is not Priced by the Talk Group*		*N/A*	*N/A*
Conventional Channel Gateways *6 Port Analog 4 Wire E&M VOIP Cards are included in the Nokia MPLS & MNI Microwave back haul pricing*		*N/A*	*N/A*
700/800 MHz FDMA/TDMA Control Station Radio for P25 Trunked Console Backups via Console with P25 Data, AES Multi-key Voice Encryption, Over-the-Air Rekeying, 120VAC Power Supply, Desk Microphone ***Removed 30 Backup Radios per Customer Request (EOSCC)***	4	$5,421.26	$21,685.06
Add P25 Phase 2 To Existing Backup Radios per Customer Request	30	$180.00	$5,400.00
Add OTAR to Existing Backup Radios per Customer Request	30	$428.40	$12,852.00
Add OTAP to Existing Backup Radios per Customer Request	30	$190.80	$5,724.00
Add AES Multi-Key Encryption to Existing Backup Radios per Customer Request	30	$500.40	$15,012.00
Control Station Combiner System with Dual Antennas to Support Control Station Radios *Includes:* ***DB Spectra 8 Port Control Station Combiner HC110T1-8F*** ***One*** *DB Spectra Dual Antenna DS7A06F36D-D with Mount Kits Polyphaser Surge Arrestors* *Coaxial Cable Kits, Connectors and Grounding*	1	$12,577.96	$12,577.96
Services: Installation, Engineering, Optimization, Programming	1	$35,799.14	$35,799.14
Project Management	1	$12,269.60	$12,269.60
Total Equipment and Services			**$121,319.74**

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1.10 EOSCC Primary Dispatch Center Equipment and Services

EOSCC Primary Dispatch Center			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Full-Featured Wireline Dispatch Consoles and Accessories *L3Harris Symphony Premier Bundle Dispatch Consoles* *Includes:* *Remote Baton Software Application* *Phase 1 & Phase 2 Vocoders* *Conventional Controls License* *Call Director* *Symphony Solid State Dispatch Platform* *License Remote Aux I/O* *License Send Call Alert* *Two Nano Speakers* *USB Dual Foot Switch* *Two 4 or 6 Wire Headset Jacks* *Goose Neck Microphone Kit* *Standard Keyboard* *Standard Mouse* *Call Director Feature Display port to HDMI Cable* *22" HDMI Touch Screen Monitor* ***Reuse of 30 Symphony Consoles per 1.71***	4	$42,590.20	$170,360.80
AES256 Encryption for 100 Talk Groups *AES/DES Encryption is not licensed by the Group* ***Reduction for One Console to 34 per Customer Request***	34	$6,375.00	$216,750.00
Console License Radio Check ***Reduction for One Console to 34 per Customer Request***	34	$187.50	$6,375.00
Console License Paging Capability ***Reduction for One Console to 34 per Customer Request***	34	$562.50	$19,125.00
Console License Advanced Paging Capability ***Includes Background Paging per Customer Request (Fire Only)***	4	$190.00	$760.00
Console License Discreet Listening ***Reduction for One Console to 34 per Customer Request***	34	$562.50	$19,125.00
Console License Radio Status Messaging & Enhanced Request to Talk ***Reduction for One Console to 34 per Customer Request***	34	$3,937.50	$133,875.00
Console License Radio Unit Monitoring ***Reduction for One Console to 34 per Customer Request***	34	$1,875.00	$63,750.00
Switch, LAN, WAN Network Equipment *None Required Co-Located with VIDA CORE*	1	*N/A*	*N/A*
Call Director Feature *Included in Symphony Premier Package* ***Reduction for One Console to 34 per Customer Request***	34	*Included*	*Included*

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Services: Installation, Engineering, Optimization, Programming ***Included Services for Console Feature Upgrades***	1	$360,268.80	$360,268.80
Project Management		$26,993.12	$26,993.12
Total Equipment and Services			**$1,017,382.72**

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1.11 EOSCC EOC Operations Room Console Equipment and Services

EOSCC EOC Operations Room			
Description	**Qty**	**Unit Cost**	**Extended Cost**
AES256 Encryption for 100 Talk Groups *AES/DES Encryption is not licensed by the Group*	2	$6,375.00	$12,750.00
Console License Radio Check	2	$187.50	$375.00
Console License Paging Capability	2	$562.50	$1,125.00
Console License Discreet Listening	2	$562.50	$1,125.00
Console License Radio Status Messaging & Enhanced Request to Talk	2	$3,937.50	$7,875.00
Console License Radio Unit Monitoring	2	$1,875.00	$3,750.00
Switch, LAN, WAN Network Equipment *None Required Co-Located with VIDA CORE*		*N/A*	*N/A*
Call Director Feature *Included in Symphony Premier Package*	2	*Included*	*Included*
Services: Installation, Engineering, Optimization, Programming		$33,775.20	$33,775.20
Project Management		$6,134.80	$6,134.80
Total Equipment and Services			**$66,910.00**

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1.12 49 Keyton Drive Radio Services Room Console Equipment and Services

49 Keyton Drive Radio Services Room			
Description	**Qty**	**Unit Cost**	**Extended Cost**
AES256 Encryption for 100 Talk Groups *AES/DES Encryption is not licensed by the Group*	1	$6,375.00	$6,375.00
Console License Radio Check	1	$187.50	$187.50
Console License Paging Capability	1	$562.50	$562.50
Console License Discreet Listening	1	$562.50	$562.50
Console License Radio Status Messaging & Enhanced Request to Talk	1	$3,937.50	$3,937.50
Console License Radio Unit Monitoring	1	$1,875.00	$1,875.00
Switch, LAN, WAN Network Equipment *None Required Co-Located with VIDA CORE*	1	*N/A*	*N/A*
Call Director Feature *Included in Symphony Premier Package*	1	*Included*	*Included*
Conventional Channel Gateways *6 Port Analog 4 Wire E&M VOIP Cards are included in the Nokia MPLS & MNI Microwave back haul pricing*		*N/A*	*N/A*
Services: Installation, Engineering, Optimization, Programming	1	$15,942.00	$15,942.00
Project Management	1	$4,907.84	$4,907.84
Total Equipment and Services			**$34,349.84**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

1.13 59 Keyton Drive Backup Dispatch Center Equipment and Services

59 Keyton Drive Backup Dispatch Center Equipment and Services			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Software-Based Dispatch Consoles and Accessories (County to Provide Computers and Monitors that meet Contractor specifications) *Volusia County already owns the licenses for this Console Software.* *The Latest Release of the VIP Software will be provided at No Charge*	11	*Included*	*Included*
AES256 Encryption for 100 Talk Groups *Add AES/DES Encryption to Existing VIP Software Licenses.* *L3Harris Does Not AES is not Licensed by the Group*	11	$720.00	$7,920.00
Switch, LAN, WAN Network Equipment *Includes:* *Cisco 2960 Switch*	1	$1,365.00	$1,365.00
700/800 MHz FDMA/TDMA Control Station Radio with *P25 Data, AES Multi-key Voice Encryption, OTAP, OTAR, 120VAC Power Supply, Desk Microphone*	11	$5,421.26	$59,633.91
Test and Connect to Existing Control Station Combiner *Included in Services below*	1	*Included*	*Included*
Services: Installation, Engineering, Optimization, Programming	1	$11,538.00	$11,538.00
Project Management	1	$4,907.84	$4,907.84
Total Equipment and Services			**$85,364.70**

1.14 Voice Logging Recorder System Upgrade, Integration and Services

Voice Logging Recorder System Upgrade, Integration and Services			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Logging Recorder Upgrade for P25 System *Includes:* *Exacom P25-RoIP L3Harris 64 Licenses.* *Hindsight - HSX/600 Second processor Kit* *Exacom Dual Serial Card* *Hindsight Health and Monitoring Service Supports SNMP & Email Backup Software for Hindsight* *Includes Encryption License*	1	$31,420.00	$31,420.00
Logging Recorder Integration to the P25 System *Exacom Services*	1	$4,147.13	$4,147.13
Switch, LAN, WAN Network Equipment *None Required Co-Located with Core*		*N/A*	*N/A*
AES256 Encryption Upgrade for >100 Talk Groups *Exacom P25 AES License* *Not Licensed by the Talk Group* *Included in Software Upgrade Above.*	1	*Included*	*Included*
Services: Installation, Engineering, Optimization, Programming	1	$7,102.40	$7,102.40
Project Management	1	$8,588.72	$8,588.72
Total Equipment and Services			**$51,258.25**

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1.15 P25 System A Barberville Tower Site Equipment and Services

P25 System A ~~Pierson~~ Barberville Tower Site Equipment and Services			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Site Controller *L3Harris IP Simulcast Network Sentry*	1	$15,750.00	$15,750.00
Switch, LAN, WAN Network Equipment *L3Harris IP Simulcast Network Equipment* *Includes:* *Cisco ISR4221/K9 DC Powered Router & NIM 4 Port Layer 2 GE Module* *Cisco Switch 3650-24TS-DC*	1	$22,789.46	$22,789.46
Sync Equipment *L3Harris IP Simulcast Transmit Site Common Equipment*	1	$37,027.25	$37,027.25
Conventional Channel Gateways *6 Port Analog 4 Wire E&M VOIP Cards are included in the Nokia MPLS & MNI Microwave backhaul pricing*		*N/A*	*N/A*
Trunked Base Stations *L3Harris MASTR V Linear Simulcast 800 MHZ Base Stations* *48 VDC Power Supplies.* *Configured for 14 channels*	14	$426,503.37	$426,503.37
800 MHz Antenna Systems Transmit *Includes:* *Two RFS BMR Series Antennas* *Eupen Coaxial Cable, Connectors, Grounds and Hardware.* *Two DBSpectra DSCC85-07CH4 7 Channel Ceramic Combiners with Power Monitor and DIN Output Connector.* *Two DBSpectra MWF8AM-D Transmit Bandpass Filter (Where Required)* *PolyPhaser Combiner Surge Arrestors* ***Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers per County Request and Omnicom Report***	1	$44,381.19	$44,381.19
800 MHz Antenna Systems Receive *Includes:* *RFS BMR12 Series Antenna* *DB Spectra DS7TMA17C Low Noise Tower Top Amplifier with Dual Amps and Test Port Line and Bypass Switch* *DB Spectra DSX7PDU24S-DC 24 Channel Multicoupler with PDU* *DC Powered* *Polyphaser Surge Arrestor* *Eupen Coaxial Cable, Connectors and Hardware* ***Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers per County Request and Omnicom Report***	1	$18,666.65	$18,666.65

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Tower Mount Changes *Add Three HS6 Mounts with Special Adjustable Triple Attachment Clamps & Extended Tiebacks Pipes.* *Add 280 Ft Cable & Wave Guide Ladder on East Leg of Tower* *Add Cable & Wave Guide Bridge to East Leg from Existing Bridge*	1	$20,521.00	$20,521.00
800 MHz Transmitter Power Monitoring System *Included with DB Spectra Combiners*	2	*Included*	*Included*
48VDC Battery Plant/120VAC Inverters *Eltek FP216 -48/600 DC Power Equipment with Enersys 20-year VRLA Batteries. No DC to AC Inverters are required.* *All equipment is DC Powered*	1	$39,537.31	$39,537.31
DC Power Breaker Panels *Includes:* *Newmar DST-20 Rack Mounted* *Breaker Panel Required DC Breakers*	1	$4,415.14	$4,415.14
Rerack, recabling and reconfiguration of SLERS equipment	1	$1,875.00	$1,875.00
Site Electrical Work *Install VAC Power Drops to New 48 VDC Power Plant*	1	$1,187.50	$1,187.50
Tower Crew Services- New System *Installation of New P25 Antenna Systems* ***Add Additional Tower Services***	1	$32,750.00	$32,750.00
Tower Crew Services- Old EDACS System *Removal of EDACS Antenna Systems*	1	$10,125.00	$10,125.00
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$75,238.12	$75,238.12
Project Management	1	$15,950.48	$15,950.48
Total Equipment and Services			**$766,717.47**

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1.16 P25 System A De Leon Springs Tower Site Equipment and Services

P25 System A DeLeon Springs Tower Site Equipment and Services-Redundant Control Point			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Site Controller *L3Harris IP Simulcast Network Sentry*	1	$15,750.00	$15,750.00
P25 Data Interface *L3Harris MME DC Powered Supports P25 Data-OTAR & OTAP*	1	$14,625.00	$14,625.00
Control Point *L3Harris Virtualized Distributed Simulcast Control Point-Redundant*	1	$37,500.00	$37,500.00
Switch, LAN, WAN Network Equipment *L3Harris IP Simulcast Network Equipment* *Includes:* *Cisco ISR4221/K9 DC Powered Router & NIM 4 Port Layer 2 GE Module* *Cisco Switch 3650-24TS-DC*	1	$22,789.46	$22,789.46
Sync Equipment *L3Harris IP Simulcast Transmit Site Common Equipment*	1	$37,027.25	$37,027.25
Conventional Channel Gateways *6 Port Analog 4 Wire E&M VOIP Cards are included in the Nokia MPLS & MNI Microwave back haul pricing*		*N/A*	*N/A*
Trunked Base Stations *L3Harris MASTR V Linear Simulcast 800 MHZ Base Stations 48 VDC Power Supplies.* *Configured for 14 channels*	14	$426,503.37	$426,503.37
800 MHz Antenna Systems Transmit *Includes:* *Two RFS BMR Series Antennas* *Eupen Coaxial Cable, Connectors, Grounds and Hardware.* *Two DBSpectra DSCC85-07CH4 7 Channel Ceramic Combiners with Power Monitor and DIN Output Connector.* *Two DBSpectra MWF8AM-D Transmit Bandpass Filter (Where Required)* *PolyPhaser Combiner Surge Arrestors* ***Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers per County Request and Omnicom Report***	1	$45,304.55	$45,304.55
800 MHz Antenna Systems Receive *Includes:* *RFS BMR12 Series Antenna* *DB Spectra DS7TMA17C Low Noise Tower Top Amplifier with Dual Amps and Test Port Line and Bypass Switch* *DB Spectra DSX7PDU24S-DC 24 Channel Multicoupler with PDU DC Powered* *Polyphaser Surge Arrestor* *Eupen Coaxial Cable, Connectors and Hardware* ***Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers per County Request and Omnicom Report***	1	$19,128.33	$19,128.33

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Tower Mount Changes & Modifications **Per Omnicom Report & Kirms Tower Services SOW** *Add Heavy Duty H Frame Sector Mount with 4 Antenna Pipe Mounts with Special Adjustable Triple Attachment Clamps & Extended Tiebacks Pipes.* *Add 285 Ft Cable & Wave Guide Ladder on East Leg of Tower* *Add Cable & Wave Guide Bridge to East Leg from Existing Bridge* *Add Cable Blocks with Hardware Kits to Replace Butterfly Hangers for Stacking*	1	$15,716.45	$15,716.45
800 MHz Transmitter Power Monitoring System *Included with DB Spectra Combiners*	2	*Included*	*Included*
800 MHz Test Antenna *Includes:* *DB Spectra DS8A03F36U-N Antenna* *Coaxial Surge Arrestor* *1/2 Eupen Coaxial Cable, Connectors* *1/2 Butterfly Hangers* *1/2 Ground Kits* *Antenna Mount*	1	$2,704.00	$2,704.00
48VDC Battery Plant/120VAC Inverters *Eltek FP216 -48/600 DC Power Equipment w Enersys 20-year VRLA Batteries. No DC to AC Inverters are required.* *All equipment is DC Powered*	1	$39,537.31	$39,537.31
DC Power Breaker Panels *Includes:* *Newmar DST-20 Rack Mounted* *Breaker Panel Required DC Breakers*	1	$4,415.14	$4,415.14
Site Electrical Work *Install VAC Power Drops to New 48 VDC Power Plant*	1	$1,187.50	$1,187.50
Tower Crew Services- New System *Installation of New P25 Antenna Systems* ***Add Additional Tower Services***	1	$33,087.50	$33,087.50
Tower Crew Services- Test Antenna *Installation of New P25 Test Antenna*	1	$4,500.00	$4,500.00
Tower Crew Services- Old EDACS System *Removal of EDACS Antenna Systems*	1	$10,125.00	$10,125.00
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$75,238.12	$75,238.12
Project Management	1	$15,950.48	$15,950.48
Total Equipment and Services			**$821,089.46**

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1.17 P25 System A DeLand FDOT Tower Site Equipment and Services

P25 System A DeLand FDOT Tower Site Equipment and Services			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Site Controller *L3Harris IP Simulcast Network Sentry*	1	$15,750.00	$15,750.00
Switch, LAN, WAN Network Equipment *L3Harris IP Simulcast Network Equipment Includes:* *Cisco ISR4221/K9 DC Powered Router & NIM 4 Port Layer 2 GE Module* *Cisco Switch 3650-24TS-DC*	1	$22,111.17	$22,111.17
Sync Equipment *L3Harris IP Simulcast Transmit Site Common Equipment*	1	$37,027.25	$37,027.25
Conventional Channel Gateways *6 Port Analog 4 Wire E&M VOIP Cards are included in the Nokia MPLS & MNI Microwave back haul pricing*		*N/A*	*N/A*
Trunked Base Stations *L3Harris MASTR V Linear Simulcast 800 MHZ Base Stations 48 VDC Power Supplies. Configured for 14 channels*	14	$426,503.37	$426,503.37
800 MHz Antenna Systems Transmit *Includes:* *Two RFS BMR Series Antennas* *Eupen Coaxial Cable, Connectors, Grounds and Hardware.* *Two DBSpectra DSCC85-07CH4 7 Channel Ceramic Combiners with Power Monitor and DIN Output Connector.* *Two DBSpectra MWF8AM-D Transmit Bandpass Filter (Where Required)* *PolyPhaser Combiner Surge Arrestors* ***Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers per County Request and Omnicom Report***	1	$45,084.30	$45,084.30
800 MHz Antenna Systems Receive *Includes:* *RFS BMR12 Series Antenna* *DB Spectra DS7TMA17C Low Noise Tower Top Amplifier with Dual Amps and Test Port Line and Bypass Switch* *DB Spectra DSX7PDU24S-DC 24 Channel Multicoupler with PDU DC Powered Polyphaser Surge Arrestor* *Eupen Coaxial Cable, Connectors and Hardware* ***Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers per County Request and Omnicom Report***	1	$19,043.32	$19,043.32

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

DocuSign Envelope ID: 316E69E6-6624-4FA0-84E7-B73365C142FF

Tower Mount Changes & Modifications **Per Omnicom Report & Kirms Tower Services SOW** *Install Transmit Antennas on HS6 Mounts with Special Adjustable Triple Attachment Clamps & Extended Tiebacks For Receive Antenna add HS6 Mount with Special Adjustable Triple Attachment Clamps & Extended Tiebacks Pipes. Add Cable Blocks to Replace Butterfly Hangers for Stacking*	1	$7,842.84	$7,842.84
800 MHz Transmitter Power Monitoring System *Included with DB Spectra Combiners*	2	*Included*	*Included*
800 MHz Test Antenna *Includes:* *DB Spectra DS8A03F36U-N Antenna* *Coaxial Surge Arrestor* *1/2 Eupen Coaxial Cable, Connectors* *1/2 Butterfly Hangers* *1/2 Ground Kits* *Antenna Mount*	1	$2,704.00	$2,704.00
48VDC Battery Plant/120VAC Inverters *Eltek FP216 -48/600 DC Power Equipment w Enersys 20-year VRLA Batteries. No DC to AC Inverters are required. All equipment is DC Powered*	1	$39,537.31	$39,537.31
DC Power Breaker Panels *Includes:* *Newmar DST-20 Rack Mounted* *Breaker Panel Required DC Breakers*	1	$4,415.14	$4,415.14
Site Electrical Work *Install VAC Power Drops to New 48 VDC Power Plant*	1	$1,187.50	$1,187.50
Tower Crew Services- New System *Installation of New P25 Antenna Systems*	1	$12,375.00	$12,375.00
Tower Crew Services- Test Antenna *Installation of New P25 Test Antenna*	1	$4,500.00	$4,500.00
Tower Crew Services- Old EDACS System *Removal of EDACS Antenna Systems*	1	$10,125.00	$10,125.00
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$75,238.12	$75,238.12
Project Management	1	$15,950.48	$15,950.48
Total Equipment and Services			**$739,394.80**

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1.18 P25 System A Orange City Tower Site Equipment and Services

P25 System A Orange City Tower Site Equipment and Services-Redundant Control Point			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Site Controller *L3Harris IP Simulcast Network Sentry*	1	$15,750.00	$15,750.00
P25 Data Interface *L3Harris MME DC Powered Supports P25 Data-OTAR & OTAP*	1	$14,625.00	$14,625.00
Control Point *L3Harris Virtualized Distributed Simulcast Control Point-Redundant*	1	$37,500.00	$37,500.00
Switch, LAN, WAN Network Equipment *L3Harris IP Simulcast Network Equipment Includes:* *Cisco ISR4221/K9 DC Powered Router & NIM 4 Port Layer 2 GE Module* *Cisco Switch 3650-24TS-DC*	1	$22,789.46	$22,789.46
Sync Equipment *L3Harris IP Simulcast Transmit Site Common Equipment*	1	$37,027.25	$37,027.25
Conventional Channel Gateways *6 Port Analog 4 Wire E&M VOIP Cards are included in the Nokia MPLS & MNI Microwave back haul pricing*		*N/A*	*N/A*
Trunked Base Stations *L3Harris MASTR V Linear Simulcast 800 MHZ Base Stations 48 VDC Power Supplies.* *Configured for 14 channels*	14	$426,503.37	$426,503.37
800 MHz Antenna Systems Transmit *Includes:* *Two RFS BMR Series Antennas* *Eupen Coaxial Cable, Connectors, Grounds and Hardware.* *Two DBSpectra DSCC85-07CH4 7 Channel Ceramic Combiners with Power Monitor and DIN Output Connector.* *Two DBSpectra MWF8AM-D Transmit Bandpass Filter (Where Required)* *PolyPhaser Combiner Surge Arrestors* ***Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers per County Request and Omnicom Report***	1	$45,965.29	$45,965.29
800 MHz Antenna Systems Receive *Includes:* *RFS BMR12 Series Antenna* *DB Spectra DS7TMA17C Low Noise Tower Top Amplifier with Dual Amps and Test Port Line and Bypass Switch* *DB Spectra DSX7PDU24S-DC 24 Channel Multicoupler with PDU DC Powered Polyphaser Surge Arrestor* *Eupen Coaxial Cable, Connectors and Hardware* ***Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers per County Request and Omnicom Report***	1	$19,368.31	$19,368.31

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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Tower Mount Changes & Modifications **Per Omnicom Report & Kirms Tower Services SOW** *Remove Existing H Frame. Relocate existing DB420 to New Mount.* *Replace 1/2" Jumpers & reroute to new location from Existing Coax.* *Relocate TTA and Cabling as Needed.* *Gin Pole Required for Removal & Installation at Top of Tower.* *Change Butterfly Hangers & Hardware to Cable Blocks w/ Hardware* *Add Heavy Duty H Frame Sector Mount with 4 Antenna Pipe Mounts with Special Adjustable Triple Attachment Clamps & Extended Tiebacks Pipes.* *Add HS6 Mount with Special Adjustable Triple Attachment Clamps & Extended Tie Back Pipes* *Add 350 Ft Cable & Wave Guide Ladder on East Leg of Tower* *Move Obstructions as Needed.* *Add Cable & Wave Guide Bridge to East Leg from Existing Bridge*	1	$20,181.47	$20,181.47
800 MHz Transmitter Power Monitoring System *Included with DB Spectra Combiners*	2	*Included*	*Included*
48VDC Battery Plant/120VAC Inverters *Eltek FP216 -48/600 DC Power Equipment w Enersys 20-year VRLA Batteries. No DC to AC Inverters are required. All equipment is DC Powered*	1	$39,537.31	$39,537.31
DC Power Breaker Panels *Includes:* *Newmar DST-20 Rack Mounted Breaker Panel Required DC Breakers*	1	$4,415.14	$4,415.14
Floor Reinforcement for DC Power Plants	1	$1,875.00	$1,875.00
Site Electrical Work *Install VAC Power Drops to New 48 VDC Power Plant*	1	$1,187.50	$1,187.50
Tower Crew Services- New System *Installation of New P25 Antenna Systems* ***Add Additional Tower Services per County Request and Omnicom Report***	1	$43,325.00	$43,325.00
Tower Crew Services- Old EDACS System *Removal of EDACS Antenna Systems*	1	$10,125.00	$10,125.00
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$75,238.12	$75,238.12
Project Management	1	$15,950.48	$15,950.48
Total Equipment and Services			**$831,363.70**

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1.19 P25 System A Deltona Tower Site Equipment and Services

P25 System A Deltona Tower Site Equipment and Services			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Site Controller *L3Harris IP Simulcast Network Sentry*	1	$15,750.00	$15,750.00
Switch, LAN, WAN Network Equipment *L3Harris IP Simulcast Network Equipment* *Includes:* *Cisco ISR4221/K9 DC Powered Router & NIM 4 Port Layer 2 GE Module* *Cisco Switch 3650-24TS-DC*	1	$22,111.17	$22,111.17
Sync Equipment *L3Harris IP Simulcast Transmit Site Common Equipment*	1	$37,027.25	$37,027.25
Conventional Channel Gateways *6 Port Analog 4 Wire E&M VOIP Cards are included in the Nokia MPLS & MNI Microwave back haul pricing*		*N/A*	*N/A*
Trunked Base Stations *L3Harris MASTR V Linear Simulcast 800 MHZ Base Stations* *48 VDC Power Supplies.* *Configured for 14 channels*	14	$426,503.37	$426,503.37
800 MHz Antenna Systems Transmit *Includes:* *Two RFS BMR Series Antennas* *Eupen Coaxial Cable, Connectors, Grounds and Hardware.* *Two DBSpectra DSCC85-07CH4 7 Channel Ceramic Combiners with Power Monitor and DIN Output Connector.* *Two DBSpectra MWF8AM-D Transmit Bandpass Filter (Where Required)* *PolyPhaser Combiner Surge Arrestors* ***Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers per County Request and Omnicom Report***	1	$44,028.49	$44,028.49
800 MHz Antenna Systems Receive *Includes:* *RFS BMR12 Series Antenna* *DB Spectra DS7TMA17C Low Noise Tower Top Amplifier with Dual Amps and Test Port Line and Bypass Switch* *DB Spectra DSX7PDU24S-DC 24 Channel Multicoupler with PDU DC Powered* *Polyphaser Surge Arrestor* *Eupen Coaxial Cable, Connectors and Hardware* ***Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers per County Request and Omnicom Report***	1	$18,587.87	$18,587.87

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Tower Mount Changes & Modifications **Per Omnicom Report & Kirms Tower Services SOW** *Install Transmit Antennas on HS6 Mounts with Special Adjustable Triple Attachment Clamps & Extended Tiebacks* *Replace Butterfly Hangers & Hardware with Cable Blocks w/ Hardware* *For Receive Antenna add HS6 Mount with Special Adjustable Triple Attachment Clamps & Extended Tiebacks Pipes.*	1	$8,838.75	$8,838.75
800 MHz Transmitter Power Monitoring System *Included with DB Spectra Combiners*	2	*Included*	*Included*
800 MHz Test Antenna *Includes:* *DB Spectra DS8A03F36U-N Antenna* *Coaxial Surge Arrestor* *1/2 Eupen Coaxial Cable, Connectors* *1/2 Butterfly Hangers* *1/2 Ground Kits* *Antenna Mount*	1	$2,704.00	$2,704.00
48VDC Battery Plant/120VAC Inverters *Eltek FP216 -48/600 DC Power Equipment w Enersys 20-year VRLA Batteries.* *No DC to AC Inverters are required.* *All equipment is DC Powered*	1	$39,537.31	$39,537.31
DC Power Breaker Panels *Includes:* *Newmar DST-20 Rack Mounted Breaker Panel* *Required DC Breakers*	1	$4,415.14	$4,415.14
Site Electrical Work *Install VAC Power Drops to New 48 VDC Power Plant*		$1,187.50	$1,187.50
Tower Crew Services- New System *Installation of New P25 Antenna Systems*	1	$13,350.00	$13,350.00
Tower Crew Services- Test Antenna *Installation of New P25 Test Antenna*	1	$4,500.00	$4,500.00
Tower Crew Services- Old EDACS System *Removal of EDACS Antenna Systems*	1	$10,125.00	$10,125.00
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$75,238.12	$75,238.12
Project Management	1	$15,950.48	$15,950.48
Total Equipment and Services			**$739,854.45**

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1.20 P25 System A DeBary Tower Site Equipment and Services

P25 System A DeBary Tower Site Equipment and Services			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Site Controller *L3Harris IP Simulcast Network Sentry*	1	$15,750.00	$15,750.00
Switch, LAN, WAN Network Equipment *L3Harris IP Simulcast* *Network Equipment Includes:* *Cisco ISR4221/K9 DC Powered Router & NIM 4 Port Layer 2 GE Module* *Cisco Switch 3650-24TS-DC*	1	$22,111.17	$22,111.17
Sync Equipment *L3Harris IP Simulcast Transmit Site Common Equipment*	1	$37,027.25	$37,027.25
Conventional Channel Gateways *6 Port Analog 4 Wire E&M VOIP Cards are included in the Nokia MPLS & MNI Microwave back haul pricing*		*N/A*	*N/A*
Trunked Base Stations *L3Harris MASTR V Linear Simulcast 800 MHZ Base Stations 48 VDC Power Supplies.* *Configured for 14 channels*	14	$426,503.37	$426,503.37
800 MHz Antenna Systems Transmit *Includes:* *Two Sinclair SE4192 Series Antennas* *Eupen Coaxial Cable, Connectors, Grounds and Hardware.* *One DBSpectra DSCC85-10CH4 10 Channel Ceramic Combiner with Power Monitor and DIN Output Connector.* *One DBSpectra DSCC85-09CH4 9 Channel Ceramic Combiner with Power Monitor and DIN Output Connector* *Two DBSpectra MWF8AM-D 800 MHz Bandpass Filter (Where Required)* *PolyPhaser Combiner Surge Arrestors* *(NOTE: Antenna System Shared with 5 Channel PSIC Equipment)* ***Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers per County Request and Omnicom Report***	1	$46,181.32	$46,181.32
800 MHz Antenna Systems Receive *Includes:* *Sinclair SE4192 Series Antenna* *DB Spectra DS7TMA17C Low Noise Tower Top Amplifier with Dual Amps and Test Port* *Line and Bypass Switch* *DB Spectra DSX7PDU24S-DC 24 Channel Multicoupler with PDU DC Powered* *Polyphaser Surge Arrestor* *Eupen Coaxial Cable, Connectors and Hardware* *(NOTE: Antenna System Shared with 5 Channel PSIC Equipment)* ***Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers per County Request and Omnicom Report***	1	$16,923.12	$16,923.12

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Tower Mount Changes & Modifications **Per Omnicom Report & Kirms Tower Services SOW** *Remove Existing Antennas, Brackets, TTA's and Associated Cabling on Top of Tower* *Change Heavy Duty Mounts to HS6 Mounts with Special Adjustable Triple Attachment Clamps & Extended Tie Backs* *Change Butterfly Hangers & Hardware to Cable Blocks w/ Hardware*	1	$8,013.25	$8,013.25
800 MHz Transmitter Power Monitoring System *Included with DB Spectra Combiners*	2	*Included*	*Included*
800 MHz Test Antenna *Includes:* *DB Spectra DS8A03F36U-N Antenna* *Coaxial Surge Arrestor* *1/2 Eupen Coaxial Cable, Connectors* *½ Butterfly Hangers* *½ Ground Kits* *Antenna Mount*	1	$2,704.00	$2,704.00
48VDC Battery Plant/120VAC Inverters *Eltek FP216 -48/600 DC Power Equipment with Enersys 20-year VRLA Batteries. No DC to AC Inverters are required.* *All equipment is DC Powered*	1	$39,537.31	$39,537.31
DC Power Breaker Panels *Includes:* *Newmar DST-20 Rack Mounted Breaker Panel Required DC Breakers*	1	$4,415.14	$4,415.14
Site Electrical Work *Install VAC Power Drops to New 48 VDC Power Plant*	1	$1,187.50	$1,187.50
Tower Crew Services- New System *Installation of New P25 Antenna Systems* ***Add Additional Tower Services per County Request and Omnicom Report***	1	$20,562.50	$20,562.50
Tower Crew Services- Test Antenna *Installation of New P25 Test Antenna*	1	$4,500.00	$4,500.00
Tower Crew Services- Old EDACS System *Removal of EDACS Antenna Systems*	1	$10,125.00	$10,125.00
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$75,238.12	$75,238.12
Project Management	1	$15,950.48	$15,950.48
Total Equipment and Services			**$746,729.53**

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1.21 P25 System A EOC-A Tower Site Equipment and Services

P25 System A EOC-A Tower Site Equipment and Services-Primary Control Point			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Site Controller *L3Harris IP Simulcast Network Sentry*	1	$15,750.00	$15,750.00
P25 Data Interface *L3Harris MME DC Powered Supports P25 Data-OTAR & OTAP*	1	$14,625.00	$14,625.00
Control Point *L3Harris Virtualized Distributed Simulcast Control Point-Redundant*	1	$75,000.00	$75,000.00
Switch, LAN, WAN Network Equipment *L3Harris IP Simulcast Network Equipment* *Includes:* *Cisco ISR4221/K9 DC Powered Router & NIM 4 Port Layer 2 GE Module* *Cisco Switch 3650-24TS-DC*	1	$22,789.46	$22,789.46
Sync Equipment *L3Harris IP Simulcast Transmit Site Common Equipment*	1	$37,027.25	$37,027.25
Conventional Channel Gateways *6 Port Analog 4 Wire E&M VOIP Cards are included in the Nokia MPLS & MNI Microwave back haul pricing*		*N/A*	*N/A*
Trunked Base Stations *L3Harris MASTR V Linear Simulcast 800 MHZ Base Stations 48 VDC Power Supplies.* *Configured for 14 channels*	14	$426,503.37	$426,503.37
800 MHz Antenna Systems Transmit *Includes:* *Two RFS BMR Series Antennas* *Eupen Coaxial Cable, Connectors, Grounds and Hardware.* *Two DBSpectra DSCC85-07CH4 7 Channel Ceramic Combiners with Power Monitor and DIN Output Connector.* *Two DBSpectra MWF8AM-D 800 MHZ Bandpass Filter (Where Required)* *PolyPhaser Combiner Surge Arrestors* ***Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers per County Request and Omnicom Report***	1	$45,634.92	$45,634.92
800 MHz Antenna Systems Receive *Includes:* *RFS BMR12 Series Antenna* *DB Spectra DS7TMA17C Low Noise Tower Top Amplifier with Dual Amps and Test Port Line and Bypass Switch* *DB Spectra DSX7PDU24S-DC 24 Channel Multicoupler w PDU DC Powered* *Polyphaser Surge Arrestor* *Eupen Coaxial Cable, Connectors and* ***Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers per County Request and Omnicom Report***	1	$19,210.72	$19,210.72

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Tower Mount Changes & Modifications **Per Omnicom Report & Kirms Tower Services SOW** *Add Heavy Duty H Frame Sector Mount with 4 Antenna Pipe Mounts with Special Adjustable Triple Attachment Clamps & Extended Tiebacks Pipes.* *Remove Existing DB810 Antenna & Mount. Relocate Antenna to HS6 Mount. Replace 1/2 Jumper & Reroute to existing Coax.* *Change Heavy Duty Mounts to HS6 Mount with Special Adjustable Triple Attachment Clamps & Extended Tie Backs* *Change Butterfly Hangers & hardware to Cable Blocks w Hardware*	1	$9,433.40	$9,433.40
800 MHz Transmitter Power Monitoring System *Included with DB Spectra Combiners*	1	*Included*	*Included*
800 MHz Test Antenna *Includes:* *DB Spectra DS8A03F36U-N Antenna* *Coaxial Surge Arrestor* *½ Eupen Coaxial Cable, Connectors* *½ Butterfly Hangers* *½ Ground Kits* *Antenna Mount*	1	$2,704.00	$2,704.00
48VDC Battery Plant/120VAC Inverters *Eltek FP216 -48/600 DC Power Equipment with Enersys 20-year VRLA Batteries.* *No DC to AC Inverters are required.* *All equipment is DC Powered*	1	$39,537.31	$39,537.31
DC Power Breaker Panels *Includes:* *Newmar DST-20 Rack Mounted Breaker Panel Required DC Breakers*	1	$4,415.14	$4,415.14
Site Electrical Work *Install VAC Power Drops to New 48 VDC Power Plant*	1	$1,187.50	$1,187.50
Tower Crew Services- New System *Installation of New P25 Antenna Systems* ***Add Additional Tower Services per County Request and Omnicom Report***	1	$23,600.00	$23,600.00
Tower Crew Services- Test Antenna *Installation of New P25 Test Antenna*	1	$4,500.00	$4,500.00
Tower Crew Services- Old EDACS System *Removal of EDACS Antenna Systems*	1	$10,125.00	$10,125.00
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$75,238.12	$75,238.12
Project Management	1	$15,950.48	$15,950.48
Total Equipment and Services			**$843,231.67**

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1.22 P25 System A Lake Harney Tower Site Equipment and Services

P25 System A Lake Harney Tower Site Equipment and Services			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Site Controller *L3Harris IP Simulcast Network Sentry*	1	$15,750.00	$15,750.00
Switch, LAN, WAN Network Equipment *L3Harris IP Simulcast Network Equipment Includes:* *Cisco ISR4221/K9 DC Powered Router & NIM 4 Port Layer 2 GE Module* *Cisco Switch 3650-24TS-DC*	1	$22,111.17	$22,111.17
Sync Equipment *L3Harris IP Simulcast Transmit Site Common Equipment*	1	$37,027.25	$37,027.25
Conventional Channel Gateways *6 Port Analog 4 Wire E&M VOIP Cards are included in the Nokia MPLS & MNI Microwave back haul pricing*		*N/A*	*N/A*
Trunked Base Stations *L3Harris MASTR V Linear Simulcast 800 MHZ Base Stations 48 VDC Power Supplies.* *Configured for 14 channels*	14	$426,503.37	$426,503.37
800 MHz Antenna Systems Transmit *Includes:* *Two RFS BMR Series Antennas* *Eupen Coaxial Cable, Connectors, Hangers, Grounds and Hardware.* *Two DBSpectra DSCC85-07CH4 7 Channel Ceramic Combiners with Power Monitor and DIN Output Connector.* *Two DBSpectra MWF8AM-D 800 MHZ Bandpass Filter (Where Required) Heavy Duty Type Antenna Mounts* *PolyPhaser Combiner Surge Arrestors*	1	$46,584.58	$46,584.58
800 MHz Antenna Systems Receive *Includes:* *RFS BMR12 Series Antenna* *DB Spectra DS7TMA17C Low Noise Tower Top Amplifier with Dual Amps and Test Port Line and Bypass Switch* *DB Spectra DSX7PDU24S-DC 24 Channel Multicoupler w PDU DC Powered* *Polyphaser Surge Arrestor* *Eupen Coaxial Cable, Connectors and Hardware Heavy Duty Antennas Mounts*	1	$22,344.95	$22,344.95
800 MHz Transmitter Power Monitoring System *Included with DB Spectra Combiners*	1	*Included*	*Included*
800 MHz Test Antenna *Includes:* *DB Spectra DS8A03F36U-N Antenna* *Coaxial Surge Arrestor* *½ Eupen Coaxial Cable, Connectors* *½ Butterfly Hangers* *½ Ground Kits* *Antenna Mount*	1	$2,704.00	$2,704.00

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48VDC Battery Plant/120VAC Inverters *Eltek FP216 -48/600 DC Power Equipment with Enersys 20-year VRLA Batteries.* *No DC to AC Inverters are required.* *All equipment is DC Powered*	1	$39,537.31	$39,537.31
DC Power Breaker Panels *Includes:* *Newmar DST-20 Rack Mounted* *Breaker Panel Required DC Breakers*	1	$4,415.14	$4,415.14
Site Electrical Work *Install VAC Power Drops to New 48 VDC Power Plant*	1	$1,187.50	$1,187.50
Power Line Surge Suppression *Includes:* *APT TE01XAS15E1XD-W2 Type 1* *SPD Main Panel APT TE01XD104XA-* *W2 Type 1 SPD Load Panel* *Square D 240 VAC Circuit* *Breakers for SPD Surge* *Suppression for non-AC* *Devices* *Installation by Electrical Contractor*	1	$6,816.20	$6,816.20
Tower Crew Services- New System *Installation of New P25 Antenna Systems*	1	$13,950.00	$13,950.00
Tower Crew Services- Test Antenna *Installation of New P25 Test Antenna*	1	$4,500.00	$4,500.00
Tower Crew Services- Old EDACS System *Removal of EDACS Antenna Systems*	1	$0.00	$0.00
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$75,238.12	$75,238.12
Project Management	1	$28,220.08	$28,220.08
Total Equipment and Services			**$746,889.67**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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1.23 P25 System B Ormond Beach Tower Site Equipment and Services

P25 System B Ormond Beach Tower Site Equipment and Services			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Site Controller *L3Harris IP Simulcast Network Sentry*	1	$15,750.00	$15,750.00
Switch, LAN, WAN Network Equipment *L3Harris IP Simulcast Network Equipment* *Includes:* *Cisco ISR4221/K9 DC Powered Router & NIM 4 Port Layer 2 GE Module* *Cisco Switch 3650-24TS-DC*	1	$22,789.46	$22,789.46
Sync Equipment *L3Harris IP Simulcast Transmit Site Common Equipment*	1	$37,027.25	$37,027.25
Conventional Channel Gateways *6 Port Analog 4 Wire E&M VOIP Cards are included in the Nokia MPLS & MNI Microwave back haul pricing*		*N/A*	*N/A*
Trunked Base Stations *L3Harris MASTR V Linear Simulcast 800 MHZ Base Stations* *48 VDC Power Supplies.* *Configured for 16 channels*	16	$481,610.39	$481,610.39
800 MHz Antenna Systems Transmit *Includes:* *Two RFS BMR Series Antennas* *Eupen Coaxial Cable, Connectors, Grounds and Hardware.* *Two DBSpectra DSCC85-08CH4 8 Channel Ceramic Combiners with Power Monitor and DIN Output Connector.* *DBSpectra MWF8AM-D 800 MHz Bandpass Filter (Where Required)* *PolyPhaser Combiner Surge Arrestors* ***Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers per County Request and Omnicom Report***	1	$46,301.76	$46,301.76
800 MHz Antenna Systems Receive *Includes:* *RFS BMR12 Series Antenna* *DB Spectra DS7TMA17C Low Noise Tower Top Amplifier with Dual Amps and Test Port Line and Bypass Switch* *DB Spectra DSX7PDU24S-DC 24 Channel Multicoupler with PDU DC Powered Polyphaser Surge Arrestor* *Eupen Coaxial Cable, Connectors and Hardware* ***Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers per County Request and Omnicom Report***	1	$18,770.31	$18,770.31

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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Tower Mount Changes & Modifications **Per Omnicom Report & Kirms Tower Services SOW** *Add Heavy Duty H Frame Sector Mount with 4 Antenna Pipe Mounts with Special Adjustable Triple Attachment Clamps & Extended Tiebacks Pipes. Move Obstructions as Required* *Change Butterfly Hangers & Hardware to Cable Blocks with Hardware* *Add 250 Ft Cable & Wave Guide Ladder on East Leg of Tower Move Obstructions as Needed.* *Add Cable & Wave Guide Bridge to East Leg from Existing Bridge*	1	$17,223.68	$17,223.68
800 MHz Transmitter Power Monitoring System *Included with DB Spectra Combiners*	1	*Included*	*Included*
800 MHz Test Antenna *Includes:* *DB Spectra DS8A03F36U-N Antenna* *Coaxial Surge Arrestor* *½ Eupen Coaxial Cable, Connectors* *½ Butterfly Hangers* *½ Ground Kits* *Antenna Mount*	1	$2,704.00	$2,704.00
48VDC Battery Plant/120VAC Inverters *Eltek FP216 -48/600 DC Power Equipment w Enersys 20-year VRLA Batteries. No DC to AC Inverters are required.* *All equipment is DC Powered*	1	$39,537.31	$39,537.31
DC Power Breaker Panels *Includes* *Newmar DST-20 Rack Mounted* *Breaker Panel Required DC Breakers*	1	$4,415.14	$4,415.14
Site Electrical Work Install VAC Power Drops to New 48 VDC Power Plant	1	$1,187.50	$1,187.50
Tower Crew Services- New System *Installation of New P25 Antenna Systems* ***Add Additional Tower Services***	1	$31,550.00	$31,550.00
Tower Crew Services- Test Antenna *Installation of New P25 Test Antenna*	1	$4,500.00	$4,500.00
Tower Crew Services- Old EDACS System *Removal of EDACS Antenna Systems*	1	$10,125.00	$10,125.00
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$75,238.12	$75,238.12
Project Management	1	$15,950.48	$15,950.48
Total Equipment and Services			**$824,680.40**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

1.24 P25 System B EVAC Tower Site Equipment and Services

P25 System B EVAC Tower Site Equipment and Services-Redundant Control Point			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Site Controller *L3Harris IP Simulcast Network Sentry*	1	$15,750.00	$15,750.00
P25 Data Interface *L3Harris MME DC Powered Supports P25 Data-OTAR & OTAP*	1	$14,625.00	$14,625.00
Control Point *L3Harris Virtualized Distributed Simulcast Control Point-Redundant*	1	$37,500.00	$37,500.00
Switch, LAN, WAN Network Equipment *L3Harris IP Simulcast Network Equipment* *Includes:* *Cisco ISR4221/K9 DC Powered Router & NIM 4 Port Layer 2 GE Module* *Cisco Switch 3650-24TS-DC*	1	$22,789.46	$22,789.46
Sync Equipment *L3Harris IP Simulcast Transmit Site Common Equipment*	1	$37,027.25	$37,027.25
Conventional Channel Gateways *6 Port Analog 4 Wire E&M VOIP Cards are included in the Nokia MPLS & MNI Microwave back haul pricing*	1	*N/A*	*N/A*
Trunked Base Stations *L3Harris MASTR V Linear Simulcast 800 MHZ Base Stations* *48 VDC Power Supplies.* *Configured for 16 channels*	16	$481,610.39	$481,610.39
800 MHz Antenna Systems Transmit *Includes:* *Two RFS BMR Series Antennas* *Eupen Coaxial Cable, Connectors, Grounds and Hardware.* *Two DBSpectra DSCC85-08CH4 8 Channel Ceramic Combiners with Power Monitor and DIN Output Connector.* *DBSpectra MWF8AM-D 800 MHz Bandpass Filter (Where Required)* *PolyPhaser Combiner Surge Arrestors* ***Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers per County Request and Omnicom Report***	1	$44,271.42	$44,271.42
800 MHz Antenna Systems Receive *Includes:* *RFS BMR12 Series Antenna* *DB Spectra DS7TMA17C Low Noise Tower Top Amplifier with Dual Amps and Test Port Line and Bypass Switch* *DB Spectra DSX7PDU24S-DC 24 Channel Multicoupler with PDU DC Powered Polyphaser Surge Arrestor* *Eupen Coaxial Cable, Connectors and Hardware* ***Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers per County Request and Omnicom Report***	1	$17,411.17	$17,411.17

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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Tower Mount Changes & Modifications **Per Omnicom Report & Kirms Tower Services SOW** *Remove Existing H Frame on Top of Tower with Gin Pole* *Change Butterfly Hangers & Hardware to Cable Blocks with Hardware* *Change Heavy Duty Mounts to HS6 with Special Adjustable Triple Attachment Clamps & Extended Tiebacks Pipes.*	1	$13,470.56	$13,470.56
800 MHz Transmitter Power Monitoring System *Included with DB Spectra Combiners*	2	*Included*	*Included*
48VDC Battery Plant/120VAC Inverters *Eltek FP216 -48/600 DC Power Equipment w Enersys 20-year VRLA Batteries. No DC to AC Inverters are required.* *All equipment is DC Powered*	1	$39,537.31	$39,537.31
DC Power Breaker Panels *Includes:* *Newmar DST-20 Rack Mounted* *Breaker Panel Required DC Breakers*	1	$4,415.14	$4,415.14
Floor Reinforcement for DC Power Plants *None Required*	1	$0.00	$0.00
Site Electrical Work *Install VAC Power Drops to New 48 VDC Power Plant*	1	$1,187.50	$1,187.50
Tower Crew Services- New System *Installation of New P25 Antenna Systems* ***Add Additional Tower Services per County Request and Omnicom Report***	1	$18,040.00	$18,040.00
Tower Crew Services- Old EDACS System *Removal of EDACS Antenna Systems*	1	$10,125.00	$10,125.00
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$75,238.12	$75,238.12
Project Management	1	$15,950.48	$15,950.48
Total Equipment and Services			**$848,948.80**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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1.25 P25 System B EOC-B Tower Site Equipment and Services

P25 System B EOC-B Tower Site Equipment and Services-Redundant Control Point			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Site Controller *L3Harris IP Simulcast Network Sentry*	1	$15,750.00	$15,750.00
P25 Data Interface *L3Harris MME DC Powered Supports P25 Data-OTAR & OTAP*	1	$14,625.00	$14,625.00
Control Point *L3Harris Virtualized Distributed Simulcast Control Point-Redundant*	1	$37,500.00	$37,500.00
Switch, LAN, WAN Network Equipment *L3Harris IP Simulcast Network Equipment* *Includes:* *Cisco ISR4221/K9 DC Powered Router & NIM 4 Port Layer 2 GE Module* *Cisco Switch 3650-24TS-DC*	1	$22,789.46	$22,789.46
Sync Equipment *L3Harris IP Simulcast Transmit Site Common Equipment*	1	$37,027.25	$37,027.25
Conventional Channel Gateways *6 Port Analog 4 Wire E&M VOIP Cards are included in the Nokia MPLS & MNI Microwave back haul pricing*		*N/A*	*N/A*
Trunked Base Stations *L3Harris MASTR V Linear Simulcast 800 MHZ Base Stations 48 VDC Power Supplies.* *Configured for 16 channels*	16	$481,610.39	$481,610.39
800 MHz Antenna Systems Transmit *Includes:* *Two RFS BMR Series Antennas* *Eupen Coaxial Cable, Connectors, Grounds and Hardware.* *Two DBSpectra DSCC85-08CH4 8 Channel Ceramic Combiners with Power Monitor and DIN Output Connector.* *DBSpectra MWF8AM-D 800 MHz Bandpass Filter (Where Required)* *PolyPhaser Combiner Surge Arrestors* ***Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers per County Request and Omnicom Report***	1	$45,519.36	$45,519.36
800 MHz Antenna Systems Receive *Includes:* *RFS BMR12 Series Antenna* *DB Spectra DS7TMA17C Low Noise Tower Top Amplifier with Dual Amps and Test Port Line and Bypass Switch* *DB Spectra DSX7PDU24S-DC 24 Channel Multicoupler with PDU DC Powered Polyphaser Surge Arrestor* *Eupen Coaxial Cable, Connectors and Hardware* ***Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers per County Request and Omnicom Report***	1	$18,279.09	$18,279.09

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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Tower Mount Changes & Modifications **Per Omnicom Report & Kirms Tower Services SOW** *Remove Three Existing Trango Mounts.* *Remove Two Existing H Frames at Top of Tower with Gin Pole.* *Relocate Existing DB812 to New HS6 Mount Relocate existing DB420 to New Mount. Replace 1/2" Jumpers & reroute to new location from Existing Coax.* *Gin Pole Required for Removal & Installation at Top of Tower.* *Change Butterfly Hangers & Hardware to Cable Blocks w/ Hardware* *Add Heavy Duty H Frame Sector Mount with 4 Antenna Pipe Mounts with Special Adjustable Triple Attachment Clamps & Extended Tiebacks Pipes.* *Change Two Heavy Duty Mounts to Two HS6 Mount with Special Adjustable Triple Attachment Clamps & Extended Tie Back Pipes* *Add 300 Ft Cable & Wave Guide Ladder on East Leg of Tower* *Move Obstructions as Needed.* *Add Cable & Wave Guide Bridge to East Leg from Existing Bridge*	1	$19,938.69	$19,938.69
800 MHz Transmitter Power Monitoring System *Included with DB Spectra Combiners*	2	*Included*	*Included*
48VDC Battery Plant/120VAC Inverters *Eltek FP216 -48/600 DC Power Equipment with Enersys 20-year VRLA Batteries.* *No DC to AC Inverters are required.* *All equipment is DC Powered*	1	$39,537.31	$39,537.31
DC Power Breaker Panels *Includes:* *Newmar DST-20 Rack Mounted* *Breaker Panel Required DC Breakers*	1	$4,415.14	$4,415.14
Floor Reinforcement for DC Power Plants	1	$1,875.00	$1,875.00
Site Electrical Work *Install VAC Power Drops to New 48 VDC Power Plant*	1	$1,187.50	$1,187.50
Tower Crew Services- New System *Installation of New P25 Antenna Systems* ***Add Additional Tower Services per County Request and Omnicom Report***	1	$40,937.50	$40,937.50
Tower Crew Services- Old EDACS System *Removal of EDACS Antenna Systems*	1	$10,125.00	$10,125.00
Tower Crew Services- Additional County Requested Removals *Removal of DB Shores DB422E Paging Antenna at 280' and Coax Line* *Removal of Beach Safety UHF Anyenna at 220' and Coax Line* *Removal of DB812 TAC Ch Antenna, Coax and Gate form NE leg at 300'* *Removal of Three Trango Antennas, Two at 290' and One at 50'*	1	$9,625.00	$9,625.00

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Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$75,238.12	$75,238.12
Project Management	1	$15,950.48	$15,950.48
Total Equipment and Services			**$891,930.29**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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1.26 P25 System B Port Orange Tower Site Equipment and Services

P25 System B Port Orange Tower Site Equipment and Services - Primary Control Point			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Site Controller *L3Harris IP Simulcast Network Sentry*	1	$15,750.00	$15,750.00
P25 Data Interface *L3Harris MME DC Powered Supports P25 Data-OTAR & OTAP*	1	$14,625.00	$14,625.00
Control Point *L3Harris Virtualized Distributed Simulcast Control Point-Redundant*	1	$75,000.00	$75,000.00
Switch, LAN, WAN Network Equipment *L3Harris IP Simulcast Network Equipment* *Includes:* *Cisco ISR4221/K9 DC Powered Router & NIM 4 Port Layer 2 GE Module* *Cisco Switch 3650-24TS-DC*	1	$22,789.46	$22,789.46
Sync Equipment *L3Harris IP Simulcast Transmit Site Common Equipment*	1	$37,027.25	$37,027.25
Conventional Channel Gateways *6 Port Analog 4 Wire E&M VOIP Cards are included in the Nokia MPLS & MNI Microwave back haul pricing*		*N/A*	*N/A*
Trunked Base Stations *L3Harris MASTR V Linear Simulcast 800 MHZ Base Stations 48 VDC Power Supplies.* *Configured for 16 channels*	16	$481,610.39	$481,610.39
800 MHz Antenna Systems Transmit *Includes:* *Two RFS BMR Series Antennas* *Eupen Coaxial Cable, Connectors, Grounds and Hardware.* *Two DBSpectra DSCC85-08CH4 8 Channel Ceramic Combiners with Power Monitor and DIN Output Connector.* *DBSpectra MWF8AM-D 800 MHz Bandpass Filter (Where Required)* *PolyPhaser Combiner Surge Arrestors* ***Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers per County Request and Omnicom Report***	1	$45,731.96	$45,731.96
800 MHz Antenna Systems Receive *Includes:* *RFS BMR12 Series Antenna* *DB Spectra DS7TMA17C Low Noise Tower Top Amplifier with Dual Amps and Test Port Line and Bypass Switch* *DB Spectra DSX7PDU24S-DC 24 Channel Multicoupler with PDU DC Powered Polyphaser Surge Arrestor* *Eupen Coaxial Cable, Connectors and Hardware* ***Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers per County Request and Omnicom Report***	1	$18,135.23	$18,135.23

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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Tower Mount Changes & Modifications **Per Omnicom Report & Kirms Tower Services SOW** *Remove Existing H Frames at Top of Tower with Gin Pole.* *Relocate Existing DB810 to New HS6 Mount Relocate existing DB420 to New Mount. Replace 1/2" Jumpers & reroute to new location from Existing Coax.* *Gin Pole Required for Installation at Top of Tower.* *Change Butterfly Hangers & Hardware to Cable Blocks w/ Hardware* *Add Heavy Duty H Frame Sector Mount with 4 Antenna Pipe Mounts with Special Adjustable Triple Attachment Clamps & Extended Tiebacks Pipes.* *Change Two Heavy Duty Mounts to Two HS6 Mount with Special Adjustable Triple Attachment Clamps & Extended Tie Back Pipes*	1	$12,359.03	$12,359.03
800 MHz Transmitter Power Monitoring System *Included with DB Spectra Combiners*	2	*Included*	*Included*
48VDC Battery Plant/120VAC Inverters *Eltek FP216 -48/600 DC Power Equipment with Enersys 20-year VRLA Batteries.* *No DC to AC Inverters are required.* *All equipment is DC Powered*	1	$39,537.31	$39,537.31
DC Power Breaker Panels *Includes:* *Newmar DST-20 Rack Mounted* *Breaker Panel Required DC Breakers*	1	$4,415.14	$4,415.14
Floor Reinforcement for DC Power Plants *None Required*	1	$0.00	$0.00
Site Electrical Work *Install VAC Power Drops to New 48 VDC Power Plant*	1	$1,187.50	$1,187.50
Tower Crew Services- New System *Installation of New P25 Antenna Systems* ***Add Additional Tower Services per County Request and Omnicom Report***	1	$24,587.50	$24,587.50
Tower Crew Services- Old EDACS System *Removal of EDACS Antenna Systems*	1	$10,125.00	$10,125.00
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$75,238.12	$75,238.12
Project Management	1	$15,950.48	$15,950.48
Total Equipment and Services			**$894,069.37**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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1.27 P25 System B New Smyrna Beach Tower Site Equipment and Services

P25 System B New Smyrna Beach Tower Site Equipment and Services			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Site Controller *L3Harris IP Simulcast Network Sentry*	1	$15,750.00	$15,750.00
Switch, LAN, WAN Network Equipment *L3Harris IP Simulcast Network Equipment Includes:* *Cisco ISR4221/K9 DC Powered Router & NIM 4 Port Layer 2 GE Module* *Cisco Switch 3650-24TS-DC*	1	$22,789.46	$22,789.46
Sync Equipment *L3Harris IP Simulcast Transmit Site Common Equipment*	1	$37,027.25	$37,027.25
Conventional Channel Gateways *6 Port Analog 4 Wire E&M VOIP Cards are included in the Nokia MPLS & MNI Microwave back haul pricing*		*N/A*	*N/A*
Trunked Base Stations *L3Harris MASTR V Linear Simulcast 800 MHZ Base Stations* *48 VDC Power Supplies.* *Configured for 16 channels*	16	$481,610.39	$481,610.39
800 MHz Antenna Systems Transmit *Includes:* *Two RFS BMR Series Antennas* *Eupen Coaxial Cable, Connectors, Grounds and Hardware.* *Two DBSpectra DSCC85-08CH4 8 Channel Ceramic Combiners with Power Monitor and DIN Output Connector.* *DBSpectra MWF8AM-D 800 MHz Bandpass Filter (Where Required)* *PolyPhaser Combiner Surge Arrestors* ***Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers per County Request and Omnicom Report***	1	$45,475.83	$45,475.83
800 MHz Antenna Systems Receive *Includes:* *RFS BMR12 Series Antenna* *DB Spectra DS7TMA17C Low Noise Tower Top Amplifier with Dual Amps and Test Port Line and Bypass Switch* *DB Spectra DSX7PDU24S-DC 24 Channel Multicoupler with PDU DC Powered Polyphaser Surge Arrestor* *Eupen Coaxial Cable, Connectors and Hardware* ***Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers per County Request and Omnicom Report***	1	$18,482.58	$18,482.58
Tower Mount Changes & Modifications **Per Omnicom Report & Kirms Tower Services SOW** *Change Butterfly Hangers & Hardware to Cable Blocks w/ Hardware* *Change Heavy Duty Mounts to HS6 with Special Adjustable Triple Attachment Clamps & Extended Tiebacks Pipes.*	1	$7,485.61	$7,485.61

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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800 MHz Transmitter Power Monitoring System *Included with DB Spectra Combiners*	2	*Included*	*Included*
800 MHz Test Antenna *Includes:* *DB Spectra DS8A03F36U-N Antenna* *Coaxial Surge Arrestor* *½ Eupen Coaxial Cable, Connectors* *½ Butterfly Hangers* *½ Ground Kits* *Antenna Mount*	1	$2,704.00	$2,704.00
48VDC Battery Plant/120VAC Inverters *Eltek FP216 -48/600 DC Power Equipment* *w Enersys 20-year VRLA Batteries.* *No DC to AC Inverters are required.* *All equipment is DC Powered*	1	$39,537.31	$39,537.31
DC Power Breaker Panels *Includes:* *Newmar DST-20 Rack Mounted* *Breaker Panel Required DC Breakers*	1	$4,415.14	$4,415.14
Site Electrical Work *Install VAC Power Drops to New 48 VDC Power Plant*	1	$1,187.50	$1,187.50
Tower Crew Services- New System *Installation of New P25 Antenna Systems*	1	$13,275.00	$13,275.00
Tower Crew Services- Test Antenna *Installation of New P25 Test Antenna*	1	$4,500.00	$4,500.00
Tower Crew Services- Old EDACS System *Removal of EDACS Antenna Systems*	1	$10,125.00	$10,125.00
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$75,238.12	$75,238.12
Project Management		$15,950.48	$15,950.48
Total Equipment and Services			**$795,553.67**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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1.28 P25 System B Edgewater Tower Site Equipment and Services

P25 System B Edgewater Tower Site Equipment and Services			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Site Controller *L3Harris IP Simulcast Network Sentry*	1	$15,750.00	$15,750.00
Switch, LAN, WAN Network Equipment *L3Harris IP Simulcast Network Equipment* *Includes:* *Cisco ISR4221/K9 DC Powered Router & NIM 4 Port Layer 2 GE Module* *Cisco Switch 3650-24TS-DC*	1	$22,789.46	$22,789.46
Sync Equipment *L3Harris IP Simulcast Transmit Site Common Equipment*	1	$37,027.25	$37,027.25
Conventional Channel Gateways *6 Port Analog 4 Wire E&M VOIP Cards are included in the Nokia MPLS & MNI Microwave back haul pricing*		*N/A*	*N/A*
Trunked Base Stations *L3Harris MASTR V Linear Simulcast 800 MHZ Base Stations* *48 VDC Power Supplies.* *Configured for 16 channels*	16	$481,610.39	$481,610.39
800 MHz Antenna Systems Transmit *Includes:* *Two RFS BMR Series Antennas* *Eupen Coaxial Cable, Connectors, Hangers, Grounds and Hardware.* *Two DBSpectra DSCC85-08CH4 8 Channel Ceramic Combiners with Power Monitor and DIN Output Connector.* *DBSpectra MWF8AM-D 800 MHz Bandpass Filter (Where Required) Heavy Duty Type* *Antenna Mounts* *PolyPhaser Combiner Surge Arrestors* ***Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers per County Request and Omnicom Report***	1	$43,101.47	$43,101.47
800 MHz Antenna Systems Receive *Includes:* *RFS BMR12 Series Antenna* *DB Spectra DS7TMA17C Low Noise Tower Top Amplifier with Dual Amps and Test Port Line and Bypass Switch* *DB Spectra DSX7PDU24S-DC 24 Channel Multicoupler with PDU DC Powered Polyphaser Surge Arrestor* *Eupen Coaxial Cable, Connectors and Hardware* *Heavy Duty Antennas Mounts* ***Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers per County Request and Omnicom Report***	1	$16,801.09	$16,801.09

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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Tower Mount Changes & Modifications **Per Omnicom Report & Kirms Tower Services SOW** *Remove Existing Trango Mount.* *Remove Heavy Duty Standoff with Double Tie Backs* *Remove DB810 and Associated Cabling* *Gin Pole Required for Installation at Top of Tower.* *Change Butterfly Hangers & Hardware to Cable Blocks with Hardware* *Change Five Heavy Duty Mounts to HS6 Mounts with Special Adjustable Triple Attachment Clamps & Extended Tie Back Pipes*	1	$12,675.27	$12,675.27
800 MHz Transmitter Power Monitoring System *Included with DB Spectra Combiners*	2	*Included*	*Included*
48VDC Battery Plant/120VAC Inverters *Eltek FP216 -48/600 DC Power Equipment* *w Enersys 20-year VRLA Batteries.* *No DC to AC Inverters are required.* *All equipment is DC Powered*	1	$39,537.31	$39,537.31
DC Power Breaker Panels *Includes:* *Newmar DST-20 Rack Mounted* *Breaker Panel Required DC Breakers*		$4,415.14	$4,415.14
Floor Reinforcement for DC Power Plants	1	$1,875.00	$1,875.00
Site Electrical Work *Install VAC Power Drops to New 48 VDC Power Plant*	1	$1,187.50	$1,187.50
Tower Crew Services- New System *Installation of New P25 Antenna Systems* ***Add Additional Tower Services per County Request and Omnicom Report***	1	$33,337.50	$33,337.50
Tower Crew Services- Old EDACS System *Removal of EDACS Antenna Systems*	1	$10,125.00	$10,125.00
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$75,238.12	$75,238.12
Project Management	1	$15,950.48	$15,950.48
Total Equipment and Services			**$811,420.98**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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1.29 P25 System B Plantation Bay Tower Site Equipment and Services

P25 System B Plantation Bay Tower Site Equipment and Services			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Site Controller *L3Harris IP Simulcast Network Sentry*	1	$15,750.00	$15,750.00
Switch, LAN, WAN Network Equipment *L3Harris IP Simulcast Network Equipment* *Includes:* *Cisco ISR4221/K9 DC Powered Router & NIM 4 Port Layer 2 GE Module* *Cisco Switch 3650-24TS-DC*	1	$22,789.46	$22,789.46
Sync Equipment *L3Harris IP Simulcast Transmit Site Common Equipment*	1	$37,027.25	$37,027.25
Conventional Channel Gateways *6 Port Analog 4 Wire E&M VOIP Cards are included in the Nokia MPLS & MNI Microwave back haul pricing*		*N/A*	*N/A*
Trunked Base Stations *L3Harris MASTR V Linear Simulcast 800 MHZ Base Stations 48 VDC Power Supplies.* *Configured for 16 channels*	16	$481,610.39	$481,610.39
800 MHz Antenna Systems Transmit *Includes:* *Two Sinclair SE4192 Series Antennas* *Eupen Coaxial Cable, Connectors, Hangers, Grounds and Hardware.* *Two DBSpectra DSCC85-08CH4 8 Channel Ceramic Combiners with Power Monitor and DIN Output Connector.* *DBSpectra MWF8AM-D 800 MHz Bandpass Filter (Where Required) Heavy Duty Type Antenna Mounts* *PolyPhaser Combiner Surge Arrestors*	1	$48,199.51	$48,199.51
800 MHz Antenna Systems Receive *Includes:* *Sinclair SE4192 Series Antenna* *DB Spectra DS7TMA17C Low Noise Tower Top Amplifier with Dual Amps and Test Port Line and Bypass Switch* *DB Spectra DSX7PDU24S-DC 24 Channel Multicoupler w PDU DC Powered* *Polyphaser Surge Arrestor* *Eupen Coaxial Cable, Connectors and Hardware Heavy Duty Antennas Mounts*	1	$22,639.18	$22,639.18
800 MHz Transmitter Power Monitoring System *Included with DB Spectra Combiners*	2	*Included*	*Included*
800 MHz Test Antenna *Includes:* *DB Spectra DS8A03F36U-N Antenna* *Coaxial Surge Arrestor* *½ Eupen Coaxial Cable, Connectors* *½ Butterfly Hangers* *½ Ground Kits* *Antenna Mount*	1	$2,704.00	$2,704.00

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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48VDC Battery Plant/120VAC Inverters *Eltek FP216 -48/600 DC Power Equipment with Enersys 20-year VRLA Batteries. No DC to AC Inverters are required. All equipment is DC Powered*	1	$39,537.31	$39,537.31
DC Power Breaker Panels *Includes:* *Newmar DST-20 Rack Mounted* *Breaker Panel Required DC Breakers*	1	$4,415.14	$4,415.14
Floor Reinforcement for DC Power Plants *None Required*		*N/A*	*N/A*
Site Electrical Work Install VAC Power Drops to New 48 VDC Power Plant	1	$1,875.00	$1,875.00
Tower Crew Services- New System *Installation of New P25 Antenna Systems Supply & Install Cable Ladder and Bridge* ***Cable Ladder & Bridge Removed by County Addendum Removed $18,245.00***	1	$14,550.63	$14,550.63
Tower Crew Services- Test Antenna *Installation of New P25 Test Antenna*	1	$4,500.00	$4,500.00
Tower Crew Services- Old EDACS System *Removal of EDACS Antenna Systems*	1	$0.00	$0.00
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$75,238.12	$75,238.12
Project Management	1	$28,220.08	$28,220.08
Total Equipment and Services			**$799,056.07**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

1.30 P25 System C EVENT System EVAC Tower Site Equipment and Services

P25 System C EVENT System EVAC Tower Site Equipment and Services			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Site Controller *L3Harris IP Network Sentry*	1	$15,750.00	$15,750.00
Switch, LAN, WAN Network Equipment *L3Harris IP Simulcast Network Equipment Includes:* *Cisco ISR4221/K9 DC Powered Router & NIM 4 Port Layer 2 GE Module* *Cisco Switch 3650-24TS-DC*	1	$7,633.17	$7,633.17
P25 Data Interface *L3Harris MME DC Powered Supports P25 Data-OTAR & OTAP*	1	$7,200.00	$7,200.00
P25 Multi-Site Interface *L3Harris Equipment to Interface Multi-Site to VIDA Core*	1	$22,682.75	$22,682.75
Trunked Base Stations *L3Harris MASTR V 800 MHZ Base Stations* *48 VDC Power Supplies.* *Configured for 5 channels*	5	$156,199.55	$156,199.55
DC Power Breaker Panels *Includes:* *Newmar DST-20 Rack Mounted* *Breaker Panel Required DC Breakers*	1	$2,191.22	$2,191.22
Connect to the RMACS 800 MHz Transmit Antenna System *Included in Services*	5	*Included*	*Included*
Connect to the RMACS 800 MHz Receive Antenna System *Included in Services*	5	*Included*	*Included*
Connect to -48VDC Battery Plant/120VAC Inverters *Included in Services*	5	*Included*	*Included*
Other Site Work (Describe)		*None required*	*None required*
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$37,570.00	$37,570.00
Project Management	1	$12,269.60	$12,269.60
Total Equipment and Services			**$261,496.29**

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1.31 P25 System D DeBary PSIC System Equipment and Services

P25 System D DeBary PSIC System Equipment and Services			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Site Controller *L3Harris IP Network Sentry*	1	$15,750.00	$15,750.00
P25 Data Interface *L3Harris MME DC Powered Supports P25 Data-OTAR & OTAP*	1	$7,200.00	$7,200.00
Trunked Base Stations *L3Harris MASTR V 800 MHZ Base Stations* *48 VDC Power Supplies.* *Configured for 5 channels* ***Credit for Reuse of Existing Channels***	5		$28,649.55
Connect to the 800 MHz Transmit Antenna System *Included in Services*	5	*Included*	*Included*
Connect to the 800 MHz Receive Antenna System *Included in Services*	5	*Included*	*Included*
Other Site Work (Describe)	1	$0.00	$0.00
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming ***Reduced Services for Reuse of Existing Equipment***	1		$16,480.00
Project Management	1	$12,269.60	$12,269.60
Total Equipment and Services			**$80,349.15**

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1.32 Primary 800 MHz Analog FSA Simulcast System Equipment and Services (Option 1)

FSA 800 MHz Analog Simulcast System Equipment and Services			
Description	**Qty**	**Unit Cost**	**Extended Cost**
System Controller *Not Required. Virtualized on Master Base Station*	1	*N/A*	*N/A*
Receiver Voting Equipment (Not Required) ***NOTE: This system will be capable of Receiver operation***	1	*Included*	*Included*

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Connect to Site's -48VDC Battery Plant *Included in Services*	6	*Included*	*Included*
Conventional Channel Gateways *6 Port Analog 4 Wire E&M VOIP Cards are included in the Nokia MPLS & MNI Microwave back haul pricing*		*N/A*	*N/A*
Reprogramming and Testing of FSA Radios and Decoders at the Fire Stations	51	$270.00	$13,770.00
Other Site Work (Describe) *Replace Fire Station Alert Unit Decoder Modules*	51	$108.00	$5,508.00
Total Equipment and Services			**$19,278.00**

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1.33 RMACS Simulcast System Equipment and Services

RMACS Simulcast System Equipment and Services			
Description	**Qty**	**Unit Cost**	**Extended Cost**
System Controller *Not Required. Virtualized on Master Base Station*	1	*N/A*	*N/A*
Switch, LAN, WAN Network Equipment *L3Harris IP Network Equipment* ***NOTE: Shared with 800 FSA System*** ***Moved from 1.32 800MHz FSA Pricing***	6	$875.00	$5,250.00
Sync Equipment ***Includes:*** ***Two Spectracom Secure Sync Master Oscillators 48 VDC*** ***One Spectracom SAS-17E Selector/Distribution Amplifier 48 VDC*** ***Two GPS Antennas*** ***NOTE: GPS Sync Equipment Shared by RMACS and VHF Paging Systems*** ***Moved from 1.32 800MHz FSA Pricing***	6	$16,911.69	$101,470.16
Receiver Voting Equipment *Included in the Cost of the Master Base Stations*	5	*Included*	*Included*
EVAC Simulcast Base Station (5 Channels) *L3Harris/Tait TB9400 ASIP Simulcast Master Base Station* *Includes:* *TP9400 800 MHZ 100-Watt Base Station Master/ Central Voter Simulcast Feature* *48 VDC Powered*	5	$14,381.25	$71,906.25
Edgewater Simulcast Base Station (5 Channels) *L3Harris/Tait TB9400 ASIP Simulcast Remote Base Station* *Includes:* *TP9400 800 MHZ 100-Watt Base Station IP Satellite Remote Simulcast Feature* *48 VDC Powered*	5	$11,227.50	$56,137.50
Orange City Simulcast Base Station (5 Channels) *L3Harris/Tait TB9400 ASIP Simulcast Remote Base Station* *Includes:* *TP9400 800 MHZ 100-Watt Base Station IP Satellite Remote Simulcast Feature* *48 VDC Powered*	5	$11,227.50	$56,137.50
Barberville Base Simulcast Station (5 Channels) *L3Harris/Tait TB9400 ASIP Simulcast Remote Base Station* *Includes:* *TB9400 800 MHZ 100-Watt Base Station IP Satellite Remote Simulcast Feature, 48 VDC Powered*	5	$11,227.50	$56,137.50
Port Orange Simulcast Base Station (5 Channel) *L3Harris/Tait TB9400 ASIP Simulcast Remote Base Station* *Includes:* *TP9400 800 MHZ 100-Watt Base Station IP Satellite Remote Simulcast Feature* *48 VDC Powered*	5	$11,227.50	$56,137.50

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

EOC-B 8CALL90 Simulcast Base Station (1 Channel) *L3Harris/Tait TB9400 ASIP Simulcast Remote Base Station* *Includes:* *TP9400 800 MHZ 100-Watt Base Station IP Satellite Remote* *Simulcast Feature* *48 VDC Powered*	1	$11,227.50	$11,227.50
DC Power Breaker Panels ***Includes:*** ***Newmar DST-20 Rack Mounted Breaker Panel*** ***Required DC Breakers*** ***NOTE: DC Breaker Panel will be shared by 800 RMACS and VHF Paging***	5	$2,207.57	$11,037.86
Connect to Site's -48VDC Battery Plant *Included in Services*	6	*Included*	*Included*
RMACS Event Antenna Systems Transmit at EVAC *Includes:* *One RFS BMR Series Antenna* *Eupen Coaxial Cable, Connectors, Hangers, Grounds and Hardware.* *One DBSpectra DSCC85-11CH4 11 Channel Ceramic Combiners with Power Monitor and DIN Output Connector.* *DBSpectra MWF8AM-D 800 MHz Bandpass Filter (Where Required)* *Heavy Duty Type Antenna Mount* *Polyphaser Combiner Surge Arrestor* ***Removed 800 MHz FSA Related Equipment***	1	$30,345.85	$30,345.85
RMACS Antenna Systems Transmit at Edgewater *Includes:* *One RFS BMR Series Antenna* *Eupen Coaxial Cable, Connectors, Hangers, Grounds and Hardware.* *One DBSpectra DSCC85-06CH4 6 Channel Ceramic Combiners with Power Monitor and DIN Output Connector.* *DBSpectra MWF8AM-D 800 MHz Bandpass Filter (Where Required)* *Heavy Duty Type Antenna Mount* *Polyphaser Combiner Surge Arrestor* ***Removed 800 MHz FSA Related Equipment***	1	$22,171.44	$22,171.44
RMACS Antenna Systems Transmit at Orange City *Includes:* *One RFS BMR Series Antenna* *Eupen Coaxial Cable, Connectors, Hangers, Grounds and Hardware.* *One DBSpectra DSCC85-06CH4 6 Channel Ceramic Combiners with Power Monitor and DIN Output Connector.* *DBSpectra MWF8AM-D 800 MHz Bandpass Filter (Where Required)* *Heavy Duty Type Antenna Mount* *Polyphaser Combiner Surge Arrestor* ***Removed 800 MHz FSA Related Equipment***	1	$22,171.44	$22,171.44

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RMACS Antenna Systems Transmit at Barberville *Includes:* *One RFS BMR Series Antenna* *Eupen Coaxial Cable, Connectors, Hangers, Grounds and Hardware.* *One DBSpectra DSCC85-06CH4 6 Channel Ceramic Combiners with Power Monitor and DIN Output Connector.* *DBSpectra MWF8AM-D 800 MHz Bandpass Filter (Where Required)* *Heavy Duty Type Antenna Mount* *Polyphaser Combiner Surge Arrestor* ***Removed 800 MHz FSA Related Equipment***	1	$23,364.16	$23,364.16
RMACS Antenna Systems Transmit at Port Orange *Includes:* *One RFS BMR Series Antenna* *Eupen Coaxial Cable, Connectors, Hangers, Grounds and Hardware.* *One DBSpectra DSCC85-06CH4 6 Channel Ceramic Combiners with Power Monitor and DIN Output Connector.* *DBSpectra MWF8AM-D 800 MHz Bandpass Filter (Where Required)* *Heavy Duty Type Antenna Mount* *Polyphaser Combiner Surge Arrestor* ***Removed 800 MHz FSA Related Equipment***	1	$23,537.16	$23,537.16
RMACS/ 8CALL90 Antenna Systems at EOC-B ***Includes:*** ***Transmit Antenna System Provide and Install New RFS BMR Series Antenna System, Transmission Line & Surge Protector Duplexer*** ***Per County Request***	1	$15,671.67	$15,671.67
800 MHz Transmitter Power Monitoring System *Included with DB Spectra Combiners*	5	$0.00	$0.00
RMACS Antenna Systems Receive-EVAC *Includes:* *RFS BMR Series Antenna* *DB Spectra DS7TMA17C Low Noise Tower Top Amplifier with Dual Amps and Test Port Line and Bypass Switch* *DB Spectra DSX7PDU16S-DC 16 Channel Multicoupler with PDU DC Powered Polyphaser Surge Arrestor* *Eupen Coaxial Cable, Connectors and Hardware* *Heavy Duty Antennas Mounts* ***Removed 800 MHz FSA Related Equipment***	1	$19,474.84	$19,474.84

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RMACS Antenna Systems Receive-Edgewater *Includes:* *RFS BMR Series Antenna* *DB Spectra DS7TMA17C Low Noise* *Tower Top Amplifier with Dual Amps and* *Test Port Line and Bypass Switch* *DB Spectra DSX7PDU16S-DC 16 Channel Multicoupler with* *PDU DC Powered Polyphaser Surge Arrestor* *Eupen Coaxial Cable, Connectors and Hardware* *Heavy Duty Antennas Mounts* ***Removed 800 MHz FSA Related Equipment***	1	$19,681.91	$19,681.91
RMACS Antenna Systems Receive-Orange City *Includes:* *RFS BMR Series Antenna* *DB Spectra DS7TMA17C Low Noise* *Tower Top Amplifier with Dual Amps and* *Test Port Line and Bypass Switch* *DB Spectra DSX7PDU16S-DC 16 Channel Multicoupler with* *PDU DC Powered Polyphaser Surge Arrestor* *Eupen Coaxial Cable, Connectors and Hardware* *Heavy Duty Antennas Mounts* ***Removed 800 MHz FSA Related Equipment***	1	$19,560.44	$19,560.44
RMACS Antenna Systems Receive Barberville *Includes:* *RFS BMR Series Antenna* *DB Spectra DS7TMA17C Low Noise* *Tower Top Amplifier with Dual Amps and* *Test Port Line and Bypass Switch* *DB Spectra DSX7PDU16S-DC 16 Channel Multicoupler with* *PDU DC Powered Polyphaser Surge Arrestor* *Eupen Coaxial Cable, Connectors and Hardware* *Heavy Duty Antennas Mounts* ***Removed 800 MHz FSA Related Equipment***	1	$19,560.44	$19,560.44
RMACS Antenna Systems **Receive-Port Orange Per RFP** **Reuse EDACS RX MC**	1	*Included*	*Included*
Conventional Channel Gateways *6 Port Analog 4 Wire E&M VOIP Cards are included in the Nokia MPLS & MNI Microwave back haul pricing*		*N/A*	*N/A*
Tower Crew Services- New System *Installation of New RMACS & 800 MHZ FSA Antenna Systems*	1	$42,375.00	$42,375.00
Tower Crew Services- Old Analog System *Removal of Existing Antenna Systems*	1	$20,625.00	$20,625.00
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$163,356.00	$163,356.00
Project Management	1	$19,631.36	$19,631.36
Total Equipment and Services			**$886,968.45**

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1.34 Backup VHF Fire Paging Simulcast System Equipment and Services

Backup VHF Fire Paging Simulcast System Equipment and Services			
Description	**Qty**	**Unit Cost**	**Extended Cost**
System Controller *Not Required. Virtualized on Master Base Station*	1	*N/A*	*N/A*
Switch, LAN, WAN Network Equipment *L3Harris IP Network Equipment* ***NOTE: Shared with 800 FSA System***		*N/A*	*N/A*
Sync Equipment ***NOTE: Shared with 800 FSA System***		*N/A*	*N/A*
Receiver Voting Equipment *Included in the Cost of the Master Base Stations*	1	*Included*	*Included*
EVAC Simulcast Base Station (1 Channel) *L3Harris/Tait TB9400 ASIP Simulcast Master Base Station* *Includes:* *TP9400 150-174 MHZ 100-Watt Base Station Master/ Central Voter Simulcast Feature* *48 VDC Powered*	1	$15,298.09	$15,298.09
Edgewater Simulcast Base Station (1 Channel) *L3Harris/Tait TB9400 ASIP Simulcast Remote Base Station* *Includes:* *TP9400 150-174 MHZ 100-Watt Base Station IP Satellite Remote Simulcast Feature* *48 VDC Powered*	1	$11,957.29	$11,957.29
EOC-A Simulcast Base Station (1 Channel) *L3Harris/Tait TB9400 ASIP Simulcast Remote Base Station* *Includes:* *TP9400 150-174 MHZ 100-Watt Base Station IP Satellite Remote Simulcast Feature* *48 VDC Powered*	1	$11,957.29	$11,957.29
Orange City Simulcast Base Station (1 Channel) *L3Harris/Tait TB9400 ASIP Simulcast Remote Base Station* *Includes:* *TP9400 150-174 MHZ 100-Watt Base Station IP Satellite Remote Simulcast Feature* *48 VDC Powered*	1	$11,957.29	$11,957.29
Barberville Simulcast Base Station (1 Channel) *L3Harris/Tait TB9400 ASIP Simulcast Remote Base Station* *Includes:* *TP9400 150-174 MHZ 100-Watt Base Station IP Satellite Remote Simulcast Feature* *48 VDC Powered*	1	$11,957.29	$11,957.29
Port Orange Simulcast Base Station (1 Channel) *L3Harris/Tait TB9400 ASIP Simulcast Remote Base Station* *Includes:* *TP9400 150-174 MHZ 100-Watt Base Station IP Satellite Remote Simulcast Feature* *48 VDC Powered*	1	$11,957.29	$11,957.29

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DC Power Breaker Panels ***NOTE: DC Breaker Panel will be shared by 800 FSA/ RMACS and VHF Paging***		*N/A*	*N/A*
VHF Antenna System *Includes:* *Andrew DB-224 VHF Antenna w Side Mount Kit EMR-64536-ENC 150-160 MHZ Duplexer 3 MHz Sep.* *Eupen 7/8 Coax &* *Connectors Coaxial Surge Arrestor* *Coaxial Grounds & Hangers*	6	$4,174.45	$25,046.68
Tower Crew Services- New System *Installation of New VHF Antenna Systems*	1	$20,200.00	$20,200.00
Tower Crew Services- Old Analog System *Removal of Existing VHF Antenna Systems*	1	$16,875.00	$16,875.00
Connect to Site's -48VDC Battery Plant *Included in Services*	1	*Included*	*Included*
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$74,490.00	$74,490.00
Project Management		$12,269.60	$12,269.60
Total Equipment and Services			**$223,965.84**

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1.35 Zetron Model 25 FSA System Equipment and Services

Zetron Model 25 FSA System Equipment and Services			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Cost to transition the Zetron Model 25 Analog FSA system from the EDACS analog system to the new FSA P25 800 MHz simulcast system *Included in Services for the Dispatch Center*	1	*Included*	*Included*
Cost to transition the Zetron Model 25 Analog FSA system from the multi-site VHF system to the new VHF FSA simulcast system *Included in Services for the Dispatch Center*	1	*Included*	*Included*
Optional- Replacement Zetron 25 Includes CAD Interface	1	$ 9,583.00	$9,583.00
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	*Included*	*Included*
Project Management	1	*Included*	*Included*
Total Equipment and Services			**$9,583.00**

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1.36 Lake Harney Tower Site Development Services

Lake Harney Tower Site Development Services			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Grub the site and construct a security gate at the road entrance including the required ASR signage *Includes:* *Construction Staking _Notices & Documentation Site Construction 100 X 100 Compound & General Site Work Gravel Compound & Dewatering Caisons & Deadmen Shelter Foundation & Generator /Tank Foundation and Conduits Move Existing Shelter & Set at Location* ***Changed Site Location, Elevation of Property, Additional Site Work Required*** ****Services provided in a separate quote***	1	~~$545,780.00~~ $584,158.80	~~$545,780.00~~ $584,158.80
Self-Supporting Solid Steel Tower with LED Lighting System *Includes:* *Tower Steel*, LED Lighting System with Monitoring, Cable Bridge to Shelter & Tower Erection & Freight* ****Steel prices have increased, price reflects***	1	$543,387.50	$543,387.50
Construct a foundation for the County-provided equipment shelter *Included in Construction Costs*	1	*Included*	*Included*
Relocate and Install the County's Equipment Shelter *Included in Construction Costs*	1	*Included*	*Included*
Caterpillar Backup Power Generator, Foundation, and Fuel Tank *Supply & Install Cat Generator Per RFP Spec's*	1	$62,992.50	$62,992.50
H-Frame Electric Meter Pedestal *Included in Construction Costs*	1	*Included*	*Included*
Site Development, grounding, electrical utility work including the installation of the underground electrical utility service with pad-mounted transformer if required *Includes Site Electrical, Power H-Frame, Shelter Electrical-Telco and Site grounding* ***Additional Site Development Requirements***	1	$104,762.50	$104,762.50
Two (2) spare 2-inch conduits from the inside of the generator enclosure to the equipment shelter *Included in Construction Costs*	1	*Included*	*Included*
Remove Spoils from The Site Following Drilling Plus Any Dumping Fees ****Should Be Able to Spread Dirt Being Excavated from Borings Around the Site, With the Landowner's Approval. If Not, Cost to Bring to County Landfill***	1	$11,500.00	$11,500.00

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Remove Slurry from The Site Following Drilling Plus Any Dumping Fees ***Polymer or Bentonite May Need to Be Added to Stabilize Walls Based On The Soils Report. Material Needs to Be Hauled Offsite If Used Due to Ecological Impact***	1	$28,750.00	$28,750.00
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	*Included*	*Included*
Project Management	1	$36,808.80	$36,808.80
			~~**$1,268,568.80**~~
Total Equipment and Services			**$1,372,360.10**

1.37 EOC-A Microwave Network Backhaul System Equipment

EOC-A Microwave & MPLS Network Backhaul System Equipment			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Microwave Radio Loop Backhaul Indoor Equipment *Includes:* *MNI Proteus MXD, 6 GHz Gigabit & 18 GHZ Ethernet Radios, East-West Repeater, configured with ATPC TX Pwr, Standard, High or Ultra Hi Power depending on Application, All Indoor, Licensed for 155 Mbps in 30 MHz Channel. Equipped with ACM, & SHARP (Self-Healing Auto Ring Protection)* ***ADDED Dual 155 Mbps Radio Option*** ***Includes:*** ***6 GHz Link to EVAC*** ***Dual 6 GHz Link to DeLeon*** ***18 GHz Link to EOC-B***	1	$81,001.14	$81,001.14
Microwave Loop 155mph Antenna Systems Equipment *Includes:* *RFS Microwave Antennas with Radomes, 155 MPH Wind Kits and Two Back Brace Bar Kits. Eupen Waveguide and Connectors, RFS Waveguide Flex, SitePro 1 Microwave Pipe Mounts, Installation Hardware & Consumables.* ***Additional Required Materials- Raise Antennas to Available Space On Tower Add 85 Ft Waveguide Per County Request And Omnicom Report***	1	$25,276.09	$25,276.09
MPLS Routing Equipment *Includes:* *Nokia SAR-8 7705 Chassis DC Powered Redundant Control Switch Modules Dual DC Power Feeds* *Three 8 Port SFP Ethernet Cards Eight GigE Ethernet SFP Modules* *Four GigE Multimode Fiber SFP Modules* *Two 6 Port E&M Analog VOIP Audio Cards*	1	$24,077.40	$24,077.40
Native Ethernet and TDM Protocol Capability to Support the County's Legacy T1 Circuits *Included in Microwave Radio Costs*	1	*Included*	*Included*
Switch, LAN, WAN Equipment *None Required*	1	*N/A*	*N/A*

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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Alarm Monitoring and Network Management Equipment *Microwave Alarm Equipment Listed with Network Management Equipment*	1	*Included*	*Included*
Physical Path Surveys *Included in Tower Services*	1	*Included*	*Included*
Tower Crew Services- New Microwave System *Installation of New Microwave Antenna Systems* ***Additional Labor Required to Raise Antennas Per County Request And Omnicom Report***	1	$14,000.00	$14,000.00
Tower Crew Services- Old Microwave System *Removal of Existing Microwave Antenna Systems*	1	$10,000.00	$10,000.00
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$29,682.12	$29,682.12
Project Management	1	$9,815.68	$9,815.68
Total Equipment and Services			**$193,852.43**

1.37a 49 Keyton Drive Microwave Network Backhaul System Equipment

49 Keyton MPLS Network Backhaul System Equipment			
Description	**Qty**	**Unit Cost**	**Extended Cost**
MPLS Routing Equipment *Includes:* *Nokia SAR-18 7705 Chassis DC Powered Redundant Control Switch Modules* *Dual DC Power Feeds* *Four 8 Port SFP Ethernet Cards Twelve GigE Ethernet SFP Modules* *Eight GigE Multimode Fiber SFP Modules Six 6 Port E&M Analog VOIP Audio Cards Dual AC to 48 VDC Power Supplies* *Two DC Power Supply cables* *Two 120 VAC to 48VDC Power Supply*	1	$50,202.60	$50,202.60
Switch, LAN, WAN Equipment *None Required*		*N/A*	*N/A*
Other Site Work (Describe)	1	*None Required*	*None Required*
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$15,175.00	$15,175.00
Project Management	1	$9,815.68	$9,815.68
Total Equipment and Services			**$75,193.28**

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1.37b EOSCC Microwave Network Backhaul System Equipment

EOSCC MPLS Network Backhaul System Equipment			
Description	**Qty**	**Unit Cost**	**Extended Cost**
MPLS Routing Equipment *Includes:* *Nokia SAR-8 7705 Chassis DC Powered Redundant Control Switch Modules Dual DC Power Feeds* *Two 8 Port SFP Ethernet Cards Eight GigE Ethernet SFP Modules* *Two GigE Multimode Fiber SFP Modules Two 6 Port E&M Analog VOIP Audio Cards Two 120 VAC to 48VDC Power Supply*	1	$22,684.20	$22,684.20
Switch, LAN, WAN Equipment *None Required*		*N/A*	*N/A*
Other Site Work (Describe)	1	*None Required*	*None Required*
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$15,175.00	$15,175.00
Project Management	1	$9,815.68	$9,815.68
Total Equipment and Services			**$47,674.88**

1.37c 59 Keyton Backup Center Microwave Network Backhaul System Equipment

59 Keyton MPLS Network Backhaul System Equipment			
Description	**Qty**	**Unit Cost**	**Extended Cost**
MPLS Routing Equipment *Includes:* *Nokia SAR-8 7705 Chassis DC Powered Redundant Control Switch Modules Dual DC Power Feeds* *Two 8 Port SFP Ethernet Cards Two GigE Ethernet SFP Modules* *Two GigE Multimode Fiber SFP Modules* *Two 120 VAC to 48 VDC Power Supply*	1	$13,339.50	$13,339.50
Switch, LAN, WAN Equipment *None Required*		*N/A*	*N/A*
Other Site Work (Describe)	1	*None Required*	*None Required*
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$15,175.00	$15,175.00
Project Management	1	$9,815.68	$9,815.68
Total Equipment and Services			**$38,330.18**

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1.38 EOC-B Network Backhaul System Equipment

EOC-B Network Backhaul System Equipment			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Microwave Radio Loop Backhaul Indoor Equipment *Includes:* *MNI Proteus MXD, 6 GHz Gigabit & 18 GHZ Ethernet Radios, East-West Repeater, configured with ATPC TX Pwr, Standard, High or Ultra Hi Power depending on Application, All Indoor, Licensed for 155 Mbps in 30 MHz Channel. Equipped with ACM, & SHARP (Self-Healing Auto Ring Protection)*	1	$29,494.98	$29,494.98
Microwave Loop 155mph Antenna Systems Equipment *Includes:* *RFS Microwave Antennas with Radomes, 155 MPH Wind Kits and Two Back Brace Bar Kits for each Antenna. Eupen Waveguide and Connectors, RFS Waveguide Flex, SitePro 1 Microwave Pipe Mounts, Installation Hardware & Consumables.* ***Additional Required Materials - Raise Antennas to Available Space On Tower - Add 85 Ft Waveguide Per County Request And Omnicom Report***	1	$16,312.96	$16,312.96
MPLS Routing Equipment *Includes:* *Nokia SAR-8 7705 Chassis DC Powered Redundant Control Switch Modules Dual DC Power Feeds* *Two 8 Port SFP Ethernet Cards Twelve GigE Ethernet SFP Modules, Four GigE Multimode Fiber SFP Modules* *One 6 Port E&M Analog VOIP Audio Cards*	1	$17,705.40	$17,705.40
Native Ethernet and TDM Protocol Capability to Support the County's Legacy T1 Circuits *Included in Microwave Radio Costs*	1	*Included*	*Included*
Switch, LAN, WAN Equipment *None Required*		*N/A*	*N/A*
Alarm Monitoring and Network Management Equipment *Microwave Alarm Equipment Listed with Network Management Equipment*		*N/A*	*N/A*
Physical Path Surveys *Included in Tower Services*	1	*Included*	*Included*
Tower Crew Services- New Microwave System *Installation of New Microwave Antenna Systems* ***Additional Labor Required to Raise Antennas Per County Request and Omnicom Report***	1	$8,550.00	$8,550.00
Tower Crew Services- Old Microwave System *Removal of Existing Microwave Antenna Systems*	1	$10,000.00	$10,000.00
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$29,682.12	$29,682.12
Project Management	1	$9,815.68	$9,815.68
Total Equipment and Services			**$121,561.14**

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1.39 EVAC Microwave Network Backhaul System Equipment

EVAC Microwave Network Backhaul System Equipment			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Microwave Radio Loop Backhaul Indoor Equipment *Includes:* *MNI Proteus MXD, 6 GHz Gigabit Ethernet Radios, East-West Repeater, configured with ATPC TX Pwr, Standard, High or Ultra Hi Power depending on Application, All Indoor: Licensed for 155 Mbps in 30 MHz Channel. Equipped with ACM, & SHARP (Self-Healing Auto Ring Protection)*	1	$34,681.02	$34,681.02
Microwave Loop 155mph Antenna Systems Equipment *Includes:* *RFS Microwave Antennas with Radomes, 155 MPH Wind Kits an Two Back Brace Bar Kits for each Antenna. Eupen Waveguide ar Connectors, RFS Waveguide Flex, SitePro 1 Microwave Pipe Mounts, Installation Hardware & Consumables.*	1	$18,447.34	$18,447.34
MPLS Routing Equipment *Includes:* *Nokia SAR-8 7705 Chassis DC Powered Redundant Control Switch Modules Dual DC Power Feeds* *Two 8 Port SFP Ethernet Cards Eight GigE Ethernet SFP Modules, Four 6 Port E&M Analog VOIP Audio Cards*	1	$24,612.00	$24,612.00
Native Ethernet and TDM Protocol Capability to Support the County's Legacy T1 Circuits *Included in Microwave Radio Costs*	1	*Included*	*Included*
Switch, LAN, WAN Equipment *None Required*		*N/A*	*N/A*
Alarm Monitoring and Network Management Equipment *Microwave Alarm Equipment Listed with Network Management Equipment*		*N/A*	*N/A*
Physical Path Surveys *Included in Tower Services*	1	*Included*	*Included*
Tower Crew Services- New Microwave System *Installation of New Microwave Antenna Systems*	1	$10,850.00	$10,850.00
Tower Crew Services- Old Microwave System *Removal of Existing Microwave Antenna Systems*	1	$13,750.00	$13,750.00
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$29,682.12	$29,682.12
Project Management	1	$9,815.68	$9,815.68
Total Equipment and Services			**$141,838.16**

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1.40 Ormond Beach Microwave Network Backhaul System Equipment

Ormond Beach Microwave Network Backhaul System Equipment			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Microwave Radio Loop Backhaul Indoor Equipment *Includes:* *MNI Proteus MXD, 6 GHz Gigabit Ethernet Radios, East-West Repeater, configured with ATPC TX Pwr, Standard, High or Ultra Hi Power depending on Application, All Indoor, Licensed for 155 Mbps in 30 MHz Channel. Equipped with ACM, & SHARP (Self-Healing Auto Ring Protection)*	1	$34,972.20	$34,972.20
Microwave Loop 155mph Antenna Systems Equipment *Includes:* *RFS Microwave Antennas with Radomes, 155 MPH Wind Kits and Two Back Brace Bar Kits for each Antenna. Eupen Waveguide and Connectors, RFS Waveguide Flex, SitePro 1 Microwave Pipe Mounts, Installation Hardware & Consumables.* ***Additional Required Materials- Raise Antenna to Available Space on Tower For One Antenna. Add 25 Ft Waveguide Per County Request and Omnicom Report***	1	$18,245.38	$18,245.38
MPLS Routing Equipment *Includes:* *Nokia SAR-8 7705 Chassis DC Powered Redundant Control Switch Modules Dual DC Power Feeds* *Two 8 Port SFP Ethernet Cards Four GigE Ethernet SFP Modules, One 6 Port E&M Analog VOIP Audio Cards*	1	$17,052.00	$17,052.00
Native Ethernet and TDM Protocol Capability to Support the County's Legacy T1 Circuits *Included in Microwave Radio Costs*	1	*Included*	*Included*
Switch, LAN, WAN Equipment *None Required*		*N/A*	*N/A*
Alarm Monitoring and Network Management Equipment *Microwave Alarm Equipment Listed with Network Management Equipment*		*N/A*	*N/A*
Physical Path Surveys *Included in Tower Services*	1	*Included*	*Included*
Tower Crew Services- New Microwave System *Installation of New Microwave Antenna Systems* ***Additional Labor Required to Raise Antennas Per County Request and Omnicom Report***	1	$9,925.00	$9,925.00
Tower Crew Services- Old Microwave System *Removal of Existing Microwave Antenna System*	1	$3,750.00	$3,750.00
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$29,682.12	$29,682.12
Project Management	1	$9,815.68	$9,815.68
Total Equipment and Services			**$123,442.18**

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1.41 Plantation Bay Microwave Network Backhaul System Equipment

Plantation Bay Microwave Network Backhaul System Equipment			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Microwave Radio Loop Backhaul Indoor Equipment *Includes:* *MNI Proteus MXD, 6 GHz Gigabit Ethernet Radios, East-West Repeater, configured with ATPC TX Pwr, Standard, High or Ultra Hi Power depending on Application, All Indoor, Licensed for 155 Mbps in 30 MHz Channel. Equipped with ACM, & SHARP (Self-Healing Auto Ring Protection)*	1	$35,376.54	$35,376.54
Microwave Loop 155mph Antenna Systems Equipment *Includes:* *RFS Microwave Antennas with Radomes, 155 MPH Wind Kits and Two Back Brace Bar Kits for each Antenna. Eupen Waveguide and Connectors, RFS Waveguide Flex, SitePro 1 Microwave Pipe Mounts, Installation Hardware & Consumables.*	1	$20,148.98	$20,148.98
MPLS Routing Equipment *Includes:* *Nokia SAR-8 7705 Chassis DC Powered Redundant Control Switch Modules Dual DC Power Feeds* *Two 8 Port SFP Ethernet Cards Four GigE Ethernet SFP Modules* *One 6 Port E&M Analog VOIP Audio Cards*	1	$17,052.00	$17,052.00
Native Ethernet and TDM Protocol Capability to Support the County's Legacy T1 Circuits *Included in Microwave Radio Costs*	1	*Included*	*Included*
Switch, LAN, WAN Equipment *None Required*		*N/A*	*N/A*
Alarm Monitoring and Network Management Equipment *Microwave Alarm Equipment Listed with Network Management Equipment*		*N/A*	*N/A*
Physical Path Surveys *Included in Tower Services*	1	*Included*	*Included*
Tower Structural Analysis *New Tower- Not Required*		*N/A*	*N/A*
Tower Crew Services- New Microwave System *Installation of New Microwave Antenna Systems*	1	$12,425.00	$12,425.00
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$29,682.12	$29,682.12
Project Management	1	$14,723.52	$14,723.52
Total Equipment and Services			**$129,408.16**

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1.42 CR304 Microwave Network Backhaul System Equipment

CR304 Microwave Network Backhaul System Equipment			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Microwave Radio Loop Backhaul Indoor Equipment *Includes:* *MNI Proteus MXD, 6 GHz Gigabit Ethernet Radios, East-West Repeater, configured with ATPC TX Pwr, Standard, High or Ultra Hi Power depending on Application, All Indoor, Licensed for 155 Mbps in 30 MHz Channel. Equipped with ACM, & SHARP (Self-Healing Auto Ring Protection)* ***Added Diversity Receiver Option*** ***Reduced Radio Power*** ***Includes:*** ***6 GHz Link to Plantation Bay*** ***6 GHz Space Diversity Link to Barberville***	1	$37,639.60	$37,639.60
Microwave Loop 155mph Antenna Systems Equipment *Includes:* *RFS Microwave Antennas with Radomes, 155 MPH Wind Kits and Two Back Brace Bar Kits for each Antenna. Eupen Waveguide and Connectors, RFS Waveguide Flex, SitePro 1 Microwave Pipe Mounts, Installation Hardware & Consumables.* ***Added Diversity Receive Antenna*** ***Reduced Microwave Antenna Size***	1	$24,215.54	$24,215.54
MPLS Routing Equipment *No MPLS equipment Required. Microwave Repeater Site*		*N/A*	*N/A*
Native Ethernet and TDM Protocol Capability to Support the County's Legacy T1 Circuits *Included in Microwave Radio Costs*	1	*Included*	*Included*
Switch, LAN, WAN Equipment *None Required*		*N/A*	*N/A*
DC Power Breaker Panels *Includes:* *Newmar DST-20 Rack Mounted* *Breaker Panel Required DC Breakers* *(NOTE: Attach to Existing DC Power Plant)*	1	$1,722.36	$1,722.36
Alarm Monitoring and Network Management Equipment *Microwave Alarm Equipment Listed with Network Management Equipment*		*N/A*	*N/A*
Physical Path Surveys *Included in Tower Services*	1	*Included*	*Included*
Tower Structural Analysis *New Tower- Not Required*		*N/A*	*N/A*
Tower Crew Services- New Microwave System *Installation of New Microwave Antenna Systems* ***Added Diversity Receive Antenna*** ***Additional Labor Required to Raise Antennas Per County Request and Omnicom Report***	1	$15,925.00	$15,925.00

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Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$29,682.12	$29,682.12
Project Management	1	$4,907.84	$4,907.84
Total Equipment and Services			**$114,092.46**

1.43 Barberville Microwave Network Backhaul System Equipment

Barberville ***Microwave Network Backhaul System Equipment***			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Microwave Radio Loop Backhaul Indoor Equipment *Includes:* *MNI Proteus MXD, 6 GHz Gigabit Ethernet Radios, East-West Repeater, configured with ATPC TX Pwr, Standard, High or Ultra Hi Power depending on Application, All Indoor, Licensed for 155 Mbps in 30 MHz Channel. Equipped with ACM, & SHARP (Self-Healing Auto Ring Protection)* ***Added Diversity Receiver Option*** ***Reduced Radio Power*** ***Includes:*** ***6 GHz Space Diversity Link to CR304*** ***6 GHz Link to DeLeon***	1	$38,017.72	$38,017.72
Microwave Loop 155mph Antenna Systems Equipment *Includes:* *RFS Microwave Antennas with Radomes, 155 MPH Wind Kits and Two Back Brace Bar Kits for each Antenna. Eupen Waveguide and Connectors, RFS Waveguide Flex, SitePro 1 Microwave Pipe Mounts, Installation Hardware & Consumables.* ***Added Diversity Antenna*** ***Additional Required Materials- Raise Antenna to Available Space on Tower For One Antenna. Add 10 Ft Waveguide Per County Request and Omnicom Report***	1	$24,092.32	$24,092.32
MPLS Routing Equipment *Includes:* *Nokia SAR-8 7705 Chassis DC Powered Redundant Control Switch Modules Dual DC Power Feeds* *Three 8 Port SFP Ethernet Cards Four GigE Ethernet SFP Modules* *One 6 Port E&M Analog VOIP Audio Cards*	1	$17,052.00	$17,052.00
Native Ethernet and TDM Protocol Capability to Support the County's Legacy T1 Circuits *Included in Microwave Radio Costs*	1	*Included*	*Included*
Switch, LAN, WAN Equipment *None Required*		*N/A*	*N/A*
Alarm Monitoring and Network Management Equipment *Microwave Alarm Equipment Listed with Network Management Equipment*		*N/A*	*N/A*
Physical Path Surveys *Included in Tower Services*	1	*Included*	*Included*

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Tower Crew Services- New Microwave System *Installation of New Microwave Antenna Systems* ***Added Diversity Receive Antenna*** ***Additional labor required to raise antennas per County Request and Omnicom Report***	1	$16,000.00	$16,000.00
Tower Crew Services- Old Microwave System *Removal of Existing Microwave Antenna System*	1	$3,750.00	$3,750.00
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$29,682.12	$29,682.12
Project Management	1	$9,815.68	$9,815.68
Total Equipment and Services			**$138,409.84**

1.44 DeLeon Springs Microwave Network Backhaul System Equipment

DeLeon Springs Microwave Network Backhaul System Equipment

Description	Qty	Unit Cost	Extended Cost
Microwave Radio Loop Backhaul Indoor Equipment *Includes:* *MNI Proteus MXD, 6 GHz Gigabit Ethernet Radios, East-West Repeater, configured with ATPC TX Pwr, Standard, High or Ultra Hi Power depending on Application, All Indoor, Licensed for 155 Mbps in 30 MHz Channel. Equipped with ACM, & SHARP (Self-Healing Auto Ring Protection)* ***ADDED Dual 155 Mbps OPTION*** ***Includes:*** ***6 GHz Link to Barberville*** ***6 GHz Link to Deland*** ***Dual 6 GHz Link to EOC-A***	1	$86,074.02	$86,074.02
Microwave Loop 155mph Antenna Systems Equipment *Includes:* *RFS Microwave Antennas with Radomes, 155 MPH Wind Kits and Two Back Brace Bar Kits for each Antenna. Eupen Waveguide and Connectors, RFS Waveguide Flex, SitePro 1 Microwave Pipe Mounts, Installation Hardware & Consumables.*	1	$25,609.12	$25,609.12
MPLS Routing Equipment *Includes:* *Nokia SAR-8 7705 Chassis DC Powered Redundant Control Switch Modules Dual DC Power Feeds* *Three 8 Port SFP Ethernet Cards Six GigE Ethernet SFP Modules* *One 6 Port E&M Analog VOIP Audio Cards*	1	$20,778.00	$20,778.00
Native Ethernet and TDM Protocol Capability to Support the County's Legacy T1 Circuits *Included in Microwave Radio Costs*	1	*Included*	*Included*
Switch, LAN, WAN Equipment *None Required*		*N/A*	*N/A*

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Alarm Monitoring and Network Management Equipment *Microwave Alarm Equipment Listed with Network Management Equipment*		*N/A*	*N/A*
Physical Path Surveys *Included in Tower Services*	1	*Included*	*Included*
Tower Crew Services- New Microwave System *Installation of New Microwave Antenna Systems*	1	$15,525.00	$15,525.00
Tower Crew Services- Old Microwave System *Removal of Existing Microwave Antenna System*	1	$13,750.00	$13,750.00
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$29,682.12	$29,682.12
Project Management	1	$9,815.68	$9,815.68
Total Equipment and Services			**$201,233.94**

1.45 DeLand FDOT Microwave Network Backhaul System Equipment

DeLand FDOT Microwave Network Backhaul System Equipment

Description	Qty	Unit Cost	Extended Cost
Microwave Radio Loop Backhaul Indoor Equipment *Includes:* *MNI Proteus MXD, 6 GHz Gigabit Ethernet Radios, East-West Repeater, configured with ATPC TX Pwr, Standard, High or Ultra Hi Power depending on Application, All Indoor, Licensed for 155 Mbps in 30 MHz Channel. Equipped with ACM, & SHARP (Self-Healing Auto Ring Protection)*	1	$34,276.68	$34,276.68
Microwave Loop 155mph Antenna Systems Equipment *Includes:* *RFS Microwave Antennas with Radomes, 155 MPH Wind Kits and Two Back Brace Bar Kits for each Antenna. Eupen Waveguide and Connectors, RFS Waveguide Flex, SitePro 1 Microwave Pipe Mounts, Installation Hardware & Consumables.*	1	$18,059.98	$18,059.98
MPLS Routing Equipment *Includes:* *Nokia SAR-8 7705 Chassis DC Powered Redundant Control Switch Modules Dual DC Power Feeds* *Two 8 Port SFP Ethernet Cards Four GigE Ethernet SFP Modules* *One 6 Port E&M Analog VOIP Audio Cards*	1	$17,052.00	$17,052.00
Native Ethernet and TDM Protocol Capability to Support the County's Legacy T1 Circuits *Included in Microwave Radio Costs*	1	*Included*	*Included*
Switch, LAN, WAN Equipment *None Required*		*N/A*	*N/A*

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Alarm Monitoring and Network Management Equipment *Microwave Alarm Equipment Listed with Network Management Equipment*		*N/A*	*N/A*
Physical Path Surveys *Included in Tower Services*	1	*Included*	*Included*
Tower Crew Services- New Microwave System *Installation of New Microwave Antenna Systems*	1	$10,325.00	$10,325.00
Tower Crew Services- Old Microwave System *Removal of Existing Microwave Antenna System*	1	$5,000.00	$5,000.00
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$29,682.12	$29,682.12
Project Management	1	$9,815.68	$9,815.68
Total Equipment and Services			**$124,211.46**

1.46 Orange City Microwave Network Backhaul System Equipment

Orange City Microwave Network Backhaul System Equipment			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Microwave Radio Loop Backhaul Indoor Equipment *Includes:* *MNI Proteus MXD, 6 GHz Gigabit Ethernet Radios, East-West Repeater, configured with ATPC TX Pwr, Standard, High or Ultra Hi Power depending on Application, All Indoor, Licensed for 155 Mbps in 30 MHz Channel. Equipped with ACM, & SHARP (Self-Healing Auto Ring Protection)* ***Includes:*** ***6 GHz Link to Deland*** ***6 GHz Link to DeBary*** ***Reduced to A 6 Ft Dish and Upgraded Radio to Ultra-High Power***	1	$34,605.12	$34,605.12
Microwave Loop 155mph Antenna Systems Equipment *Includes:* *RFS Microwave Antennas with Radomes, 155 MPH Wind Kits and Two Back Brace Bar Kits for each Antenna. Eupen Waveguide and Connectors, RFS Waveguide Flex, SitePro 1 Microwave Pipe Mounts, Installation Hardware & Consumables.* ***Additional Required Materials- Raise Antenna to Available Space on Tower For One Antenna. Add 30 Ft Waveguide Per County Request and Omnicom Report***	1	$20,940.98	$20,940.98
MPLS Routing Equipment *Includes:* *Nokia SAR-8 7705 Chassis DC Powered Redundant Control Switch Modules Dual DC Power Feeds* *Two 8 Port SFP Ethernet Cards Four GigE Ethernet SFP Modules, One 6 Port E&M Analog VOIP Audio Cards*	1	$17,052.00	$17,052.00

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Native Ethernet and TDM Protocol Capability to Support the County's Legacy T1 Circuits *Included in Microwave Radio Costs*	1	*Included*	*Included*
Switch, LAN, WAN Equipment *None Required*		*N/A*	*N/A*
Alarm Monitoring and Network Management Equipment *Microwave Alarm Equipment Listed with Network Management Equipment*		*N/A*	*N/A*
Physical Path Surveys *Included in Tower Services*	1	*Included*	*Included*
Tower Crew Services - New Microwave System *Installation of New Microwave Antenna Systems* ***Additional Labor Required to Raise Antennas Per County Request and Omnicom Report***	1	$13,575.00	$13,575.00
Tower Crew Services - Old Microwave System *Removal of Existing Microwave Antenna System*	1	$8,750.00	$8,750.00
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$29,682.12	$29,682.12
Project Management	1	$9,815.68	$9,815.68
Total Equipment and Services			**$134,420.90**

1.47 DeBary Microwave Network Backhaul System Equipment

DeBary Microwave Network Backhaul System Equipment			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Microwave Radio Loop Backhaul Indoor Equipment *Includes:* *MNI Proteus MXD, 6 GHz Gigabit Ethernet Radios, East-West Repeater, configured with ATPC TX Pwr, Standard, High or Ultra Hi Power depending on Application, All Indoor, Licensed for 155 Mbps in 30 MHz Channel. Equipped with ACM, & SHARP (Self-Healing Auto Ring Protection)* ***Upgraded Radio to Ultra-High Power***	1	$35,376.54	$35,376.54
Microwave Loop 155mph Antenna Systems Equipment *Includes:* *RFS Microwave Antennas with Radomes, 155 MPH Wind Kits and Two Back Brace Bar Kits for each Antenna. Eupen Waveguide and Connectors, RFS Waveguide Flex, SitePro 1 Microwave Pipe Mounts, Installation Hardware & Consumables.*	1	$17,143.66	$17,143.66
MPLS Routing Equipment *Includes:* *Nokia SAR-8 7705 Chassis DC Powered Redundant Control Switch Modules Dual DC Power Feeds* *Two 8 Port SFP Ethernet Cards Four GigE Ethernet SFP Modules* *One 6 Port E&M Analog VOIP Audio Cards*	1	$17,052.00	$17,052.00

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

DocuSign Envelope ID: 316E69E6-6624-4FA0-84E7-B73365C142FF

Native Ethernet and TDM Protocol Capability to Support the County's Legacy T1 Circuits *Included in Microwave Radio Costs*	1	*Included*	*Included*
Switch, LAN, WAN Equipment *None Required*		*N/A*	*N/A*
Alarm Monitoring and Network Management Equipment *Microwave Alarm Equipment Listed with Network Management Equipment*		*N/A*	*N/A*
Physical Path Surveys *Included in Tower Services*	1	*Included*	*Included*
Tower Crew Services- New Microwave System *Installation of New Microwave Antenna Systems*	1	$10,850.00	$10,850.00
Tower Crew Services- Old Microwave System *Removal of Existing Microwave Antenna System*	1	$3,750.00	$3,750.00
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$29,682.12	$29,682.12
Project Management	1	$9,815.68	$9,815.68
Total Equipment and Services			**$123,670.00**

1.48 Deltona Microwave Network Backhaul System Equipment

Deltona Microwave Network Backhaul System Equipment			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Microwave Radio Loop Backhaul Indoor Equipment *Includes:* *MNI Proteus MXD, 6 GHz Gigabit Ethernet Radios, East-West Repeater, configured with ATPC TX Pwr, Standard, High or Ultra Hi Power depending on Application, All Indoor, Licensed for 155 Mbps in 30 MHz Channel. Equipped with ACM, & SHARP (Self-Healing Auto Ring Protection)* ***Added Diversity Receiver Option*** ***Reduced Radio Power*** ***Includes*** ***6 GHz Link to DeBary*** ***6 GHz Space Diversity Link to Lake Harney***	1	$31,970.00	$31,970.00

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Microwave Loop 155mph Antenna Systems Equipment *Includes:* *RFS Microwave Antennas with Radomes, 155 MPH Wind Kits and Two Back Brace Bar Kits for each Antenna. Eupen Waveguide and Connectors, RFS Waveguide Flex, SitePro 1 Microwave Pipe Mounts, Installation Hardware & Consumables.* ***Added Diversity Receive Antenna*** ***Reduced Antenna Size*** ***Additional Required Materials- Raise Antenna to Available Space on Tower For One Antenna. Add 70 Ft Waveguide Per County Request and Omnicom Report***	1	$24,713.44	$24,713.44
MPLS Routing Equipment *Includes:* *Nokia SAR-8 7705 Chassis DC Powered Redundant Control Switch Modules Dual DC Power Feeds* *Two 8 Port SFP Ethernet Cards Four GigE Ethernet SFP Modules* *One 6 Port E&M Analog VOIP Audio Cards*	1	$17,052.00	$17,052.00
Native Ethernet and TDM Protocol Capability to Support the County's Legacy T1 Circuits *Included in Microwave Radio Costs*	1	*Included*	*Included*
Switch, LAN, WAN Equipment *None Required*		*N/A*	*N/A*
Alarm Monitoring and Network Management Equipment *Microwave Alarm Equipment Listed with Network Management Equipment*		*N/A*	*N/A*
Physical Path Surveys *Included in Tower Services*	1	*Included*	*Included*
Tower Crew Services- New Microwave System *Installation of New Microwave Antenna Systems* ***Added Diversity Receive Antenna*** ***Additional Labor Required to Raise Antennas Per County Request and Omnicom Report***	1	$17,800.00	$17,800.00
Tower Crew Services- Old Microwave System *Removal of Existing Microwave Antenna System*	1	$3,750.00	$3,750.00
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$29,682.12	$29,682.12
Project Management	1	$9,815.68	$9,815.68
Total Equipment and Services			**$134,783.24**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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1.49 Lake Harney Microwave Network Backhaul System Equipment

Lake Harney Microwave Network Backhaul System Equipment			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Microwave Radio Loop Backhaul Indoor Equipment *Includes:* *MNI Proteus MXD, 6 GHz Gigabit Ethernet Radios, East-West Repeater, configured with ATPC TX Pwr, Standard, High or Ultra Hi Power depending on Application, All Indoor, Licensed for 155 Mbps in 30 MHz Channel. Equipped with ACM, & SHARP (Self-Healing Auto Ring Protection)* ***Added Diversity Receive Option*** ***Reduced Radio Power*** ***Includes:*** ***6 GHz Space Diversity Link to Deltona*** ***6 GHz Link to Edgewater***	1	$38,093.62	$38,093.62
Microwave Loop 155mph Antenna Systems Equipment *Includes:* *RFS Microwave Antennas with Radomes, 155 MPH Wind Kits and Two Back Brace Bar Kits for each Antenna. Eupen Waveguide and Connectors, RFS Waveguide Flex, SitePro 1 Microwave Pipe Mounts, Installation Hardware & Consumables.* ***Added Diversity Receive Antenna*** ***Reduced Antenna Size*** ***Additional Required Materials - Raise Antenna to Available Space on Tower For One Antenna. Add 30 Ft Waveguide***	1	$26,769.74	$26,769.74
MPLS Routing Equipment *Includes:* *Nokia SAR-8 7705 Chassis DC Powered Redundant Control Switch Modules Dual DC Power Feeds* *Two 8 Port SFP Ethernet Cards Six GigE Ethernet SFP Modules* *One 6 Port E&M Analog VOIP Audio Cards*	1	$17,052.00	$17,052.00
Native Ethernet and TDM Protocol Capability to Support the County's Legacy T1 Circuits *Included in Microwave Radio Costs*	1	*Included*	*Included*
Switch, LAN, WAN Equipment *None Required*		*N/A*	*N/A*
Alarm Monitoring and Network Management Equipment *Microwave Alarm Equipment Listed with Network Management Equipment*		*N/A*	*N/A*
Dehydrator System & 4 Port Manifold *Commscope HR300 Heat Regenerative Dehydrator*	1	$1,401.76	$1,401.76
Physical Path Surveys *Included in Tower Services*	1	*Included*	*Included*

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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Tower Crew Services- New Microwave System *Installation of New Microwave Antenna Systems* ***Added Diversity Receive Antenna*** ***Additional Labor Required to Raise Antennas Per County Request and Omnicom Report***	1	$17,175.00	$17,175.00
Tower Crew Services- Old Microwave System *Removal of Existing Microwave Antenna System*		*N/A*	*N/A*
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$29,682.12	$29,682.12
Project Management	1	$9,815.68	$9,815.68
Total Equipment and Services			**$139,989.92**

1.50 Lake Harney Microwave Link Equipment for Brevard ISSI

Lake Harney Microwave Link Equipment for Brevard County ISSI

Description	Qty	Unit Cost	Extended Cost
Microwave Radio Non-Protected Backhaul Indoor Equipment *Includes:* *MNI Proteus MXD, 6 GHz Gigabit Ethernet Non-Protected Configured with ATPC TX Pwr, Standard, High or Ultra Hi Power depending on Application, All Indoor, Licensed for 45 Mbps in 10 MHz Channel. Equipped with ACM & ATPC* ***6 GHz MSB Link to Brevard Mims site for ISSI & Interop*** ***Credit for Reuse of DeBary Microwave Equipment.*** ***Radios will be returned to MNI factory for Refrequency***	1	$12,032.88	$12,032.88
Microwave Loop 155mph Antenna Systems Equipment *Includes:* *RFS Microwave Antennas with Radomes, 155 MPH Wind Kits and Two Back Brace Bar Kits for each Antenna. Eupen Waveguide and Connectors, RFS Waveguide Flex, SitePro 1 Microwave Pipe Mounts, Installation Hardware & Consumables.*	1	$18,286.64	$18,286.64
MPLS Routing Equipment *None Required at Brevard End*		*N/A*	*N/A*
Native Ethernet and TDM Protocol Capability to Support the County's Legacy T1 Circuits *Included in Microwave Radio Costs*	1	*Included*	*Included*
Switch, LAN, WAN Equipment *None Required*		*N/A*	*N/A*
Alarm Monitoring and Network Management Equipment *Microwave Alarm Equipment Listed with Network Management Equipment*		*N/A*	*N/A*
Dehydrator System & 2 Port Manifold *Commscope HR300 Heat Regenerative Dehydrator*	1	$1,401.76	$1,401.76

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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48VDC Battery Plant/120VAC Inverters *Eltek FP216 -48/200 DC Power Equipment w Enersys 20-year 92 AH VRLA Batteries. No DC to AC Inverters are required. All equipment is DC Powered*	1	$3,797.87	$3,797.87
Physical Path Surveys *Included in Tower Services*	1	*Included*	*Included*
Tower Crew Services- New Microwave System *Installation of New Microwave Antenna Systems*	1	$11,550.00	$11,550.00
Tower Crew Services- Old Microwave System *Removal of Existing Microwave Antenna System*		*N/A*	*N/A*
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$37,864.12	$37,864.12
Project Management	1	$9,815.68	$9,815.68
Total Equipment and Services			**$94,748.95**

1.51 Edgewater Microwave Network Backhaul System Equipment

Edgewater Microwave Network Backhaul System Equipment			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Microwave Radio Loop Backhaul Indoor Equipment *Includes:* *MNI Proteus MXD, 6 GHz Gigabit Ethernet Radios, East-West Repeater, configured with ATPC TX Pwr, Standard, High or Ultra Hi Power depending on Application, All Indoor, Licensed for 155 Mbps in 30 MHz Channel. Equipped with ACM, & SHARP (Self-Healing Auto Ring Protection)*	1	$34,972.20	$34,972.20
Microwave Loop 155mph Antenna Systems Equipment *Includes:* *RFS Microwave Antennas with Radomes, 155 MPH Wind Kits and Two Back Brace Bar Kits for each Antenna. Eupen Waveguide and Connectors, RFS Waveguide Flex, SitePro 1 Microwave Pipe Mounts, Installation Hardware & Consumables.* ***Additional Required Materials- Raise Antenna to Available Space on Tower For One Antenna. Add 40 Ft Waveguide***	1	$18,790.80	$18,790.80
MPLS Routing Equipment *Includes:* *Nokia SAR-8 7705 Chassis DC Powered Redundant Control Switch Modules Dual DC Power Feeds* *Two 8 Port SFP Ethernet Cards Six GigE Ethernet SFP Modules* *One 6 Port E&M Analog VOIP Audio Cards*	1	$17,052.00	$17,052.00
Native Ethernet and TDM Protocol Capability to Support the County's Legacy T1 Circuits *Included in Microwave Radio Costs*	1	*Included*	*Included*
Switch, LAN, WAN Equipment *None Required*		*N/A*	*N/A*

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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Alarm Monitoring and Network Management Equipment *Microwave Alarm Equipment Listed with Network Management Equipment*		*N/A*	*N/A*
Physical Path Surveys *Included in Tower Services*	1	*Included*	*Included*
Tower Crew Services- New Microwave System *Installation of New Microwave Antenna Systems* ***Additional Labor Required to Raise Antennas***	1	$11,700.00	$11,700.00
Tower Crew Services- Old Microwave System *Removal of Existing Microwave Antenna System*	1	$8,750.00	$8,750.00
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$29,682.12	$29,682.12
Project Management		$9,815.68	$9,815.68
Total Equipment and Services			**$130,762.80**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

1.52 New Smyrna Beach Microwave Network Backhaul System Equipment

New Smyrna Beach Microwave Network Backhaul System Equipment			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Microwave Radio Loop Backhaul Indoor Equipment *Includes:* *MNI Proteus MXD, 6 GHz Gigabit Ethernet Radios, East-West Repeater, configured with ATPC TX Pwr, Standard, High or Ultra Hi Power depending on Application, All Indoor, Licensed for 155 Mbps in 30 MHz Channel. Equipped with ACM, & SHARP (Self-Healing Auto Ring Protection)* ***Includes:*** ***6 GHz Link to Edgewater*** ***6 GHz Link to Port Orange***	1	$34,276.68	$34,276.68
Microwave Loop 155mph Antenna Systems Equipment *Includes:* *RFS Microwave Antennas with Radomes, 155 MPH Wind Kits and Two Back Brace Bar Kits for each Antenna. Eupen Waveguide and Connectors, RFS Waveguide Flex, SitePro 1 Microwave Pipe Mounts, Installation Hardware & Consumables.*	1	$17,874.64	$17,874.64
MPLS Routing Equipment *Includes:* *Nokia SAR-8 7705 Chassis DC Powered Redundant Control Switch Modules Dual DC Power Feeds* *Two 8 Port SFP Ethernet Cards Six GigE Ethernet SFP Modules* *One 6 Port E&M Analog VOIP Audio Cards*	1	$17,052.00	$17,052.00
Native Ethernet and TDM Protocol Capability to Support the County's Legacy T1 Circuits *Included in Microwave Radio Costs*		*Included*	*Included*
Switch, LAN, WAN Equipment *None Required*		*N/A*	*N/A*
Alarm Monitoring and Network Management Equipment *Microwave Alarm Equipment Listed with Network Management Equipment*		*N/A*	*N/A*
Physical Path Surveys *Included in Tower Services*	1	*Included*	*Included*
Tower Crew Services- New Microwave System *Installation of New Microwave Antenna Systems*	1	$9,975.00	$9,975.00
Tower Crew Services- Old Microwave System *Removal of Existing Microwave Antenna System*	1	$7,500.00	$7,500.00
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$29,682.12	$29,682.12
Project Management	1	$9,815.68	$9,815.68
Total Equipment and Services			**$126,176.12**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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1.53 Port Orange Microwave Network Backhaul System Equipment

Port Orange Microwave Network Backhaul System Equipment			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Microwave Radio Loop Backhaul Indoor Equipment *Includes:* *MNI Proteus MXD, 6 GHz Gigabit Ethernet Radios, East-West Repeater, configured with ATPC TX Pwr, Standard, High or Ultra Hi Power depending on Application, All Indoor, Licensed for 155 Mbps in 30 MHz Channel. Equipped with ACM, & SHARP (Self-Healing Auto Ring Protection)* ***Includes:*** ***6 GHz Link to New Smyrna,*** ***6 GHz Link to EOC-B***	1	$34,605.12	$34,605.12
Microwave Loop 155mph Antenna Systems Equipment *Includes:* *RFS Microwave Antennas with Radomes, 155 MPH Wind Kits and Two Back Brace Bar Kits for each Antenna. Eupen Waveguide and Connectors, RFS Waveguide Flex, SitePro 1 Microwave Pipe Mounts, Installation Hardware & Consumables.* ***Additional Required Materials- Raise Antenna to Available Space on Tower For One Antenna. Add 50 Ft Waveguide***	1	$18,447.14	$18,447.14
MPLS Routing Equipment *Includes:* *Nokia SAR-8 7705 Chassis DC Powered Redundant Control Switch Modules Dual DC Power Feeds* *Two 8 Port SFP Ethernet Cards Eight GigE Ethernet SFP Modules, One 6 Port E&M Analog VOIP Audio Cards*	1	$17,808.00	$17,808.00
Native Ethernet and TDM Protocol Capability to Support the County's Legacy T1 Circuits *Included in Microwave Radio Costs*	1	*Included*	*Included*
Switch, LAN, WAN Equipment *None Required*		*N/A*	*N/A*
Alarm Monitoring and Network Management Equipment *Microwave Alarm Equipment Listed with Network Management Equipment*		*N/A*	*N/A*
Physical Path Surveys *Included in Tower Services*	1	*Included*	*Included*
Tower Crew Services- New Microwave System *Installation of New Microwave Antenna Systems* ***Additional Labor Required to Raise Antennas***	1	$11,200.00	$11,200.00
Tower Crew Services- Old Microwave System *Removal of Existing Microwave Antenna System*	1	$10,000.00	$10,000.00
Services: FCC Licensing, Frequency Coordination, Installation, Engineering, Optimization, Programming	1	$29,682.12	$29,682.12

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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Project Management	1	$9,815.68	$9,815.68
Total Equipment and Services			**$131,558.06**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Packages

1.54 Proposal with external power supply		**Unit Price**	**$**	**2,487.04**			
MAMW-SDMXX	MOBILE,XG-75M/M7300,764-870MHZ,HALF DPLX				**Qty-County**	**28**	
MW-Y3EWM	WARRANTY, EXTENDED 3 YR, MOBILE						
MAMW-NPL3R	Feature,Max(1024+) System/Groups				**Qty-City**	**26**	
MAMW-NPL5K	FEATURE,PROFILE OVER-THE-AIR-PROGRAMMING						
MAMW-NPL5L	Feature,Over-the-Air-Rekeying						
MAMW-NPL7P	Feature,P25 Data						
MW-PL4F	Feature, P25 Phase 2, TDMA						
MW-PL8Y	FEATURE, ENCRYPTION LITE						
MW-PL4U	Feature, Single-Key DES Encryption						
MAMW-NPL7M	Feature,256-AES,ECP Encryption						
MAMW-PKGED	Feature Package,EDACS Trunking						
MAMW-PKGPT	Feature Package,P25 Trunking						
MAMW-NCP9H	Control Unit,CH721,System,Front Mount						
MAMW-NZN6W	ACCESSORIES,XG-75M/M7300 FRONT MOUNT						
MAMW-ZN9F	Microphone,Desktop			**Total County**	**$**		**69,637.12**
Power supply	A/C Power Supply						
Labor	Programming			**Total City**	**$**		**64,663.04**
install	Install						
				Total	**$**		**134,300.16**
1.54a Proposal with internal power supply		**Unit Price**	**$**	**3,475.63**			
MAMW-SDMXX	MOBILE,XG-75M/M7300,764-870MHZ,HALF DPLX				**Qty-County**	**0**	
MW-Y3EWM	WARRANTY, EXTENDED 3 YR, MOBILE						
MAMW-NPL3R	Feature,Max(1024+) System/Groups				**Qty-City**	**0**	
MAMW-NPL5K	FEATURE,PROFILE OVER-THE-AIR-PROGRAMMING						
MAMW-NPL5L	Feature, Over-the-Air-Rekeying						
MAMW-NPL7P	Feature,P25 Data						
MW-PL4F	Feature, P25 Phase 2, TDMA						
MW-PL8Y	FEATURE, ENCRYPTION LITE						
MW-PL4U	Feature, Single-Key DES Encryption						
MAMW-NPL7M	Feature,256-AES,ECP Encryption						
MAMW-PKGED	Feature Package,EDACS Trunking						
MAMW-PKGPT	Feature Package,P25 Trunking						
MAMW-NZN8K	Desktop Station,CS-7000,Local Control			**Total County**	**$**		**-**
MAMW-NCP9H	Control Unit,CH721,System,Front Mount						
MAMW-ZN9F	Microphone, Desktop			**Total City**	**$**		**-**
Labor	Programming						
install	Install			**Total**	**$**		**-**
1.55 Low tier Control Station with external power supply		**Unit Price**	**$**	**1,729.90**			
DM-M78B	MOBILE,XG-25M,700/800 MHZ,35W				**Qty-County**	**19**	
DM-Y3EWM	WARRANTY, EXTENDED 3 YR, MOBILE						
DM-PL5K	FEATURE,PROFILE OTAP				**Qty-City**	**36**	
DM-PL7P	Feature,P25 Data						
DM-PL7Z	Feature,512 Systems/Groups						
DM-PL4F	Feature, P25 Phase 2, TDMA						
DM-PL8Y	FEATURE, ENCRYPTION LITE						
DM-PL9E	FEATURE, SINGLE-KEY AES ENCRYPTION						
DM-PL4U	Feature, Single-Key DES Encryption						
DM-PKGED	FEATURE PACKAGE, EDACS TRUNKING						
DM-PKGPT	Feature Package,P25 Trunking						
DM-ZN9X	Kit,Accessories,XG-25M			**Total County**	**$**		**32,868.10**
DM-MC9U	MICROPHONE,DESKTOP, XG25M						
Power supply	A/C Power supply			**Total City**	**$**		**62,276.40**
Labor	Programming						
install	Install			**Total**	**$**		**95,144.50**

Each must be ordered as a package.
Features and accessories can not be removed.
Features may be added to the packages by request.

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

1.56 High-Tier Multi-band Mobile Radio Equipment		**Unit Price**	**$**	**3,832.95**			
XZ-MPM1M	MOBILE, XL-200M, MULTIBAND				**Qty-County**	**84**	
XZ-Y3EWP	SERVICE ASSIST,EXT WARRANTY 3 YR, XL200M						
XZ-PL4J	FEATURE, VHF BAND				**Qty-City**	**0**	
XZ-PL4L	FEATURE, 700/800 MHZ BAND						
XZ-PL8Y	FEATURE, ENCRYPTION LITE						
XZ-PL4F	FEATURE, PHASE 2 TDMA						
XZ-PL5K	FEATURE P25 OTAP PROFILE						
XZ-PL5L	FEATURE, OTAR						
XZ-PKGED	FEATURE PACKAGE, EDACS TRUNKING						
XZ-PKG8F	FEATURE, 256-AES, 64-DES ENCRYPTION						
XZ-PKGPT	FEATURE PACKAGE, P25 TRUNKING						
XZ-MA4A	KIT, MOUNTING XL-MOBILE UNIVERSAL						
XZ-MC6A	MICROPHONE, XL, STANDARD MOBILE			**Total County**	**$**		**321,967.80**
XZ-CP6A	CONTROL UNIT, XL-CH						
	Mobile ½ -wave Antenna (multi-band)			**Total City**	**$**		**-**
	Personality Programming Cost and Template						
	Remote-Mount Standard Installation Cost			**Total**	**$**		**321,967.80**
1.57a Mid-Tier Mobile Radio Equipment (Public Safety)		**Unit Price**	**$**	**3,446.80**			
XT-MPS1M	MOBILE, XL-185M, SINGLE-BAND				**Qty-County**	**740**	
XT-Y3EWP	SERVICE ASSIST, EXT WARRANTY 3YR, XL185M						
XT-PL8Y	FEATURE, ENCRYPTION LITE				**Qty-City**	**280**	
XT-PL4F	FEATURE, PHASE 2 TDMA						
XT-PL5K	FEATURE P25 OTAP PROFILE						
XT-PL5L	FEATURE, OTAR						
XT-PKG8F	FEATURE, 256-AES, 64-DES ENCRYPTION						
XT-PL4L	FEATURE, SINGLE BAND, 7/800						
XT-PKGED	FEATURE PACKAGE, EDACS TRUNKING						
XT-PKGPT	FEATURE PACKAGE, P25 TRUNKING						
XT-MA4A	KIT, MOUNTING XL-MOBILE UNIVERSAL						
XT-MC6A	MICROPHONE, XL, STANDARD MOBILE			**Total County**	**$**		**2,550,632.00**
XT-CP6A	CONTROL UNIT, XL-CH						
	Mobile ½ -wave Antenna			**Total City**	**$**		**965,104.00**
	Personality Programming Cost and Template						
	Remote-Mount Standard Installation Cost			**Total**	**$**		**3,515,736.00**
1.57a-1 Mid-Tier Mobile Radio Equipment (Non-Public Safety) No Encryption		**Unit Price**	**$**	**2,988.00**			
XT-MPS1M	MOBILE, XL-185M, SINGLE-BAND				**Qty-County**	**1**	
XT-Y3EWP	SERVICE ASSIST, EXT WARRANTY 3YR, XL185M						
XT-PL8Y	FEATURE, ENCRYPTION LITE				**Qty-City**	**0**	
XT-PL4F	FEATURE, PHASE 2 TDMA						
XT-PL5K	FEATURE P25 OTAP PROFILE						
XT-PL4L	FEATURE, SINGLE BAND, 7/800						
XT-PKGED	FEATURE PACKAGE, EDACS TRUNKING						
XT-PKGPT	FEATURE PACKAGE, P25 TRUNKING						
XT-MA4A	KIT, MOUNTING XL-MOBILE UNIVERSAL						
XT-MC6A	MICROPHONE, XL, STANDARD MOBILE			**Total County**	**$**		**2,988.00**
XT-CP6A	CONTROL UNIT, XL-CH						
	Mobile ½ -wave Antenna			**Total City**	**$**		**-**
	Personality Programming Cost and Template						
	Remote-Mount Standard Installation Cost			**Total**	**$**		**2,988.00**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

1.58a Low-Tier Mobile Radio Equipment No-Encryption		**Unit Price**	**$**	**1,464.63**			
DM-M78B	MOBILE,XG-25M,700/800 MHZ,35W				**Qty-County**	**60**	
DM-Y3EWM	WARRANTY, EXTENDED 3 YR, MOBILE						
DM-PL5K	FEATURE,PROFILE OTAP				**Qty-City**	**226**	
DM-PL7Z	Feature,512 Systems/Groups						
DM-PL4F	Feature, P25 Phase 2, TDMA						
DM-PL8Y	FEATURE, ENCRYPTION LITE						
DM-PL9E	FEATURE, SINGLE-KEY AES ENCRYPTION						
DM-PKGED	FEATURE PACKAGE, EDACS TRUNKING						
DM-PKGPT	Feature Package,P25 Trunking						
DM-ZN9X	Kit,Accessories,XG-25M			**Total County**	**$**		**87,877.80**
DM-MC9R	Microphone,Standard,XG-25M						
	Mobile ½ -wave Antenna			**Total City**	**$**		**331,006.38**
	Personality Programming Cost and Template						
	Front-Mount Standard Installation Cost			**Total**	**$**		**418,884.18**
1.58a Low-Tier Mobile Radio Equipment (Public Safety) AES Encrypted		**Unit Price**	**$**	**1,805.96**			
DM-M78B	MOBILE,XG-25M,700/800 MHZ,35W				**Qty-County**	**14**	
DM-Y3EWM	WARRANTY, EXTENDED 3 YR, MOBILE						
DM-PL5K	FEATURE,PROFILE OTAP				**Qty-City**	**11**	
DM-PL5L	FEATURE,P25 OVER-THE-AIR REKEYING						
DM-PL7Z	Feature,512 Systems/Groups						
DM-PL4F	Feature, P25 Phase 2, TDMA						
DM-PL8Y	FEATURE, ENCRYPTION LITE						
DM-PL7M	FEATURE, 256-AES, ECP ENCRYPTION						
DM-PL4U	Feature, Single-Key DES Encryption						
DM-PKGED	FEATURE PACKAGE, EDACS TRUNKING						
DM-PKGPT	Feature Package,P25 Trunking						
DM-ZN9X	Kit,Accessories,XG-25M			**Total County**	**$**		**25,283.44**
DM-MC9R	Microphone,Standard,XG-25M						
	Mobile ½ -wave Antenna			**Total City**	**$**		**19,865.56**
	Personality Programming Cost and Template						
	Front-Mount Standard Installation Cost			**Total**	**$**		**45,149.00**
1.61a High-Tier Multi-Band Portable Radio Equipment +VHF		**Unit Price**	**$**	**3,036.00**			
XL-PFM1M	PORTABLE,XL-200P,FULL,MIDNT BLK,US				**Qty-County**	**62**	
XL-Y3EWP	SERVICE ASSIST, EXT WARRANTY 3YR, XL200P						
XL-PL5K	FEATURE,PROFILE OTAP OVER-THE-AIR PRGM				**Qty-City**	**10**	
XL-FW2X	OPERATION,LOAD NIFOG PERSONALITY						
XL-PL5L	FEATURE,P25 OTAR(OVER-THE-AIR-REKEYING)						
XL-PL4F	FEATURE,P25 PHASE 2 TDMA						
XL-PL8Y	FEATURE, ENCRYPTION LITE						
XL-PKGPD	FEATURE,256-AES,64-DES ENCRYPTION						
XL-PKG8F	FEATURE PACKAGE,P25 DATA						
XL-PKGPT	FEATURE PACKAGE,P25 TRUNKING						
XL-PKGF3	FEATURE PACKAGE,DUAL BAND VHF+7/800						
XS-PL8N	In Band GPS						
XL-NC5Z	ANTENNA,FLEX,HELICAL,136-870 MHZ						
XL-AE2V	SPEAKER MIC, REVO NC2, C1D2						
XL-HC3L	BELT CLIP,METAL						
XL-PKGED	FEATURE PACKAGE,EDACS TRUNKING						
XL-PA4K	BATTERY,LI-ION,HI-CAPACITY,4800MAH			**Total County**	**$**		**188,232.00**
XL-PA4K	BATTERY,LI-ION,HI-CAPACITY,4800MAH						
XL-CH4X	CHARGER,1-BAY			**Total City**	**$**		**30,360.00**
	Personality Programming Cost and Template			**Total**	**$**		**218,592.00**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

1.62 Mid-Tier Portable Radio Equipment		**Unit Price**	**$**	**2,426.24**			
XS-PFS1M	PORTABLE,XL-185P 7/800MHZ, FKP,BLK,US				**Qty-County**	**1478**	
XS-Y3EWP	SERVICE ASSIST, EXT WARRANTY 3YR, XL185P						
XS-PL5K	FEATURE,PROFILE OTAP OVER-THE-AIR PRGM				**Qty-City**	**1019**	
XS-FW2X	OPERATION,LOAD NIFOG PERSONALITY						
XS-PL5L	FEATURE,P25 OTAR(OVER-THE-AIR-REKEYING)						
XS-PL4F	FEATURE,P25 PHASE 2 TDMA						
XS-PL8Y	FEATURE, ENCRYPTION LITE						
XS-PKG8F	FEATURE,256-AES,64-DES ENCRYPTION						
XS-PKGED	FEATURE PACKAGE,EDACS TRUNKING						
XS-PKGPT	FEATURE PACKAGE,P25 TRUNKING						
XS-PL4L	FEATURE, SINGLE BAND 7/800						
XS-PL8N	In Band GPS						
XS-NC8D	ANTENNA,WHIP,1/2 WAVE 762-870MHZ						
XS-AE2V	SPEAKER MIC, REVO NC2, C1D2						
XS-HC3L	BELT CLIP,METAL			**Total County**	**$**		**3,585,982.72**
XS-PA4K	BATTERY,LI-ION,HI-CAPACITY,4800MAH						
XS-PA4K	BATTERY,LI-ION,HI-CAPACITY,4800MAH			**Total City**	**$**		**2,472,338.56**
XS-CH4X	CHARGER,1-BAY,XL-185P						
	Personality Programming Cost and Template			**Total**	**$**		**6,058,321.28**
1.62a Mid-Tier Portable Radio Equipment Non Public Safety (Non-Encrypted)		**Unit Price**	**$**	**1,878.70**			
XS-PFS1M	PORTABLE,XL-185P 7/800MHZ, FKP,BLK,US				**Qty-County**	**8**	
XS-Y3EWP	SERVICE ASSIST, EXT WARRANTY 3YR, XL185P						
XS-PL5K	FEATURE,PROFILE OTAP OVER-THE-AIR PRGM				**Qty-City**	**0**	
XS-FW2X	OPERATION,LOAD NIFOG PERSONALITY						
XS-PL4F	FEATURE,P25 PHASE 2 TDMA						
XS-PL8Y	FEATURE, ENCRYPTION LITE						
XS-PKGED	FEATURE PACKAGE,EDACS TRUNKING						
XS-PKGPT	FEATURE PACKAGE,P25 TRUNKING						
XS-PL4L	FEATURE, SINGLE BAND 7/800						
XS-NC8D	ANTENNA,WHIP,1/2 WAVE 762-870MHZ						
XS-AE2V	SPEAKER MIC, REVO NC2, C1D2						
XS-HC3L	BELT CLIP,METAL			**Total County**	**$**		**15,029.60**
XS-PA4K	BATTERY,LI-ION,HI-CAPACITY,4800MAH						
XS-PA4K	BATTERY,LI-ION,HI-CAPACITY,4800MAH			**Total City**	**$**		**-**
XS-CH4X	CHARGER,1-BAY,XL-185P						
	Personality Programming Cost and Template			**Total**	**$**		**15,029.60**
1.63 Low Tier Portable XG-15P WITH In-Band GPS Public Safety		**Unit Price**	**$**	**1,165.83**			
XR-PF78B-T-PH2	PORTABLE PKG,XG-15P,768-861MHZ,P25T,TDMA				**Qty-County**	**0**	
XR-Y3EWP	WARRANTY, EXTENDED 3 YR, PORTABLE						
XR-PL5K	FEATURE,PROFILE OTAP OVER-THE-AIR PRGM				**Qty-City**	**0**	
XR-PL8Y	FEATURE, ENCRYPTION LITE						
XR-PL9E	FEATURE, SINGLE-KEY AES ENCRYPTION						
XR- PL8N	FEATURE, IN-BAND GPS						
XRAE9R	SPEAKER MIC,GPS			**Total County**	**$**		**-**
YR-NC8D	Antenna, Enhanced, Whip,1/2 wave						
XR-PA3R	BATTERY, LI-ION, 2400 MAH			**Total City**	**$**		**-**
XR-CH5X	CHARGER, 1-BAY, TRI-CHEMISTRY						
	Personality Programming Cost and Template			**Total**	**$**		**-**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

1.63a Low Tier Portable XG-15P Non Public Safety		**Unit Price**	**$**	**964.95**			
XR-PF78B-T-PH2	PORTABLE PKG,XG-15P,768-861MHZ,P25T,TDMA				**Qty-County**	**0**	
XR-Y3EWP	WARRANTY, EXTENDED 3 YR, PORTABLE						
XR-PL5K	FEATURE,PROFILE OTAP OVER-THE-AIR PRGM				**Qty-City**	**0**	
XR-PL8Y	FEATURE, ENCRYPTION LITE						
XR-PL9E	FEATURE, SINGLE-KEY AES ENCRYPTION						
YR-NC8D	Antenna, Enhanced, Whip,1/2 wave			**Total County**	**$**		**-**
XR-AE6A	SPEAKER MIC,COILED						
XR-PA3R	BATTERY, LI-ION, 2400 MAH			**Total City**	**$**		**-**
XR-CH5X	CHARGER, 1-BAY, TRI-CHEMISTRY						
	Personality Programming Cost and Template			**Total**	**$**		**-**
~~**1.63b XG-25P Low-Tier Portable Radio Equipment - No Encryption**~~		~~**Unit Price**~~	~~**$**~~	~~**1,117.83**~~			
~~DPXG-PB78B~~	~~Portable,XG-25P,764-870MHz,Scan~~				~~**Qty-County**~~	~~**446**~~	
~~DP-Y3EWP~~	~~WARRANTY, EXTENDED 3 YR, PORTABLE~~						
~~DP-PL7Z~~	~~Feature,512 Systems/Groups~~				~~**Qty-City**~~	~~**779**~~	
~~DP-PL5K~~	~~Feature, Profile OTAP~~						
~~DP-PL4F~~	~~Feature,P25 Phase 2, TDMA~~						
~~DP-PL4U~~	~~Feature, Single-Key DES Encryption~~						
~~DP-PKGPT~~	~~Feature Package,P25 Trunking~~						
~~DP-PKGED~~	~~Feature Package,EDACS Trunking~~						
~~DP-PA3R~~	~~BATTERY,LI-ION,2400 MAH~~						
~~DP-PA3R~~	~~BATTERY,LI-ION,2400 MAH~~						
~~DP-NC8D~~	~~ANTENNA,ENHANCED,WHIP,1/2WAVE 762-870MHZ~~			~~**Total County**~~	~~**$**~~		~~**498,552.18**~~
~~DP-AE9D~~	~~SPEAKER MIC,FM~~						
~~DP-HC7P~~	~~Belt Clip, Metal~~			~~**Total City**~~	~~**$**~~		~~**870,789.57**~~
~~DP-CH5X~~	~~CHARGER, 1-BAY, TRI-CHEMISTRY~~						
	~~Personality Programming Cost and Template~~			~~**Total**~~	~~**$**~~		~~**1,369,341.75**~~
~~**1.63c XG-25P Low-Tier Portable Radio Equipment (Public Safety) Encrypted**~~		~~**Unit Price**~~	~~**$**~~	~~**1,727.59**~~			
~~DPXG-PB78B~~	~~Portable,XG-25P,764-870MHz,Scan~~				~~**Qty-County**~~	~~**393**~~	
~~DP-Y3EWP~~	~~WARRANTY, EXTENDED 3 YR, PORTABLE~~						
~~DP-PL7Z~~	~~Feature,512 Systems/Groups~~				~~**Qty-City**~~	~~**41**~~	
~~DP-PL5K~~	~~Feature, Profile OTAP~~						
~~DP-PL4F~~	~~Feature,P25 Phase 2, TDMA~~						
~~DP-PL5L~~	~~Feature,P25 OTAR(Over-the-Air-Rekeying)~~						
~~DP-PL4U~~	~~Feature, Single-Key DES Encryption~~						
~~DP-PL7M~~	~~Feature,AES Encryption~~						
~~DP-PKGPT~~	~~Feature Package,P25 Trunking~~						
~~DP-PKGED~~	~~Feature Package,EDACS Trunking~~						
~~DP-PL8N~~	~~In Band GPS~~						
~~DP-PA3R~~	~~BATTERY,LI-ION,2400 MAH~~						
~~DP-PA3R~~	~~BATTERY,LI-ION,2400 MAH~~						
~~DP-NC8D~~	~~ANTENNA,ENHANCED,WHIP,1/2WAVE 762-870MHZ~~			~~**Total County**~~	~~**$**~~		~~**678,942.87**~~
~~DP-AE9R~~	~~SPEAKER MIC,GPS (Previously Speaker Mic)~~						
~~DP-HC7P~~	~~Belt Clip, Metal~~			~~**Total City**~~	~~**$**~~		~~**70,831.19**~~
~~DP-CH5X~~	~~CHARGER, 1-BAY, TRI-CHEMISTRY~~						
	~~Personality Programming Cost and Template~~			~~**Total**~~	~~**$**~~		~~**749,774.06**~~

1.63b XG-25P Low Tier Portable Radio Equipment - No Encryption replaced by 1.63d XL95P Portable Radio Equipment - No Encryption.

XG-25P no longer available from manufacturer - 08/05/2021.

1.63c XG-25P Low Tier Portable Radio Equipment - (Public Safety) Encrypted replaced by 1.63e XL95P Portable Radio Equipment (Public Safety) Encrypted.

XG-25P no longer available from manufacturer - 08/05/2021.

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

1.63d XL95P Portable Radio Equipment - No Encryption		Unit Price	$1,117.83
XN-PF78M	PORTABLE,XL-95P,7/800MHZ,BLK inc GPS	Qty-County	446
XN-Y3EWP	SERVICE ASSIST, EXT WARRANTY 3YR, XL95P		
XN-FW2X	OPERATION,LOAD NIFOG PERSONALITY	Qty-City	779
XN-PL5K	FEATURE,PROFILE OTAP OVER-THE-AIR PRGM		
XN-PL4F	FEATURE,P25 PHASE 2 TDMA		
XN-PL8Y	FEATURE, ENCRYPTION LITE		
XN-P25ED	FEATURE PACKAGE, P25 AND EDACS TRUNKING		
XN-PA3R	BATTERY, LI-ION, 3100 MAH		
XN-PA3R	BATTERY, LI-ION, 3100 MAH		
XN-NC8D	ANTENNA,WHIP,1/2 WAVE,762-870MHZ	Total County	$498,552.18
XN-AE9D	SPEAKER MIC		
XN-HC2G	BELT CLIP,STANDARD,XL-95	Total City	$870,789.57
XN-CH5X	CHARGER,1-BAY,TRI-CHEMISTRY		
	Personality Programming Cost and Template	Total	$1,369,341.75

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25

1.63e XL95P Portable Radio Equipment (Public Safety) Encrypted		Unit Price	$1,727.59
XN-PF78M	PORTABLE,XL-95P,7/800MHZ,BLK inc GPS	Qty-County	393
XN-Y3EWP	SERVICE ASSIST, EXT WARRANTY 3YR, XL95P		
XN-FW2X	OPERATION,LOAD NIFOG PERSONALITY	Qty-City	41
XN-PL5K	FEATURE,PROFILE OTAP OVER-THE-AIR PRGM		
XN-PL4F	FEATURE,P25 PHASE 2 TDMA		
XN-PL5L	FEATURE,P25 OTAR(OVER-THE-AIR-REKEYING)		
XN-PL8Y	FEATURE, ENCRYPTION LITE		
XN-PKG8F	FEATURE,256-AES,64-DES ENCRYPTION		
XN-P25ED	FEATURE PACKAGE, P25 AND EDACS TRUNKING		
XN-PL8N	FEATURE, IN-BAND GPS		
XN-PA3R	BATTERY, LI-ION, 3100 MAH		
XN-PA3R	BATTERY, LI-ION, 3100 MAH		
XN-NC8D	ANTENNA,WHIP,1/2 WAVE,762-870MHZ	Total County	$678,942.87
XN-AE9D	SPEAKER MIC		
XN-HC2G	BELT CLIP,STANDARD,XL-95	Total City	$70,831.19
XN-CH5X	CHARGER,1-BAY,TRI-CHEMISTRY		
	Personality Programming Cost and Template	Total	$749,774.06

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25

1.65 Propagation Software and Training

Propagation Software and Training		
Radio Propagation Software, Databases, and Perpetual License for three (3) concurrent users *Existing License- No Charge*		*N/C*
On-Site Radio Propagation Software Training *Web Based per Student*		$1,600.00
Total Propagation Software and Services		**$1,600.00**

1.66 Programming Equipment and Accessories

Test Equipment			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Five (5) sets of programming software, cables, and required interface devices for each model of software programmable infrastructure equipment included in the system infrastructure. NOTE: Volusia County already owns 5 copies of L3Harris Device Manager. Ci will supply the updated release when available at No Charge	5	*N/C*	*N/C*
Four (4) sets of programming software, cables, and required interface devices for each model of user equipment included with the system procurement.	4	$917.89	$3,671.56
Total			**$3,671.56**

1.67 Training

Please list and price a Training Plan as described in this RFP. Please be descriptive on each line item so that the County understands the content, location, and the extent of training proposed in the system.	
On-site Dispatch Console Supervisor/Operator "Train-the-Trainer" Training *Includes:* ***Console Configuration Training -*** *On Site 1 day for 6 Students* ***Console Equipment Operator -*** *Conduct Five 4 Hour Train the Trainer Sessions on site over 3 consecutive days* ***Web-based Training -*** *Provide a 1-year license for unlimited access to the Symphony Console Operation web-based Training*	$34,300.00
On-Site System Management Training *Includes:* ***P25 Fleet Mapping Workshop -*** *Conduct a Four Day on Site Course* ***P25 Overview-Virtual Classroom -*** *Conduct a special virtual classroom course for up to six system managers* ***Web Based Training -*** *Provide the six system managers with one year of unlimited access to the System Manager web-based training package* ***Unified System Manager -*** *Conduct a two-day course on site 1 time for up to six system managers* ***Regional Network Manager -*** *Conduct a two-day course on site 1 time for up to six system managers*	$57,400.00

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

On-Site Radio User Operator Trainer Training ("Train-the-Trainer") *Includes:* ***User Equipment Operator Training -*** *Conduct three one day, Train the trainer sessions on site over consecutive days. Max Class size is 15 students per session* ***Web Based Training -*** *Provide a 1-year license for unlimited access to the Radio Operation web-based training program for up to 500 students*	$24,325.00
On-Site Subscriber Maintenance Training	$22,685.00
On-Site Subscriber Programming Training **Radio Programming -** *Conduct 2-day Course on site for up to ten technicians*	$9,975.00
On-Site Radio and Backhaul Systems Maintenance Training *Includes:* ***Introduction to Networking*** *- 4.5 Days on site P25 System Maintenance 5 Days on Site* ***Regional Network Manager*** *- 2 days on Site* ***Network Operations & Maintenance*** *- 3 Days on Site MASTR V Station Maintenance 2 Days on Site* ***P25 Simulcast System Maintenance*** *- 3 Days on Site Conduct each course on site one time for up to 10 technicians*	$93,720.00
Microwave System Maintenance **On Site Training for up to 6 technicians**	$16,373.70
Total Training	**$258,778.70**

1.68 Infrastructure Extended Maintenance Pricing

Maintenance Period	Cost
Year 3	
Local on-site technical response, factory depot equipment repair/replacement support, and annual preventative maintenance checks for P25 system infrastructure and dispatch console equipment.	*Included*
Local on-site technical response, factory depot equipment repair/replacement support, and annual preventative maintenance checks for microwave backhaul equipment.	*Included*
Local on-site technical response and software/firmware support services for P25 infrastructure and dispatch console equipment.	*Included*
Establish and maintain a database of all user radios for the County and Cities.	*Included*
Total Maintenance Year 3:	*Included*

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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Maintenance Period	Cost
Year 4	
Local on-site technical response, factory depot equipment repair/replacement support, and annual preventative maintenance checks for P25 system infrastructure and dispatch console equipment.	$311,355.83
Local on-site technical response, factory depot equipment repair/replacement support, and annual preventative maintenance checks for microwave backhaul equipment.	$34,786.35
Local on-site technical response and software/firmware support services for P25 infrastructure and dispatch console equipment.	$183,006.40
Establish and maintain a database of all radios for the County and Cities.	*Included*
Total Maintenance Year 4:	**$529,148.57**

Maintenance Period	Cost
Year 5	
Local on-site technical response, factory depot equipment repair/replacement support, and annual preventative maintenance checks for P25 system infrastructure and dispatch console equipment.	$318,494.39
Local on-site technical response, factory depot equipment repair/replacement support, and annual preventative maintenance checks for microwave backhaul equipment.	$35,829.94
Local on-site technical response and software/firmware support services for P25 infrastructure and dispatch console equipment.	$353,804.49
Establish and maintain a database of all radios for the County and Cities.	*Included*
Technology Update	$464,703.50
Total Maintenance Year 5:	**$1,172,832.32**

Maintenance Period	Cost
Year 6	
Local on-site technical response, factory depot equipment repair/replacement support, and annual preventative maintenance checks for P25 system infrastructure and dispatch console equipment.	$325,847.12
Local on-site technical response, factory depot equipment repair/replacement support, and annual preventative maintenance checks for microwave backhaul equipment.	$36,904.848
Local on-site technical response and software/firmware support services for P25 infrastructure and dispatch console equipment.	$194,151.49
Establish and maintain a database of all radios for the County and Cities.	*Included*
Total Maintenance Year 6:	**$556,903.44**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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Maintenance Period	Cost
Year 7	
Local on-site technical response, factory depot equipment repair/replacement support, and annual preventative maintenance checks for P25 system infrastructure and dispatch console equipment.	$534,833.49
Local on-site technical response, factory depot equipment repair/replacement support, and annual preventative maintenance checks for microwave backhaul equipment.	$36,904.85
Local on-site technical response and software/firmware support services for P25 infrastructure and dispatch console equipment.	$199,976.03
Establish and maintain a database of all radios for the County and Cities.	*Included*
Total Maintenance Year 7:	**$771,714.37**

Maintenance Period	Cost
Year 8	
Local on-site technical response, factory depot equipment repair/replacement support, and annual preventative maintenance checks for P25 system infrastructure and dispatch console equipment.	$352,274.50
Local on-site technical response, factory depot equipment repair/replacement support, and annual preventative maintenance checks for microwave backhaul equipment.	$39,152.34
Local on-site technical response and software/firmware support services for P25 infrastructure and dispatch console equipment.	$457,628.67
Establish and maintain a database of all radios for the County and Cities.	*Included*
Total Maintenance Year 8:	**$849,055.51**

Maintenance Period	Cost
Year 9	
Local on-site technical response, factory depot equipment repair/replacement support, and annual preventative maintenance checks for P25 system infrastructure and dispatch console equipment.	$360,309.02
Local on-site technical response, factory depot equipment repair/replacement support, and annual preventative maintenance checks for microwave backhaul equipment.	$40,326.91
Local on-site technical response and software/firmware support services for P25 infrastructure and dispatch console equipment.	$212,154.57
Establish and maintain a database of all radios for the County and Cities.	*Included*
Total Maintenance Year 9:	**$612,790.50**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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Maintenance Period	Cost
Year 10	
Local on-site technical response, factory depot equipment repair/replacement support, and annual preventative maintenance checks for P25 system infrastructure and dispatch console equipment.	$368,584.58
Local on-site technical response, factory depot equipment repair/replacement support, and annual preventative maintenance checks for microwave backhaul equipment.	$41,536.72
Local on-site technical response and software/firmware support services for P25 infrastructure and dispatch console equipment.	$383,827.11
Establish and maintain a database of all radios for the County and Cities.	*Included*
Technology Update	$464,703.50
Total Maintenance Year 10:	**$1,258,651.91**

Maintenance Period	Cost
Year 11	
Local on-site technical response, factory depot equipment repair/replacement support, and annual preventative maintenance checks for P25 system infrastructure and dispatch console equipment.	$347,625.85
Local on-site technical response, factory depot equipment repair/replacement support, and annual preventative maintenance checks for microwave backhaul equipment.	$42,782.82
Local on-site technical response and software/firmware support services for P25 infrastructure and dispatch console equipment.	$225,074.79
Establish and maintain a database of all radios for the County and Cities.	*Included*
Total Maintenance Year 11:	**$615,483.46**

Maintenance Period	Cost
Year 12	
Local on-site technical response, factory depot equipment repair/replacement support, and annual preventative maintenance checks for P25 system infrastructure and dispatch console equipment.	$356,405.39
Local on-site technical response, factory depot equipment repair/replacement support, and annual preventative maintenance checks for microwave backhaul equipment.	$44,066.31
Local on-site technical response and software/firmware support services for P25 infrastructure and dispatch console equipment.	$115,913.52
Establish and maintain a database of all radios for the County and Cities.	*Included*
Total Maintenance Year 12:	**$516,385.21**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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Maintenance Period	Cost
Year 13	
Local on-site technical response, factory depot equipment repair/replacement support, and annual preventative maintenance checks for P25 system infrastructure and dispatch console equipment.	$376,835.61
Local on-site technical response, factory depot equipment repair/replacement support, and annual preventative maintenance checks for microwave backhaul equipment.	$45,388.29
Local on-site technical response and software/firmware support services for P25 infrastructure and dispatch console equipment.	$119,390.92
Establish and maintain a database of all radios for the County and Cities.	*Included*
Total Maintenance Year 13:	**$541,614.83**

Maintenance Period	Cost
Year 14	
Local on-site technical response, factory depot equipment repair/replacement support, and annual preventative maintenance checks for P25 system infrastructure and dispatch console equipment.	$576,509.32
Local on-site technical response, factory depot equipment repair/replacement support, and annual preventative maintenance checks for microwave backhaul equipment.	$46,749.94
Local on-site technical response and software/firmware support services for P25 infrastructure and dispatch console equipment.	$122,972.65
Establish and maintain a database of all radios for the County and Cities.	*Included*
Total Maintenance Year 14:	**$746,231.91**

Maintenance Period	Cost
Year 15	
Local on-site technical response, factory depot equipment repair/replacement support, and annual preventative maintenance checks for P25 system infrastructure and dispatch console equipment.	$395,743.46
Local on-site technical response, factory depot equipment repair/replacement support, and annual preventative maintenance checks for microwave backhaul equipment.	$48,152.44
Local on-site technical response and software/firmware support services for P25 infrastructure and dispatch console equipment.	$126,661.83
Establish and maintain a database of all radios for the County and Cities.	*Included*
Technology Update	$115,000.00
Total Maintenance Year 15:	**$685,557.73**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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Maintenance Period	Cost
Year 16	
Local on-site technical response, factory depot equipment repair/replacement support, and annual preventative maintenance checks for P25 system infrastructure and dispatch console equipment.	$405,624.91
Local on-site technical response, factory depot equipment repair/replacement support, and annual preventative maintenance checks for microwave backhaul equipment.	$49,597.02
Local on-site technical response and software/firmware support services for P25 infrastructure and dispatch console equipment.	$130,461.68
Establish and maintain a database of all radios for the County and Cities.	*Included*
Total Maintenance Year 16:	**$585,683.60**

Maintenance Period	Cost
Year 17	
Local on-site technical response, factory depot equipment repair/replacement support, and annual preventative maintenance checks for P25 system infrastructure and dispatch console equipment.	$415,802.80
Local on-site technical response, factory depot equipment repair/replacement support, and annual preventative maintenance checks for microwave backhaul equipment.	$51,084.93
Local on-site technical response and software/firmware support services for P25 infrastructure and dispatch console equipment.	$134,375.53
Establish and maintain a database of all radios for the County and Cities.	*Included*
Total Maintenance Year 17:	**$601,263.26**

Total Infrastructure Extended Maintenance Costs	Cost
Total Maintenance Cost Year 3 through Year 17:	**$10,043,316.66**
Annual Cost Escalation Factor After Year 17 (%):	**$0.00**
OPTIONAL COST for system monitoring and local on-site technical response service dispatch, years 3 through 17.	**$1,429,740.04**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

1.69 Subscriber Extended Maintenance Pricing - Portable

Subscriber Maintenance	Cost	Cost
Years	**4 -17**	**6 -17**
For subscriber equipment with a 3- or 5-year warranty, the Contractor shall provide an optional annual per radio maintenance cost for years 4 - 17 and years 6 – 17. The Contractor shall offer the subscriber maintenance plan on a monthly and annual subscription rate based on the quantity of radios proposed in this RFP for public safety. The subscription shall include local and manufacturer's depot support of County provided user equipment as required.		
As part of the warranty and maintenance agreement, the Contractor shall perform a regular preventative maintenance on subscribers at a minimum of twelve-month intervals.		
Total Annual Per Radio Year 4:	*N/A*	*N/A*
Total Annual Per Radio Year 5:	*N/A*	*N/A*
Total Annual Per Radio Year 6:	**$120.00**	**$120.00**
Total Annual Per Radio Year 7:	**$120.00**	**$120.00**
Total Annual Per Radio Year 8:	**$120.00**	**$120.00**
Total Annual Per Radio Year 9:	**$120.00**	**$120.00**
Total Annual Per Radio Year 10:	**$120.00**	**$120.00**
Total Annual Per Radio Year 11:	**$132.00**	**$132.00**
Total Annual Per Radio Year 12:	**$132.00**	**$132.00**
Total Annual Per Radio Year 13:	**$132.00**	**$132.00**
Total Annual Per Radio Year 14:	**$132.00**	**$132.00**
Total Annual Per Radio Year 15:	**$132.00**	**$132.00**
Total Annual Per Radio Year 16:	**$144.00**	**$144.00**
Total Annual Per Radio Year 17:	**$144.00**	**$144.00**
TOTAL	**$1,548.00**	**$1,548.00**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

1.70 Subscriber Extended Maintenance Pricing - Mobile

Subscriber Maintenance	Cost	Cost
Years	**4 -17**	**6 -17**
For subscriber equipment with a 3- or 5-year warranty, the Contractor shall provide an optional annual per radio maintenance cost for years 4 - 17 and years 6 – 17. The Contractor shall offer the subscriber maintenance plan on a monthly and annual subscription rate based on the quantity of radios proposed in this RFP for public safety. The subscription shall include local and manufacturer's depot support of County provided user equipment as required.		
As part of the warranty and maintenance agreement, the Contractor shall perform a regular preventative maintenance on subscribers at a minimum of twelve-month intervals.		
Total Annual Per Radio Year 4:	*N/A*	*N/A*
Total Annual Per Radio Year 5:	*N/A*	*N/A*
Total Annual Per Radio Year 6:	**$120.00**	**$120.00**
Total Annual Per Radio Year 7:	**$120.00**	**$120.00**
Total Annual Per Radio Year 8:	**$120.00**	**$120.00**
Total Annual Per Radio Year 9:	**$120.00**	**$120.00**
Total Annual Per Radio Year 10:	**$120.00**	**$120.00**
Total Annual Per Radio Year 11:	**$132.00**	**$132.00**
Total Annual Per Radio Year 12:	**$132.00**	**$132.00**
Total Annual Per Radio Year 13:	**$132.00**	**$132.00**
Total Annual Per Radio Year 14:	**$132.00**	**$132.00**
Total Annual Per Radio Year 15:	**$132.00**	**$132.00**
Total Annual Per Radio Year 16:	**$144.00**	**$144.00**
Total Annual Per Radio Year 17:	**$144.00**	**$144.00**
TOTAL	**$1,548.00**	**$1,548.00**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25

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1.72 (Optional) System Features Equipment and Services

Optional System Features and Equipment and Services			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Zetron Model 25 FSA over P25 RF System *Included with Dispatch Center Services*	1	*Included*	*Included*
Technology Evolution Equipment	Lot	$0.00	$0.00
Recommended Test Equipment (1 Set) *Freedom Service Monitor w P25 Phase 2*	Lot	$42,500.00	$42,500.00
Total Optional Equipment and Services			**$42,500.00**

1.72a (Optional) System Features Equipment and Services

Optional System Features and Equipment and Services			
Description	**Qty**	**Unit Cost**	**Extended Cost**
L3Harris Status Aware ***Includes:*** ***Status Aware Software*** ***License Status Aware Devices 6000***	1	$136,875.00	$136,875.00
L3Harris Engineering Development and Support Fee - Fire **Note: All AVL Systems must be certified by the L3Harris Lab.**	1	$30,000.00	$30,000.00
CADLINK II API	3	$7,496.25	$22,488.75
L3Harris Engineering Development and Support Fee – Sheriff's Department **Note: All AVL Systems must be certified by the L3Harris Lab.**	1	$30,000.00	$30,000.00
Total Optional Equipment and Services			**$219,363.75**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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1.73 (Optional) Hospital Control Station Equipment and Services

Hospital Control Station Radios Equipment (Optional Purchase by Hospitals)			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Control Station Radio P25 Trunked with Remote Operation, P25 Data, 700/800 MHz FDMA/TDMA, 120VAC External Power Supply, Desk Microphone, AES Multi-key Voice Encryption, OTAR and OTAP	1	$5,421.26	$5,421.26
Desktop Remote Control Unit and Cabling	1	$2,466.00	$2,466.00
Antenna System	1	$1,346.91	$1,346.91
Services: Installation, Engineering, Optimization, Programming	1	$866.00	$866.00
Project Management	1	$0.00	$0.00
Total Equipment and Services			**$10,100.18**

1.74 Voice Logging Recorder System at EOSCC

Voice Logging Recorder System – Option Taken			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Logging Recorder System sized and in accordance with the requirements specified in the RFP Document EXACOM Hindsight 600	1	$167,885.00	$167,885.00
Master Logging Recorder installed at the EOSCC Dispatch Center	1	$6,000.00	$6,000.00
Backup Logging Recorder installed at the Backup Dispatch Center			
AES256 Encryption *Included in Recorder Cost*	1	*Included*	*Included*
Telco Positions *Included in Recorder Cost*		*Included*	*Included*
Other Site Work (Describe)		$0.00	$0.00
Services: Installation, Engineering, Optimization		$0.00	$0.00
Project Management		$0.00	$0.00
Total Equipment and Services			**$173,885.00**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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1.75 (Optional) Lake Harney Site Road

Optional Site Road			
Description	**Qty**	**Unit Cost**	**Extended Cost**
Lake Harney Site Road **Preliminary pricing for the road work and culvert improvements on the Lake Harney tower site.** A site development contractor was able to visit the site and take approximate measurements and using his expertise, estimated what type of culvert to put in to ensure heavy equipment will be able to get across it, as well as ensure turn radius off the road is sufficient. The actual design of the proposed work will be done as part of the construction drawings and will be sealed by a Florida registered PE. **Scope of Work:** • Silt Fence – 1,800 SF • Import fill – place & compact (roadway only) out to tower site – 440 CY • Stabilizing road mat – Tensar Grid – 6,090 SF • 6” x 12’ stone roadway – 5,700 SF • Demo existing driveway & culvert • Maintenance of traffic • Grade compaction, pipe & concrete entrance • Bahia sod – R.O.W. restoration • Cross flow pipe	1	$159,050.00	$159,050.00
Total Equipment and Services			**$159,050.00**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Volusia County P25 Required Radio Features Upgrade Price List

XL-200P Portable				
Option #	Description	List Price	Discount %	Discount Pric
YRXL-PKG8F	256-AES,64-DES Encryption (XL-200P/M/XL-185P/M)	$695.00	28%	$500.4
YRXL-PL4F	P25 Phase 2 TDMA (XL-200P/M/XL-185P/M)	$250.00	28%	$180.(
YRXL-PL5K	ProFile OTAP (XL-200P/M/XL-185P/M)	$265.00	28%	$190.8
YRXL-PL5L	P25 OTAR (Over-The-Air-Rekeying) (XL-200P/M/XL-185P/M)	$595.00	28%	$428.4
YRXL-PKGPT	Package,P25 Trunking (XL-200P/XL-185P/M)	$1,500.00	28%	$1,080.(
YRXL-PL4C	EDACS to P25 Trunking (XL-200P/XL-185P/M)	$500.00	28%	$360.(
	Terminal Services - Feature Upgrade and Radio Alignment			$75.(
	Terminal Services - Profile Programming			$34.(
			Total Upgrade Price per Radio	**$2,848.(**

XL-200M Mobile				
Option #	Description	List Price	Discount %	Discount Pric
YRXL-PKG8F	256-AES,64-DES Encryption (XL-200P/M/XL-185P/M)	$695.00	28%	$500.4
YRXL-PL4F	P25 Phase 2 TDMA (XL-200P/M/XL-185P/M)	$250.00	28%	$180.(
YRXL-PL5K	ProFile OTAP (XL-200P/M/XL-185P/M)	$265.00	28%	$190.8
YRXL-PL5L	P25 OTAR (Over-The-Air-Rekeying) (XL-200P/M/XL-185P/M)	$595.00	28%	$428.4
YRXL-PL4C	EDACS to P25 Trunking (XL-200P/XL-185P/M)	$500.00	28%	$360.(
	Terminal Services - Feature Upgrade and Radio Alignment			$75.(
	Terminal Services - Profile Programming			$34.(
			Total Upgrade Price per Radio	**$1,768.(**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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Volusia County P25 Required Radio Features Upgrade Price List (con't)

XL-185P Portable				
Option #	Description	List Price	Discount %	Discount Pric
YRXL-PKG8F	256-AES,64-DES Encryption (XL-200P/M/XL-185P/M)	$695.00	28%	$500.4
YRXL-PL4F	P25 Phase 2 TDMA (XL-200P/M/XL-185P/M)	$250.00	28%	$180.0
YRXL-PL5K	ProFile OTAP (XL-200P/M/XL-185P/M)	$265.00	28%	$190.8
YRXL-PL5L	P25 OTAR (Over-The-Air-Rekeying) (XL-200P/M/XL-185P/M)	$595.00	28%	$428.4
YRXL-PL4C	EDACS to P25 Trunking (XL-200P/XL-185P/M)	$500.00	28%	$360.0
	Terminal Services - Feature Upgrade and Radio Alignment			$75.0
	Terminal Services - Profile Programming			$34.0
			Total Upgrade Price per Radio	**$1,768.0**

XL-185M Mobile				
Option #	Description	List Price	Discount %	Discount Pric
YRXL-PKG8F	256-AES,64-DES Encryption (XL-200P/M/XL-185P/M)	$695.00	28%	$500.4
YRXL-PL4F	P25 Phase 2 TDMA (XL-200P/M/XL-185P/M)	$250.00	28%	$180.0
YRXL-PL5K	ProFile OTAP (XL-200P/M/XL-185P/M)	$265.00	28%	$190.8
YRXL-PL5L	P25 OTAR (Over-The-Air-Rekeying) (XL-200P/M/XL-185P/M)	$595.00	28%	$428.4
YRXL-PL4C	EDACS to P25 Trunking (XL-200P/XL-185P/M)	$500.00	28%	$360.0
	Terminal Services - Feature Upgrade and Radio Alignment			$75.0
	Terminal Services - Profile Programming			$34.0
			Total Upgrade Price per Radio	**$1,768.0**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Volusia County P25 Required Radio Features Upgrade Price List (con't)

Unity XG-100P Portable

Radio No longer supported

Option #	Description	List Price	Discount %	Discount Pric
YRPL4C	P25 AES 256-B ECP&DES-OFB (Unity)	$695.00	28%	$500.4
YRPL5L1	Project 25 Over-The-Air ReKeying (P25 OTAR) (Unity)	$595.00	28%	$428.4
YRPL4F	Phase II TDMA (M7300, M5300, P7300, P5500, Unity Mobile, Unity Portable, XG-25P/M, XG-75P)	$250.00	28%	$180.0
YRPL5K[6.8]	ProFile (OTAP or Over-the-Air Programming) (Unity, P7300, P7200, P5400, P5500, P5300, M7300, M5300, M7200, XG-75P, XG-25P, XG-15P, XG-25M)	$265.00	28%	$190.8
YR-P25T-1	P25 Trunking (Unity) Note: EDACS Not Available	$1,500.00	28%	$1,080.0
	Terminal Services - Feature Upgrade and Radio Alignment			$75.0
	Terminal Services - Profile Programming			$34.0
			Total Upgrade Price per Radio	**$2,488.0**

Unity XG-100M Mobile

Feature for Highlighted radios not supported

Option #	Description	List Price	Discount %	Discount Pric
YRPL4C	P25 AES 256-B ECP&DES-OFB (Unity)	$695.00	28%	$500.4
YRPL5L1	Project 25 Over-The-Air ReKeying (P25 OTAR) (Unity)	$595.00	28%	$428.4
YRPL5K[6.8]	ProFile (OTAP or Over-the-Air Programming) (Unity, P7300, P7200, P5400, P5500, P5300, M7300, M5300, M7200, XG-75P, XG-25P, XG-15P, XG-25M)	$265.00	28%	$190.8
YRPL4F	Phase II TDMA (M7300, M5300, P7300, P5500, Unity Mobile, Unity Portable, XG-25P/M, XG-75P)	$250.00	28%	$180.0
YRP7AT1	EDACS to P25T (Unity Mobile)	$750.00	28%	$540.0
	Terminal Services - Feature Upgrade and Radio Alignment			$75.0
	Terminal Services - Profile Programming			$34.0
			Total Upgrade Price per Radio	**$1,948.0**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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Volusia County P25 Required Radio Features Upgrade Price List (con't)

XG-75P Portable				
Option #	Description Feature for Highlighted radios not supported	List Price	Discount %	Discount Pric
YRPL5K[6.8]	ProFile (OTAP or Over-the-Air Programming) (Unity, P7300, P7200, P5400, P5500, P5300, M7300, M5300, M7200, XG-75P, XG-25P, XG-15P, XG-25M)	$265.00	28%	$190.8
YRPL5L2	Project 25 Over-The-Air ReKeying (P25 OTAR) (P7300, P5400, P5500, M7300, M5300, XG-75P, XG-25P/25M)	$495.00	28%	$356.4
YRPKG8F	256-AES,64-DES ECP (M7100, P7100, M7200, P7200, P7300, P5400, P5500, M5300, M7300, XG-75P, XG-25M, XG-25P)	$595.00	28%	$428.4
YRPL4F	Phase II TDMA (M7300, M5300, P7300, P5500, Unity Mobile, Unity Portable, XG-25P/M, XG-75P)	$250.00	28%	$180.0
YRP7AT2	EDACS to P25Trunking (M7100, P7100, M7200, P7200, M7300, P7300, XG-75P)	$700.00	28%	$504.0
	Terminal Services - Feature Upgrade and Radio Alignment			$75.0
	Terminal Services - Profile Programming			$34.0
			Total Upgrade Price per Radio	**$1,768.0**

XG75p End of Support 3/26/2023

XG75pe not affected

M7300/XG-75M Mobile				
Option #	Description Feature for Highlighted radios not supported	List Price	Discount %	Discount Pric
YRPL5K[6.8]	ProFile (OTAP or Over-the-Air Programming) (Unity, P7300, P7200, P5400, P5500, P5300, M7300, M5300, M7200, XG-75P, XG-25P, XG-15P, XG-25M)	$265.00	28%	$190.8
YRPL5L2	Project 25 Over-The-Air ReKeying (P25 OTAR) (P7300, P5400, P5500, M7300, M5300, XG-75P, XG-25P/25M)	$495.00	28%	$356.4
YRPKG8F	256-AES,64-DES ECP (M7100, P7100, M7200, P7200, P7300, P5400, P5500, M5300, M7300, XG-75P, XG-25M, XG-25P)	$595.00	28%	$428.4
YRPL4F	Phase II TDMA (M7300, M5300, P7300, P5500, Unity Mobile, Unity Portable, XG-15P, XG-25P/M, XG-75P)	$250.00	28%	$180.0
YRP7AT2	EDACS to P25Trunking (M7100, P7100, M7200, P7200, M7300, P7300, XG-75P)	$700.00	28%	$504.0
	Terminal Services - Feature Upgrade and Radio Alignment			$75.0
	Terminal Services - Profile Programming			$34.0
			Total Upgrade Price per Radio	**$1,768.0**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Volusia County P25 Required Radio Features Upgrade Price List (con't)

XG-25P Portable

Option #	Description	List Price	Discount %	Discount Pric
	Feature for Highlighted radios not supported			
YRPL5K[6,8]	ProFile (OTAP or Over-the-Air Programming) (Unity, P7300, P7200, P5400, P5500, P5300, M7300, M5300, M7200, XG-75P, XG-25P, XG-15P, XG-25M)	$265.00	28%	$190.8
YRPL5L2	Project 25 Over-The-Air ReKeying (P25 OTAR) (P7300, P5400, P5500, M7300, M5300, XG-75P, XG-25P/25M)	$495.00	28%	$356.4
YRPKG8F	256-AES,64-DES ECP (M7100, P7100, M7200, P7200, P7300, P5400, P5500, M5300, M7300, XG-75P, XG-25M, XG-25P)	$595.00	28%	$428.4
YRPL4F	Phase II TDMA (M7300, M5300, P7300, P5500, Unity Mobile, Unity Portable, XG-15P, XG-25P/M, XG-75P)	$250.00	28%	$180.0
YRP7AT3	EDACS to P25Tr(M5300,P5100,P5400,P5500,XG-25P/M)	$600.00	28%	$432.0
	Terminal Services - Feature Upgrade and Radio Alignment			$75.0
	Terminal Services - Profile Programming			$34.0
			Total Upgrade Price per Radio	**$1,696.0**

XG-25M Mobile

Option #	Description	List Price	Discount %	Discount Pric
	Feature for Highlighted radios not supported			
YRPL5K[6,8]	ProFile (OTAP or Over-the-Air Programming) (Unity, P7300, P7200, P5400, P5500, P5300, M7300, M5300, M7200, XG-75P, XG-25P, XG-15P, XG-25M)	$265.00	28%	$190.8
YRPL5L2	Project 25 Over-The-Air ReKeying (P25 OTAR) (P7300, P5400, P5500, M7300, M5300, XG-75P, XG-25P/25M)	$495.00	28%	$356.4
YRPKG8F	256-AES,64-DES ECP (M7100, P7100, M7200, P7200, P7300, P5400, P5500, M5300, M7300, XG-75P, XG-25M, XG-25P)	$595.00	28%	$428.4
YRPL4F	Phase II TDMA (M7300, M5300, P7300, P5500, Unity Mobile, Unity Portable, XG-25P/M, XG-75P)	$250.00	28%	$180.0
YRP7AT3	EDACS to P25Tr(M5300,P5100,P5400,P5500,XG-25P/M)	$600.00	28%	$432.0
	Terminal Services - Feature Upgrade and Radio Alignment			$75.0
	Terminal Services - Profile Programming			$34.0
			Total Upgrade Price per Radio	**$1,696.0**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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Volusia County P25 Required Radio Features Upgrade Price List (con't)

P7300 Portable				
Option #	Description (Feature for Highlighted radios not supported)	List Price	Discount %	Disocunt Pric
YRPL5K[6,8]	ProFile (OTAP or Over-the-Air Programming) (Unity, P7300, P7200, P5400, P5500, P5300, M7300, M5300, M7200, XG-75P, XG-25P, XG-15P, XG-25M)	$265.00	28%	$190.8
YRPL5L2	Project 25 Over-The-Air ReKeying (P25 OTAR) (P7300, P5400, P5500, M7300, M5300, XG-75P, XG-25P/25M)	$495.00	28%	$356.4
YRPKG8F	256-AES,64-DES ECP (M7100, P7100, M7200, P7200, P7300, P5400, P5500, M5300, M7300, XG-75P, XG-25M, XG-25P)	$595.00	28%	$428.4
YRPL4F	Phase II TDMA (M7300, M5300, P7300, P5500, Unity Mobile, Unity Portable, XG-25P/M, XG-75P)	$250.00	28%	$180.0
YRP7AT2	EDACS to P25Trunking (M7100, P7100, M7200, P7200, M7300, P7300, XG-75P)	$700.00	28%	$504.0
	Terminal Services - Feature Upgrade and Radio Alignment			$75.0
	Terminal Services - Profile Programming			$34.0
			Total Upgrade Price per Radio	**$1,768.0**

P7200 Portable				
Option #	Description (Radio no longer supported)	List Price	Discount %	Discount Pric
YRPL5K[6,8]	ProFile (OTAP or Over-the-Air Programming) (Unity, P7300, P7200, P5400, P5500, P5300, M7300, M5300, M7200, XG-75P, XG-25P, XG-15P, XG-25M)	$265.00	28%	$190.8
YRPL5L	Feat,Over-the-Air Re-key, P25(M7200, P7200, M7100, P7100)	$685.00	28%	$493.2
YRPKG8F	256-AES,64-DES ECP (M7100, P7100, M7200, P7200, P7300, P5400, P5500, M5300, M7300, XG-75P, XG-25M, XG-25P)	$595.00	28%	$428.4
YRP7AT2	EDACS to P25Trunking (M7100, P7100, M7200, P7200, M7300, P7300, XG-75P)	$700.00	28%	$504.0
	Terminal Services - Feature Upgrade and Radio Alignment			$75.0
	Terminal Services - Profile Programming			$34.0
			Total Upgrade Price per Radio	**$1,725.4**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Volusia County P25 Required Radio Features Upgrade Price List (con't)

P7100IP Portable				
Option #	Description Radio No longer supported	List Price	Discount %	Dicount Price
YRPL5K1[6,8]	ProFile (OTAP or Over-the-Air Programming) (P7100, P5200, P5100, M7100)	$320.00	28%	$230.4
YRPL5L	Feat,Over-the-Air Re-key, P25(M7200, P7200, M7100, P7100)	$685.00	28%	$493.2
YRPKG8F	256-AES,64-DES ECP (M7100, P7100, M7200, P7200, P7300, P5400, P5500, M5300, M7300, XG-75P, XG-25M, XG-25P)	$595.00	28%	$428.4
YRP7AT2	EDACS to P25Trunking (M7100, P7100, M7200, P7200, M7300, P7300, XG-75P)	$700.00	28%	$504.0
	Terminal Services - Feature Upgrade and Radio Alignment			$75.0
	Terminal Services - Profile Programming			$34.0
			Total Upgrade Price per Radio	**$1,765.0**

M7100IP Mobile				
Option #	Description Radio No longer supported	List Price	Discount %	Discount Pric
YRPL5K1[6,8]	ProFile (OTAP or Over-the-Air Programming) (P7100, P5200, P5100, M7100)	$320.00	28%	$230.4
YRPL5L	Over-the-Air Re-key, P25(M7200, P7200, M7100, P7100)	$685.00	28%	$493.2
YRPKG8F	256-AES,64-DES ECP (M7100, P7100, M7200, P7200, P7300, P5400, P5500, M5300, M7300, XG-75P, XG-25M, XG-25P)	$595.00	28%	$428.4
YRP7AT2	EDACS to P25Trunking (M7100, P7100, M7200, P7200, M7300, P7300, XG-75P)	$700.00	28%	$504.0
	Terminal Services - Feature Upgrade and Radio Alignment			$75.0
	Terminal Services - Profile Programming			$34.0
			Total Upgrade Price per Radio	**$1,765.0**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Volusia County P25 Required Radio Features Upgrade Price List (con't)

P5400 Portable				
Option #	Description Radio No longer supported	List Price	Discount %	Discount Pric
YRPL5K[6,8]	ProFile (OTAP or Over-the-Air Programming) (Unity, P7300, P7200, P5400, P5500, P5300, M7300, M5300, M7200, XG-75P, XG-25P, XG-15P, XG-25M)	$265.00	28%	$190.8
YRPL5L2	Project 25 Over-The-Air ReKeying (P25 OTAR) (P7300, P5400, P5500, M7300, M5300, XG-75P, XG-25P/25M)	$495.00	28%	$356.4
YRPKG8F	256-AES,64-DES ECP (M7100, P7100, M7200, P7200, P7300, P5400, P5500, M5300, M7300, XG-75P, XG-25M, XG-25P)	$595.00	28%	$428.4
YRP7AT3	EDACS to P25Tr(M5300,P5100,P5400,P5500,XG-25P/M)	$600.00	28%	$432.0
	Terminal Services - Feature Upgrade and Radio Alignment			$75.0
	Terminal Services - Profile Programming			$34.0
			Total Upgrade Price per Radio	**$1,516.0**

P5100 Portable				
Option #	Description Radio No longer supported	List Price	Discount %	Discount Pric
YRPL5K1[6,8]	ProFile (OTAP or Over-the-Air Programming) (P7100, P5200, P5100, M7100)	$320.00	28%	$230.4
YRP7AT3	EDACS to P25Tr(M5300,P5100,P5400,P5500,XG-25P/M)	$600.00	28%	$432.0
	Terminal Services - Feature Upgrade and Radio Alignment			$75.0
	Terminal Services - Profile Programming			$34.0
			Total Upgrade Price per Radio	**$771.4**

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Pricing Summary and Proposed Total Cost

This worksheet summarizes all of the previous pricing worksheets to derive a Total Project Cost. Contractors are encouraged to provide cost reduction measures in the form of Trade-In allowances and/or other cost reduction Incentives.

		New Price	Comments
1.1	Master Core Control Point Equipment and Services (EOSCC)	$1,107,089.56	Math error correction correct ($50) in total on summary page Credit for Existing VIDA Core Licenses Credit for Existing two (2) ISSI Licenses
1.2	Master Core Control Point Equipment and Services (EOC-A)	$355,429.34	No Charge. Reuse of Existing Gateways
1.3	P25 Simulcast System A Control Equipment and Services (EOC-A)	N/A	
1.4	P25 Simulcast System A Control Equipment and Services (Orange City)	N/A	
1.5	P25 Simulcast System B Control Equipment and Services (Port Orange)	N/A	
1.6	P25 Simulcast System B Control Equipment and Services (EOC-B)	N/A	
1.7	Commercial Carrier Talk Group System for Smartphones	$258,532.20	130 BeOn Encryption Licenses and 1 BeOn Windows Client, removed licensing block
1.8	Network Control and Management System Equipment and Services	$162,192.84	
1.9	EOSCC Dispatch Center Common Console Equipment and Services	$121,319.74	Removed 31 Backup Radios Add P25 Phase 2 to Existing 34 Backup Radios Add OTAR Phase 2 to Existing 34 Backup Radios Add OTAP to Existing 34 Backup Radios Add AES Multi-Key Encryption to Existing 34 Backup Radios Removed 24 and 16 Port Control Station Combiners Removed one Dual Antenna Add 8 Port Control Station Combiner
1.10	EOSCC Primary Dispatch Center Equipment and Services	$1,017,382.72	Removed 34 Consoles Reduction of Symphony Console Feature Upgrades from 35 to 34 Added Advanced Paging Capability for 4 Consoles
1.11	EOSCC EOC Operations Room Console Equipment and Services	$66,910.00	Reduction for Two Existing Consoles
1.12	49 Keyton Radio Services Room Console Equipment and Services	$34,349.84	Reduction for One Existing Consoles
1.13	Backup Dispatch Center Equipment and Services	$85,364.70	
1.14	Logging Recorder System Upgrade, Integration and Services	$51,258.25	
1.15	P25 System A Baberville Tower Site Equipment and Services	$766,717.47	Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers Tower Mount Changes & Modifications Per Hogan Report&Kirms Tower Services SOW Additional Tower Services - Changed using Barberville instead of Pierson

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

1.16	P25 System A DeLeon Springs Tower Site Equipment and Services	$821,089.46	Add Test Antenna and Tower Services Remove Floor Reinforcement Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers Tower Mount Changes & Modifications Per Hogan Report&Kirms Tower Services SOW Additional Tower Services
1.17	P25 System A DeLand FDOT Tower Site Equipment and Services	$739,394.80	Add Test Antenna and Tower Services Remove Floor Reinforcement Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers Tower Mount Changes & Modifications Per Hogan Report&Kirms Tower Services SOW Additional Tower Services
1.18	P25 System A Orange City Tower Site Equipment and Services	$831,363.70	Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers Tower Mount Changes & Modifications Per Hogan Report&Kirms Tower Services SOW Additional Tower Services
1.19	P25 System A Deltona Tower Site Equipment and Services	$739,854.45	Add Test Antenna and Tower Services Remove Floor Reinforcement Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers Tower Mount Changes & Modifications Per Hogan Report&Kirms Tower Services SOW Additional Tower Services
1.20	P25 System A DeBary Tower Site Equipment and Services	$746,729.53	Add Test Antenna and Tower Services Remove Floor Reinforcement Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers Tower Mount Changes & Modifications Per Hogan Report&Kirms Tower Services SOW Additional Tower Services
1.21	P25 System A EOC-A Tower Site Equipment and Services	$843,231.67	Add Test Antenna and Tower Services Remove Floor Reinforcement Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers Tower Mount Changes & Modifications Per Hogan Report&Kirms Tower Services SOW Additional Tower Services
1.22	P25 System A Lake Harney Tower Site Equipment and Services	$746,889.67	Add Test Antenna and Tower Services Remove Floor Reinforcement
1.23	P25 System B Ormond Beach Tower Site Equipment and Services	$824,680.40	Add Test Antenna and Tower Services Remove Floor Reinforcement Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers Tower Mount Changes & Modifications Per Hogan Report&Kirms Tower Services SOW Additional Tower Services
1.24	P25 System B EVAC Tower Site Equipment and Services	$848,948.80	Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers Tower Mount Changes & Modifications Per Hogan Report&Kirms Tower Services SOW Additional Tower Services
1.25	P25 System B EOC-B Tower Site Equipment and Services	$891,930.29	Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers Tower Mount Changes & Modifications Per Hogan Report&Kirms Tower Services SOW Additional Tower Services
1.26	P25 System B Port Orange Tower Site Equipment and Services	$894,069.37	Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers Tower Mount Changes & Modifications Per Hogan Report&Kirms Tower Services SOW Additional Tower Services

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

1.27	P25 System B New Smyrna Beach Tower Site Equipment and Services	$795,553.67	Add Test Antenna and Tower Services Remove Floor Reinforcement Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers Tower Mount Changes & Modifications Per Hogan Report&Kirms Tower Services SOW Additional Tower Services
1.28	P25 System B Edgewater Tower Site Equipment and Services	$811,420.98	Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers Tower Mount Changes & Modifications Per Hogan Report&Kirms Tower Services SOW Additional Tower Services
1.29	P25 System B Plantation Bay Tower Site Equipment and Services	$799,056.07	Add Test Antenna and Tower Services Credit for Cable Ladder and Surge Suppression per Addenda
1.30	P25 EVENT System EVAC Tower Site Equipment and Services	$261,496.29	
1.31	P25 DeBary PSIC System Equipment and Services	$80,349.15	Removed LAN Switch -Reuse of Existing Network Equipment Removed Multi-Site Interface- Reuse of Existing Network Equipment Credit for Reuse of Existing Channels Removed DC Power Breaker Panel Removed Reuse of AC Stations
1.32	FSA 800 MHz Simulcast System Equipment and Services	$19,278.00	Removed by County Request, Reprogramming and Testing and Decoders at the Fire Stations and Replacement of Fire Station Alert Unit Decoder Modules left.
1.33	RMACS Simulcast System Equipment and Services	$886,968.45	Moved Lan and Sync Equipment from 1.32 800 MHz Pricing EOC- B Transmit Antenna System Moved From 1.32 800 MHz FSA Pricing Page Removed 800MHZ FSA Related Equipment
1.34	VHF Fire Paging Simulcast System Equipment and Services	$223,965.84	
1.35	(Option Taken) Zetron Model 25 FSA System Equipment and Services	$9,583.00	Optional Replacement $9,583.00 taken
1.36	Lake Harney Tower Site Development Services	$1,372,360.10	Changed site location, elevation of property, additional site work required
1.37	EOC-A Microwave Network Backhaul System Equipment	$193,852.43	ADDED Dual 155 Mbps OPTION Credit Tower Analysis Removed Heavy Duty Type Antenna Mounts and Butterfly Hangers Tower Mount Changes & Modifications Per Hogan Report&Kirms Tower Services SOW Additional Tower Services
1.37a	49 Keyton Drive MPLS Equipment & Back Haul	$75,193.28	
1.37b	EOSCC Dispatch Center MPLS Equipment & Back Haul	$47,674.88	
1.37c	59 Keyton Drive Backup Dispatch	$38,330.18	
1.38	EOC-B Network Backhaul System Equipment	$121,561.14	Credit Tower Analysis Additional required materials and labor to raise Antennas to available space on tower
1.39	EVAC Microwave Network Backhaul System Equipment	$141,838.16	Credit Tower Analysis

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

1.40	Ormond Beach Microwave Network Backhaul System Equipment	$123,442.18	Credit Tower Analysis Additional required materials and labor to raise Antennas to available space on tower
1.41	Plantation Bay Microwave Network Backhaul System Equipment	$129,408.16	
1.42	CR304 Microwave Network Backhaul System Equipment	$114,092.46	Added Diversity Receiver Option Reduced Radio Power Added Diversity Antenna Reduction of Microwave Antenna Size
1.43	Baberville Microwave Network Backhaul System Equipment	$138,409.84	Added Diversity Receiver Option Reduced Radio Power Added Diversity Antenna Reduction of Microwave Antenna Size Credit Tower Analysis Additional required materials and labor to raise Antennas to available space on tower
1.44	DeLeon Springs Microwave Network Backhaul System Equipment	$201,233.94	Added Dual 155 Mbps OPTION Credit Tower Analysis
1.45	DeLand FDOT Microwave Network Backhaul System Equipment	$124,211.46	Credit Tower Analysis
1.46	Orange City Microwave Network Backhaul System Equipment	$134,420.90	Credit Tower Analysis Additional required materials and labor to raise Antennas to available space on tower
1.47	DeBary Microwave Network Backhaul System Equipment	$123,670.00	Credit Tower Analysis
1.48	Deltona Microwave Network Backhaul System Equipment	$134,783.24	Added Diversity Receiver Option Reduced Radio Power Add Diversity Antenna Reduction of Microwave Antenna Size Credit Tower Analysis Additional required materials and labor to raise Antennas to available space on tower
1.49	Lake Harney Microwave Network Backhaul System Equipment	$139,989.92	Added Diversity Receiver Option Reduced Radio Power Added Diversity Antenna Reduction of Microwave Antenna Size Credit Tower Analysis Additional required materials and labor to raise Antennas to available space on tower
1.50	Lake Harney Microwave Link Equipment for Brevard ISSI	$94,748.95	Credit Tower Analysis Credit for Reuse of DeBary Microwave Equipment. (Radios will be returned to MNI factory for refrequency)
1.51	Edgewater Microwave Network Backhaul System Equipment	$130,762.80	Credit Tower Analysis
1.52	New Smyrna Beach Microwave Network Backhaul System Equipment	$126,176.12	Credit Tower Analysis
1.53	Port Orange Microwave Network Backhaul System Equipment	$131,558.06	Credit Tower Analysis Additional required materials and labor to raise Antennas to available space on tower
1.54	High/Mid-Tier Control Station Radio Equipment - External power supply	$69,637.12	
1.54a	High/Mid-Tier Control Station Radio Equipment - Internal power supply		
1.55	Low-Tier Control Station Radio Equipment - external power supply	$32,868.10	

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

1.56	High-Tier Multi-Band Mobile Radio Equipment	$321,967.80	
1.57	Mid-Tier Mobile Radio Equipment - Encrypted Public Safety	$2,550,632.00	
1.57a	Mid-Tier Mobile Radio Equipment - No encryption Non-Public Safety	$2,988.00	
1.58	Low-Tier Mobile Radio Equipment - Encrypted		
1.58a	Low-Tier Mobile Radio Equipment - No encryption	$87,877.80	
1.58a	Low-Tier Mobile Radio Equipment - AES Encrypted	$25,283.44	
1.60	High-Tier Portable Radio Equipment		
1.61	High-Tier, Multi-Band Portable Radio Equipment	$188,232.00	
1.62	Public Safety Mid-Tier Portable Radio Equipment - Encrypted	$3,585,982.72	
1.62a	Public Safety Mid-Tier Portable Radio Equipment - No Encryption	$15,029.60	
1.63b	XG-25P Low-Tier Portable Radio Equipment - No Encryption	$498,552.18	
1.63c	XG-25P Low-Tier Portable Radio Equipment - Encrypted	$678,942.87	
	Estimated County Radio Upgrades	$216,195.00	*not included in terminal totals
1.65	Propagation Software and Training	$1,600.00	
1.66	Programming Equipment and Accessories	$3,671.56	
1.67	Training	$258,778.70	
1.72	**(Option Taken) Recommended Test Equipment (1 Set)** *Freedom Service Monitor w P25 Phase 2*	$42,500.00	
1.72a	**(Option Taken) System Features Equipment and Services** *AVL Mapping Solution and Status Aware* *CADLINK II API*	$219,363.75	Added L3H Status Aware Added CADLINK II API
1.74	**(Option Taken) Voice Logging Recorder System at EOSCC**	$173,885.00	
	Total County Terminals	**$8,057,993.63**	**Terminals to be reconciled separately**
	Customer Loyalty & One Time System Discount for Terminals		**Terminal Discount 70% of original proposed discounts**
	Grand Total County Terminals	**$ 8,057,993.63**	
	Total Proposed Infrastructure	**$21,379,917.46**	
	Trade-In Allowance of EDACS, Microwave & DC Power Systems	**$(2,789,994.21)**	
	Customer Loyalty & One Time System Discount for Infrastructure	**$(3,351,460.91)**	**Infrastructure Discount 30% of original proposed discount**
	Grand Total Infrastructure	**$15,238,462.34**	

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

	Total Proposed System Turnkey Cost (*Before Cost Adjustments)*	**$29,437,911.09**	*** Adjusted Infrastruture Total**
	Customer Loyalty	$ (1,107,042.36)	Based on 30% Infrastructure Discount, Terminals and Quantities will reconciled separately
	One Time System Discount	$ (2,244,418.55)	Based on 30% Infrastructure Discount, Terminals and Quantities will reconciled separately
	Total Proposed System Turnkey Cost (*After Cost Adjustments)*	$ 26,086,450.18	
1.71	Reuse of P25 Capable Equipment Reduction (Note: all Equipment is current Production)		Spread out in Price Page where appropriate
	Total Proposed System Turnkey Cost (*After Reuse Adjustments)*	**$ 23,296,455.97**	
	Total Infrastructure Extended Maintenance Services Costs Year 3 through Year 17		
	Subscriber Maintenance Portable Cost for Public Safety Subscribers, Years 4 Through 17 (single unit price)		
	Subscriber Maintenance Portable Cost for Public Safety Subscribers, Years 6 Through 17 (single unit price)		
	Subscriber Maintenance Mobile Cost for Public Safety Subscribers, Years 4 Through 17 (single unit price)		
	Subscriber Maintenance Mobile Cost for Public Safety Subscribers, Years 6 Through 17 (single unit price)		
	OPTIONAL Maintenance Cost for system monitoring and local on-site technical response service dispatch, years 3 through 17		

Attachment: D-Volusia County Radio Contract Pricing (Tab 4 of Contract) (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Attachment: 01._19-P-153JRD,_P25_Compliant_Radio_System (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking

Volusia County
FLORIDA

REQUEST FOR PROPOSAL

FOR

P25 Compliant Radio System

RFP NO. 19-P-153JRD

Closing Date: Wednesday, January 15, 2020

DO NOT RESPOND TO THIS SOLICITATION ON LINE
SEE SECTION 3.4, *DELIVERY OF PROPOSALS*

Purpose of RFP

The purpose of this Request for Proposal (RFP) is to solicit competitive sealed proposals for P25 Compliant Radio System for the County of Volusia, Florida.

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Attachment: 01._19-P-153JRD,_P25_Compliant_Radio_System (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking

Attachment: 01._19-P-153JRD,_P25_Compliant_Radio_System (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking

RFP 19-P-153JRD

P25 COMPLIANT RADIO SYSTEM

1.0 PROJECT INTRODUCTION

A. The purpose of this Request for Proposals (RFP) is to solicit competitive sealed proposals for a technically advanced, value-conscious partner to modernize Volusia County's public safety land mobile radio system and to help integrate current and future broadband technologies into its public safety communications system.

B. First Responders are encountering a diverse set of challenges that are accelerating, fast moving, and compressing the need for the capabilities of a modern wireless broadband network. Specialized public safety-based applications like data intensive criminal justice applications, transmission of video and text location technology, messages for emergency and management purposes, and drone technology are a few of the drivers that are creating the need for much more than the capabilities found in the traditional land mobile radio network.

C. The first step toward this future communication system is detailed and requested in this RFP. Volusia County intends to modernize the current thirteen (13) site Harris radio system to a Project 25 (P25) trunked simulcast radio system that dynamically supports P25 Phase 1 and Phase 2 radio communications.

D. The County plans to replace its legacy microwave system with a modern MPLS-based microwave system.

E. The County intends to expand the radio system to include two new radio towers. One tower will be a partnership with Flagler County to be located at 1250 Old Dixie Highway, Bunnell, 32174 and the second tower, the construction of which is included as part of the scope of this RFP, will be located at 3757 Maytown Road, Oak Hill, 32759 in the southern part of the County. These towers will improve coverage in the northeast and southern areas of the County.

F. The County recognizes that P25 is not a broadband technology that provides high speed communication or capacity to integrate data, video, voice, and the public safety applications being envisioned today, on a single network. The capabilities and features of smartphones built into modern cellular networks are only marginally included in P25 vendor offerings. P25 is an upgrade to the County's current public safety wireless communication system and is a step to avoid the obsolescence of its land mobile radio system and to enhance the reliability of its communication system.

G. The Federal government has set a direction to provide public safety agencies with a modern mission critical broadband-based network by allocating frequency and funds toward the use of AT&T's nationwide "FirstNet" network. Many of the standards necessary for this to technically happen are still in development. Insights regarding the capacity levels, network hardening, coverage, and project timelines are yet to be disclosed. The use of FirstNet as a principal emergency dispatch and First Responder

network at the local government level with its many agencies may be realistic in the future as FirstNet matures, but it still appears several years off for the Volusia County area. It is critical that the County's public safety land mobile radio be upgraded to a modern P25 system now to ensure the continued reliability of public safety communication.

H. Volusia County is looking for a partner that has broad and diverse experience developing multiple communications technologies, such a satellite, terrestrial IP-based networks, wireless broadband/LTE networks, mobile networks, specialized public safety applications, and large scale public safety government networks. A vendor who can integrate its P25 radio network with multiple LTE-based carriers will improve the competitive cellular carrier environment for public safety. The technology cross-pollination that results from this kind of experience will provide First Responders with better public safety communication products that have value-conscious, value-added features now and in the future.

1.1 OVERVIEW

A. The County desires to:

1. upgrade the current 800 MHz proprietary communication system with a new state-of-the-art, Association of Public Safety Communications Officials (APCO) Project 25 (P25) communication system that dynamically supports both P25 Phase 1 and Phase 2;

2. maintain a high level of system reliability through the implementation of geo-redundant core and control point sites;

3. implement a ring topology for the new IP-based microwave backhaul network;

4. implement a P25 Phase 2 technology system to accommodate the increasing demand for radio traffic capacity, and the anticipated FCC mandates for increased radio spectrum efficiency;

5. improve radio coverage outdoors and within buildings, and has identified four (4) area polygons within the County where additional signal margins are required to overcome specific building losses;

6. to maintain interoperability with agencies that use Florida Interoperability Network (FIN), Mutual Aid channels, and VHF frequencies;

7. improve interoperability with agencies from surrounding counties such as Flagler, Seminole, Brevard, and Lake County through the implementation of a P25 open standard communication system architecture;

8. expand the availability of communication system options such as encryption, location services, over-the-air programming, and over-the-air rekeying of encryption keys.

Attachment: 01._19-P-153JRD,_P25_Compliant_Radio_System (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking

B. The County must maintain the operation of their analog paging and fire station alerting (FSA) system when they upgrade to P25.

2.0 SCOPE OF WORK AND EXHIBITS

The Contractor acknowledges receipt of all exhibits upon submission of a signed Proposal Submittal Form with the response documents. The Contractor shall complete and return the appropriate exhibits with the submittal response.

A. Exhibit A – Technical Specifications

The P25 Compliant Radio System requirements are detailed in Exhibit A – Technical Specifications.

B. Exhibit A.1 – Requirements Matrix

The Contractor shall complete and return Exhibit A.1 – Requirements Matrix with submittal response.

C. Exhibit A.2 – Supplemental Forms

The Contractor shall complete and return Exhibit A.2 – Supplemental Forms with submittal response.

D. Exhibit A.3 – County Computing Security Procedures

The Contractor acknowledges receipt of and agrees to the County Computing Security Procedures upon submission of a signed Proposal Submittal Form with the response documents. The County Computing Security Procedures, as amended, are located at www.volusia.org/purchasing.

E. Exhibit A.4 – Technical Infrastructure Standards

The Contractor acknowledges receipt of the County's Technical Infrastructure upon submission of a signed Proposal Form with the response documents.

F. Exhibit A.5 – Technology Systems Design and Installation Guidelines

The Contractor agrees to the County's Technology Systems Design and Installation Guidelines (Division 27) upon submission of a signed Section 5.0, Proposal Form, with the response documents.

G. Exhibit B – Pricing Sheets

The Contractor shall complete and return the Pricing Sheets with submittal response.

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H. Exhibit C.1 – Insurance requirements – Equipment

The Contractor acknowledges receipt of and agrees to the County's Insurance Requirements for equipment/equipment maintenance upon submission of a signed Proposal Form with the response documents.

I. Exhibit C.2 – Insurance Requirements – Tower Construction

The Contractor acknowledges receipt of and agrees to the County's Insurance Requirements for tower construction upon submission of a signed Proposal Form with the response documents.

J. Exhibit C.3 – Insurance Requirements – Tower Maintenance

The Contractor acknowledges receipt of and agrees to the County's Insurance Requirements for tower maintenance upon submission of a signed Proposal Form with the response documents.

3.0 GENERAL TERMS & CONDITIONS

3.1 Definitions

As used in this RFP, the following terms shall have the meanings set forth below:

Agreement: The document resulting from this solicitation between the County and the awarded Respondent, including this RFP, and the awarded Respondent's response along with any written addenda and other written documents, which are expressly incorporated by reference.

Contractor: That person or entity duly authorized, upon award of a contract, to have a Contract with the County to provide the product and/or services set forth herein and incurring liability for the same.

Contract Administrator: The. Director of Purchasing and Contracts or designee shall serve as Contract Administrator. The Contract Administrator shall be responsible for addressing any concerns within the scope of the Contract. Any changes to the resulting Contract shall be done in writing and authorized by the Director of Purchasing and Contracts.

County: Shall mean the County of Volusia (a body corporate and politic and a subdivision of the State of Florida) including its districts, authorities, separate units of government established by law, ordinance or resolution, partners, elected and non-elected officials, employees, agents, volunteers, and any party with whom the County has agreed by contract to provide additional insured status.

County's Project Manager(s): The Project Manager(s) have responsibility for the day to day administration of the resulting Contract for the County and will be designated prior to award of Contract.

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Critical Problem: A problem that prevents the System from operating in a production environment and/or affects the integrity of the data and for which no workarounds exist which would enable the System to be used in a production environment and ensure data integrity.

Day: The word "day" means each calendar day or accumulation of calendar days.

Director: The Director is the Director of Purchasing and Contracts for the County of Volusia.

Documentation: The organized collection of information that describes the structure, purpose, operation, maintenance, and data requirements for the functionality specified for the software, hardware, and services in the Scope of Work.

Hardware: Physical equipment with a purpose to facilitate electronic functions, store data, display data, process computer instructions, and direct communications.

Hardware & Software Warranty: A warranty provided by the Contractor covering the Hardware and Software provided by Contractor, and the Hardware specified by Contractor and provided by the County for the System, ensuring that all of the aforementioned shall perform in accordance with all system and application specifications in the Scope of Work for the Contract term begins after Final System Acceptance such that no other Hardware or Software is required to be purchased or installed by the County to achieve or maintain such functionality so long as the applicable applications are continuously under maintenance.

Integration: The state of connecting multiple systems with the intent of sharing or transferring data.

Interface: A boundary across which two independent systems meet and act on or communicate with each other.

Licensed Software: Contractor's licensed and other proprietary Software developed by Contractor and required to operate the System, to be provided by Contractor as part of its Services and pursuant to Scope of Work which includes each computer program or module, application and patent which makes up Contractor's Licensed Software and each copy, translation, update, upgrade, and release, together with any materials related thereto normally provided by Contractor as part of its Services. Contractor's Licensed Software shall be considered Confidential Information to the extent permitted and subject to Chapter 119, F. S. (Florida Public Records Law).

Licensed Technology: Licensed Software and Documentation.

Module: A component of a system.

Non-Critical Problem: A problem that does not materially affect the operation of the System or the integrity of the data/communications in a production environment.

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Person or Persons: An individual, firm, partnership, corporation, association, executor, administrator, trustee or other legal entity, whether singular or plural, masculine or feminine, as the context may require.

Proposal: The document submitted by the Consultant in response to a formal solicitation used to determine if the Consultant is highly qualified.

Protest: See process at www.volusia.org/purchasing.

Respondent: One who submits a response to a request for proposal (RFP).

Respondent's Project Manager: The Project Manager has responsibility for administering this Contract for the Respondent and will be designated prior to execution of the Contract.

Scope of Work (SOW): The term Scope of Work means the work to be performed by the Contractor as stated in the Respondent's response documents to this RFP and a final negotiated Contract, including all exhibits, attachments, Specifications, and materials referenced within the Scope of Work or Scope of Services.

Software: The programs, routines, languages, and/or operating systems that shall provide the functionality specified in the Scope of Work.

Software Escrow Agreement: The method of protecting against software vendor failure. A copy of the Contractor's source code, compiler instructions, file structure, documentation, and any other software required is kept by a trusted third party to ensure that the County will have access to the source code in the event that the Contractor is unable to support the software.

Specification: Technical and/or functional details that provide information on how a requirement shall be addressed by or within a proposed system.

Subcontractor: A person other than a materialman or laborer who enters into an Agreement with a Contractor for the performance of any part of the basic agreement.

System: The solution provided by the Contractor.

State: State of Florida.

Third Party Software: Other software recommended by the Respondent or the County that supplements or interoperates with the Respondent's system (software or hardware) so that the entire system provided by the Respondent operates within the functional specifications and requirements of the Scope of Work.

Turnkey Solution: A complete vendor provided solution that is supplied, installed, and purchased in a condition ready for immediate use, occupation, or operation within a specified time frame.

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3.2 RFP Closing Date

Proposals (also referred to herein as "Submittals," "Offers," or "Responses") must be received by the Volusia County Purchasing and Contracts Office, Room 302, Third Floor, 123 West Indiana Avenue, DeLand, FL, 32720-4608, no later than 3:00 p.m., local time, on Wednesday, January 15, 2020. Proposals received after this time will not be considered.

3.3 Proposed Schedule

09/27/2019 .....Release date for Request for Proposal
10/15/2019 .....Pre-proposal Conference
12/06/2019 .....Final date to receive written questions
12/20/2019 .....Final release date for answers to written questions
01/15/2020 .....Closing Date

3.4 Delivery of Proposals

DO NOT RESPOND TO THIS SOLICITATION ON LINE

All proposals shall be sealed and delivered or mailed to (faxes/e-mails will not be accepted):

County of Volusia, Florida
Purchasing and Contracts Office, Room 302
123 West Indiana Avenue, 3rd floor
DeLand, Florida 32720-4608

Mark package(s) **"RFP # 19-P-153JRD, P25 Compliant Radio System"**

Note: Please ensure that if a third party carrier (Federal Express, UPS, etc.) is used, that the third party is properly instructed to deliver the Bid Submittal **only** to Room 302, in the Purchasing and Contracts Office on the third (3rd) floor at the above address.

Bids mailed to 123 West Indiana Avenue via the United States Postal Service (USPS) are delivered to the Post Office, not to the physical address and, therefore, may not meet the requirements of Section 3.2. To be considered, a Bid must be received and accepted in the Purchasing and Contracts Office before the Bid closing date and time.

3.5 Pre-proposal Conferences and Walk-Through Site Visits - MANDATORY

A. A mandatory pre-proposal conference and walk-through site visits will be held in the Purchasing Conference Room at 123 W. Indiana Avenue, Room 300, DeLand, FL, at 9:00 a.m., EST, on Tuesday, October 15, 2019. Please allow for the site visits to take up to three days, which will begin directly after the pre-proposal meeting on Tuesday, October 15, 2019, and continue on Wednesday, October 16, 2019, and Thursday, October 17, 2019. Interested firms must attend the pre-proposal conference and walk-through visits. A sign-in sheet will be maintained.

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B. NOTE: No other walk-through site visits have been scheduled. Additionally, the County of Volusia reserves the right to add an additional mandatory pre-proposal meeting, if the County deems it necessary.

C. A representative of the firm must attend the mandatory pre-proposal conference and walk-through site visits in their entirety in order to respond to the RFP. Proposals received from firms not documented on the sign-in sheets may be deemed non-responsive and may not be considered by the County. A pre-proposal sign-in sheet will be available to record attendance of the firms.

D. Proper state or federal identification such as a driver's license or passport (picture ID) is required of vendor participants for the mandatory pre-proposal conference and a walk-through site visit. Participants will be required to sign a non-disclosure agreement to protect the secure nature of the information documented of the County's systems.

E. In accordance with the American Disabilities Act and Section 286.26, Florida Statutes, persons with disabilities needing a special accommodation to participate in the proceedings, or an interpreter to participate in any proceedings, should contact the County's ADA Coordinator at 386-248-1760 for assistance, at least two (2) business days before any meeting date.

Assisted listening system receivers are available for the hearing impaired, and can be obtained from the Deputy Clerk by contacting the County's ADA Coordinator at 386-248-1760.

Read the full ADA Notice under The American with Disabilities Act (Title II), at www.volusia.org/core/fileparse.php/4175/urlt/ADANotice.pdf.

Read the County of Volusia Grievance Procedure under The Americans with Disabilities Act (Title II).

3.6 Public RFP Opening

A. Pursuant to Section 119.071, Florida Statutes, Bids or proposals ("responses") and the completed tabulation are exempt from disclosure as a public record until such time as the agency provides notice of an intended decision or until thirty (30) days after opening the Bids, proposals or final replies, whichever is earlier. Names only of firms submitting proposals will be read aloud at the RFP opening. Contact the Purchasing and Contracts Office during regular business hours to inspect responses and the completed tabulation or, to inspect the completed tabulation, go to www.volusia.org/purchasing. The foregoing notwithstanding, if, prior to the County's making responses available for inspection, the County rejects all responses and concurrently provides notice of the County's intent to reissue the solicitation, then the County may avail itself of the exemption for rejected responses set forth in Section 119.071, Florida Statutes, to the extent such exemption may apply.

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B. In accordance with the American Disabilities Act and Section 286.26, Florida Statutes, persons with disabilities needing a special accommodation to participate in the proceedings, or an interpreter to participate in any proceedings, should contact the County's ADA Coordinator at 386-248-1760 for assistance, at least two (2) business days before any meeting date.

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Read the full ADA Notice under The American with Disabilities Act (Title II), at www.volusia.org/core/fileparse.php/4175/urlt/ADANotice.pdf.

Read the County of Volusia Grievance Procedure under The Americans with Disabilities Act (Title II).

3.7 Public Records Law

Pursuant to section 119.0701(2)(a), Florida Statutes, the County is required to provide Contractor with this statement and establish the following requirements as contractual obligations pursuant to the Agreement:

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT 386-736-5935, purchasing@volusia.org, by mail, Purchasing and Contracts Division, Attn: Public Records Custodian, 123 W. Indiana Ave. RM 302 DeLand, FL 32720.

By entering into this Contract, Contractor acknowledges and agrees that any records maintained, generated, received, or kept in connection with, or related to the performance of services provided under, this Contract are public records subject to the public records disclosure requirements of section 119.07(1), Florida Statutes, and Article I, section 24 of the Florida Constitution. Pursuant to section 119.0701, Florida Statutes, any Contractor entering into a contract for services with the County is required to:

A. Keep and maintain public records required by the County to perform the services and work provided pursuant to this Contract.

B. Upon request from the County's custodian of public records, provide the County with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes, or as otherwise provided by law.

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C. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the Contract term and following completion or termination of the Contract if the Contractor does not transfer the records to the County.

Upon completion or termination of the Contract, transfer, at no cost, to the County all public records in the possession of the Contractor or keep and maintain public records required by the County to perform the service. If the Contractor transfers all public records to the County upon completion or termination of the Contract, the Contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Contractor keeps and maintains public records upon completion or termination of the Contract, the Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the County, upon request from the County's custodian of public records, in a format that is compatible with the information technology systems of the County.

Requests to inspect or copy public records relating to the County's Contract for services must be made directly to the County. If Contractor receives any such request, Contractor shall instruct the requestor to contact the County. If the County does not possess the records requested, the County shall immediately notify the Contractor of such request, and the Contractor must provide the records to the County or otherwise allow the records to be inspected or copied within a reasonable time.

Contractor acknowledges that failure to provide the public records to the County within a reasonable time may be subject to penalties under section 119.10, Florida Statutes. Contractor further agrees not to release any records that are statutorily confidential or otherwise exempt from disclosure without first receiving prior written authorization from the County. Contractor shall indemnify, defend, and hold the County harmless for and against any and all claims, damage awards, and causes of action arising from the Contractor's failure to comply with the public records disclosure requirements of section 119.07(1), Florida Statutes, or by Contractor's failure to maintain public records that are exempt or confidential and exempt from the public records disclosure requirements, including, but not limited to, any third party claims or awards for attorney's fees and costs arising therefrom. Contractor authorizes County to seek declaratory, injunctive, or other appropriate relief against Contractor from a Circuit Court in Volusia County on an expedited basis to enforce the requirements of this section.

3.8 Proposal Form

A. See **Submittal Requirements** for complete details

B. Each Respondent shall submit **fourteen (14)** complete sets of the RFP Submittal:
- **One (1)** hard copy marked "ORIGINAL"
- **Twelve (12)** hard copies marked "COPY"

  Note: It is not necessary to return every page of the original solicitation document with the hard copies of the RFP Submittal ORIGINAL and COPY(ies); return only the pages that require signatures or information as detailed in Section 4.0.

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- **One (1) COMPLETE** electronic copy on a CD or USB drive in PDF format (Excel spreadsheets shall not be recorded in PDF). The electronic copy of the RFP Submittal shall include ALL submittal requirements, as detailed in Section 3.54.

Note the solicitation number and name of company on the CD or USB drive.

Do not send confidential information, proprietary information, or trade secrets.

C. Terms and conditions differing from those in this RFP may be cause for disqualification of the RFP Proposal.

D. The Proposal Form (Section 5.0) shall be signed by an authorized agent of the firm with documentation, such as a Memorandum of Authority, that the individual is authorized to commit the firm to a contract.

E. Failure to provide the required information may result in the proposal not being considered. Submittals shall be clear, concise, indexed by subject, typed on letter size paper, and individually bound. Submittals shall be mailed or delivered in a sealed package clearly marked on the outside with the project name, invitation number, and due date. Packages shall be received in the Volusia County Purchasing Office by the advertised deadline.

3.9 Questions, Exceptions, and Addenda Concerning RFP 19-P-153JRD

A. It is incumbent upon each Respondent to carefully examine this solicitation's specifications, scope of work/service, terms, and conditions. Questions and exceptions concerning any Section of this RFP shall be directed by letter, facsimile transmission, or e-mail to the Procurement Analyst named in item B (below), who shall be the official point of contact for this RFP. Questions and exceptions shall be submitted no later than forty (40) days before the closing date. Thereafter, no further questions or exceptions will be accepted or reviewed by the County and Respondents' right to submit questions or exceptions will terminate and any questions or exceptions not previously made shall be deemed waived. The issuance of a written addendum is the only official method by which interpretation, clarification, or additional information can be given and oral representations will not be binding on the County.

B. Mark cover page or envelope(s) "Questions, Exceptions and Addenda Concerning RFP # 19-P-153JRD, "P25 Compliant Radio System."

Submit questions to:

John Duckworth, Procurement Analyst II
Telephone:.....386-822-5792
Fax: 386-736-5972
E-mail:.....*jduckworth@volusia.org*

C. If it becomes necessary for the County to revise any part of this RFP, an addendum will be posted on the County's web site. It is each Respondent's responsibility to check the Volusia County web site for any addenda at www.volusia.org/bidlist. Each Respondent should ensure that they have received all addenda to this RFP before submitting their proposal. In their proposals, Respondents must provide proof of receipt of each addendum by signing each addendum and returning each addendum to the County. Failure to provide this proof may cause Respondent's proposal to be rendered *non-responsive*.

D. Each addendum issued by the County shall become a material part of this solicitation and the resulting Contract.

3.10 Award

A. The County reserves the right to award the Contract to the Respondent(s) that the County deems to offer the best overall proposal or solution, as defined in Section 3.29, Evaluation Criteria in this solicitation. The County is therefore not bound to accept a proposal based only on lowest price.

B. In addition, the County has the sole discretion and reserves the right to cancel this RFP, to reject any/all proposals, to waive any/all informalities and/or irregularities, or to re-advertise with either the identical or revised specifications if it is deemed to be in the best interest of the County to do so. Nothing prohibits the County from rejecting and re-soliciting when responses exceed budget and the County must change the solicitation to lower costs.

C. The County also reserves the right to make multiple awards based on experience and/or qualifications of Respondents and to award only a portion of the items and/or services specified, if deemed to be in the County's best interest.

3.11 Award Term

A. The County is looking to promote partnership relationships within the policies and procedures of public procurement. Pursuant toward that end, the successful Respondent(s) shall be awarded a Contract for an initial seventeen (17) year term from system acceptance with subsequent renewals upon mutual agreement.

B. All renewals will be contingent upon mutual and written agreement and, when applicable, approval of County Council.

3.12 Other Agencies

A. All Respondents awarded Contracts from this solicitation shall extend all subscriber equipment pricing to any entity that utilizes the County's 800MHz public safety radio system.

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B. All Respondents awarded Contracts from this solicitation may, upon mutual agreement, permit any municipality or other governmental agency to participate in the Contract under the same prices, terms, and conditions.

C. It is understood that at no time will any city or municipality or other agency be obligated for placing an order for any other city, municipality, or agency, nor will any city, municipality, or agency be obligated for any bills incurred by any other city, municipality, or agency. Further it is understood that each agency will issue its own purchase order to the awarded Respondent(s).

3.13 F.O.B. Point

The F.O.B. points for the Contract and for all purchases made under it shall be as specified by the using department (in accordance with the RFP proposal form), in Volusia County, Florida. Delivery will not be complete until the using department has accepted each item. Delivery to a common carrier shall not constitute delivery to the ordering agency. All disputes shall be between the Seller/Respondent and the carrier.

3.14 Use of County Logo

The County owns and retains all proprietary rights in its logos, trademarks, trade names, and copyrighted images (Intellectual Property). As such, nothing in this solicitation permits or shall be construed as authorizing Respondent to use or display County's Intellectual Property on Respondents submittal documents or proposal (including any exhibits attached thereto) submitted to County by or on behalf of Respondent in response to this solicitation. The County has the right to redact the County Logo displayed on any proposal submitted.

3.15 Assignment

Contractor may not assign or otherwise convey Contractor's rights and/or obligations under this Agreement without obtaining County's prior written consent, which consent County may withhold, limit and/or condition in County's sole discretion, including, but not limited to, requiring the Contractor or his/her proposed successor in interest to post a performance bond. Any consent by the County under this Section shall be by written amendment to the Agreement in a form and substance specified by the County in its sole discretion. If Contractor desires to assign or otherwise convey its rights and/or obligations under this Agreement, Contractor shall no less than thirty (30) days prior to the assignment's proposed effective date, provide County with a written request for County's consent. Failure to provide such notice may result in the County assessing a processing fee of Five Hundred Dollars (US $500.00); however, payment of such fee shall not entitle the Contractor to the County's acceptance or approval of its request for assignment.

Nothing herein shall preclude the right of the County to waive its rights under this Section but no waiver shall be granted by the County without a written and duly executed amendment to the Agreement.

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3.16 Contract

A. The contents of this RFP and all provisions of the successful proposal deemed pertinent by the County may be, at the sole discretion of the County, incorporated into a Contract and become legally binding on the selected proposer. The content of the Contract may contain changes as a result of the RFP process and the content of the submittal received. The Contract shall, at minimum, include the substantive terms and conditions as outlined in the RFP and be subject to review by the County attorney or designee prior to approval and execution for determination of legal form and substantive sufficiency, and may contain those additional terms and conditions that the County deems in its best interest.

B. The Director of Purchasing and Contracts, County Manager, and County Chair are the sole Contracting Officers for the County of Volusia, Florida, and only they or their designees are authorized to make changes to any Contract.

C. The County shall be responsible for only those orders placed by the County on an authorized signed Purchase Order or Master Agreement. The County shall not be responsible for any order, change substitution or any other discrepancy from the Purchase Order or Master Agreement. If there is any question about the authenticity of a Purchase Order, Master Agreement, or change order, the Respondent should promptly contact the Purchasing Office at 386-736-5935.

3.17 Disclosure of Proposal Content

A. All material submitted becomes the property of the County and may be returned only at the County's option. The County has the right to use any or all ideas presented in any reply to this RFP. Selection or rejection of any submittal does not affect this right.

B. The County of Volusia, Florida, is governed by the Public Record Law, Chapter 119, FS, (as amended).

3.18 Respondent's Responsibility

A Respondent, by submitting a proposal, represents that:

A. The Respondent has read and understands the RFP in its entirety and that the proposal is made in accordance therewith;

B. The Respondent possesses the capabilities, resources, and personnel necessary to provide efficient and successful service to the County;

C. Before submitting its proposal, the Respondent has made all investigations and examinations necessary to ascertain site and/or local conditions and requirements affecting the full performance of the Contract and has verified any representations made by the County of Volusia, Florida, upon which the Respondent has relied;

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D. The Respondent understands and agrees that if the Respondent receives an award, failure to have made such investigations pursuant to Respondent's proposal to the RFP will in no way relieve the Respondent from its obligations to comply in every detail with all provisions and requirements of the Contract, nor will a plea of ignorance of such conditions and requirements be accepted as a basis for any claim by the Respondent for additional compensation or relief; and

E. The Respondent understands and accepts that it will be held responsible for any and all discrepancies, errors, etc., in discounts or rebates which are discovered during the Contract term or up to and including three (3) fiscal years following the County's annual audit.

3.19 Debarment

Purpose and Intent. The county endeavors to solicit offers from, award contracts to, and consent to subcontracts with responsible vendors and contractors only. To further this policy, the county asserts its authority to debar certain vendors and contractors from participating in solicitations pursuant to the policies and procedures herein. The serious nature of debarment requires that this sanction be imposed only when it is in the public interest for the county's protection and not for purposes of punishment. Debarment is intended as a remedy in addition to, and not in substitution of, the evaluation of the responsibility of county vendors and contractors, and this policy and the procedures provided for herein shall not supplant or supersede county's authority to reject or otherwise terminate vendors or contractors based on findings of non-responsibility on a case-by-case basis.

Further information regarding the County's policies and procedures in regards to DEBARMENT may be found at:
https://www.volusia.org/core/fileparse.php/5896/urlt/Debarment-Policy-final-3-27-17.pdf

3.20 Payment Terms

A. The County will remit full payment on all undisputed invoices within forty-five (45) days from receipt by the appropriate person(s) (to be designated at time of Contract) of the invoice(s) or receipt of all products or services ordered.

B. Pursuant to Chapter 218, Florida Statutes, the County will pay interest not to exceed one percent (1%) per month on all undisputed invoices not paid within thirty (30) days after the due date.

C. The County has the capabilities of Electronic Fund Transfer (EFT). List any discounts for prompt payment and/or willingness to accept Electronic Funds Transfer (EFT) and the discount to be applied to such payments. Vendors offering prompt payment discounts, for example 1% - net 10, the discount shall be taken if the check issue date is within specified time period from date of invoice.

D. By submitting a proposal to the County of Volusia, Florida, the Respondents expressly agree that, if awarded a Contract, the County may withhold from any payment monies owed by the Respondent to the County for any legal obligation between the Respondent and the County, including but not limited to real property taxes, personal property taxes, fees, and commissions.

3.21 Conflict of Interest Form

All Respondents shall properly complete, have notarized, and include with their submittal the attached form disclosing any potential conflict of interest that the Respondent may have due to ownership, other clients, Contracts, or interests associated with this project.

3.22 Licenses and Certificates

A. The County reserves the right to require proof that each Respondent is an established business and is abiding by the ordinances, regulation, and laws of its community and the state of Florida, such as but not limited to: Business Tax Receipts, business licenses, Florida sales tax registration, Federal Employers Identification Number; and

B. The Respondent shall be required, upon notification of recommendation of award, to register with the Florida Department of State Division of Corporations at www.sunbiz.org in order to provide services under the resulting Contract.

C. If a license is required, the Respondent shall be licensed to perform the required work in accordance with the laws of the State of Florida and local ordinances. Respondents shall also verify that their Subcontractors are licensed to perform the work in accordance with the laws of the State of Florida and local ordinances.

D. Each Respondent shall submit with their proposal a copy of, and upon award of Contract, the Contractor shall maintain the appropriate licenses and certificates during the term of the Contract and any extensions. Failure to maintain these requirements shall be cause for immediate termination of the Contract.

3.23 Minor Irregularities

The County reserves the right to waive minor irregularities in proposals, providing such action is in the best interest of the County. Minor irregularities are defined as those that have no adverse effect on the County's best interests, and will not affect the outcome of the selection process by giving any Respondent an advantage or benefit not enjoyed by other Respondents.

3.24 Venue and Governing Law

All legal proceedings brought in connection with the Contract executed for the services provided as award under this RFP Contract shall only be brought in a state or federal court located in the State of Florida. Venue in state court shall be in Volusia County, Florida.

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Venue in federal court shall be in the United States District Court, Middle District of Florida, Orlando division. Each Respondent agrees to submit to the personal jurisdiction of these courts for any lawsuits filed there against Respondent. In the event of a legal proceeding, the action shall be by non-jury trial for the adjudication of such suit.

All questions concerning the validity, operation, interpretation, construction and enforcement of any terms, covenants or conditions of this Contract shall in all respects be governed by and determined in accordance with the laws of the State of Florida without giving effect to the choice of law principles thereof and unless otherwise preempted by federal law.

3.25 Insurance

Contractor shall provide the required insurance detailed in Exhibits C.1 – C.3 for the entire Term of the Agreement, as appropriate. Regardless of anything submitted as proof of insurance, Contractor shall comply with all requirements of Exhibit C.1 – C.3.

3.26 Unusual Costs

The Contractor may petition the County at any time for an additional rate adjustment on the basis of extraordinary and unusual changes in the costs of operation that could not reasonably be foreseen by a prudent operator and which, by all reasonable expectations, will continue for at least one (1) year. If the Contractor petitions for such in increase, the Contractor shall also petition for a rate reduction on the basis of extraordinary and unusual changes in the costs of operation that could not reasonably be foreseen by a prudent operator and which, by all reasonable expectations, will continue for at least one (1) year; failure to make such petition may be grounds for Contract termination.

The Contractor's request shall contain substantial proof and justification to support the need for the rate adjustment. The County may request from the Contractor and the Contractor shall provide such further information as may be reasonably necessary in making its determination. The County shall approve or deny the request, in whole or in part, within sixty (60) days of receipt of the request and all other additional information required by the County. Any price redetermination shall be solely based upon the documentation provided and the County reserves the right to rescind any price relief granted should the circumstances change and prices decrease.

3.27 Compliance with Regulations

A. Compliance with FEMA 2 CFR 200.318-326 and Appendix II Contract Provisions

This Agreement and the products/services provided may be utilized in the event of declared State/Federal Emergency and Contractors shall be prepared to comply with the requirements of the FEMA Super Circular CFR 200.318-326 and Appendix II Contract Provisions as amended. These documents can be found on the Internet at:

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https://www.gpo.gov/fdsys/granule/CFR-2014-title2-vol1/CFR-2014-title2-vol1-sec200-318

3.28 Waiver of Claims

Once the Contract expires, or final payment has been requested and made, the Contractor shall have no more than thirty (30) calendar days to present or file any claims against the County concerning the Contract. After that period, the County will consider the Contractor to have waived any right to claims against the County concerning the Contract.

3.29 Evaluation Criteria

Each proposal shall be evaluated using the following criteria:

- Proper timely submittal of ALL documentation in conformance with all requirements of the RFP.

- The Contractor's proposal meets or exceeds the requirements of the RFP and cumulatively provide the service and benefits to the County deemed to be in the best interest of the public. The Evaluation Process may be conducted in two (2) phases.

A. Phase One: This phase shall include the review of the submittals by a County Selected Evaluation Committee using the evaluation criteria. The Evaluation Committee may then short-list for Phase Two. The County reserves the right to request additional information including clarification of any or all information submitted by any Respondent during both phases.

The greatest benefits to the County will be determined based upon the following evaluation criteria:

1. Firm Qualifications [As noted in Tabs 1, 2, 3, 5.5 and 5.6]

   a. Experience in providing similar services / references, including timeliness of performance. In order to evaluate past performance, all proposers (whether an OEM manufacturer or reseller proposing an OEM manufacturer's equipment) are required to submit five (5) references. Four (4) references will need to have used the OEM vendor's P25 technology for a minimum of one (1) years' relevant operational service and have a combination of P25 Phase 1 and Phase 2 radios in daily operation. These four (4) reference's networks must currently support a combination of 3,000 or more P25 Phase 1 and Phase 2 radios in daily operation and must have at least six (6) tower sites. The fifth reference will be a user who has either a P25 Phase 1 or Phase 2 network similar in size to Volusia County's Public Safety Network (thirteen (13) tower sites, 10,000 radios) or greater, and has been in service operation over a year. The

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radios on this reference's network can either be all P25 Phase 1 or Phase 2.

b. Experience in designing and implementing P25 radio systems.

c. Ability to meet timeline and schedule requirements.

d. Availability of sufficient qualified, experienced staff to perform implementation, training, product maintenance and support; adequate organizational structure.

e. Adequate capital resources to maintain and support the services and software product(s) for a preferred seventeen (17) year period.

f. Ability of vendor to implement the technical requirements at contract execution.

g. Qualifications of the firm and the employees that will be assigned to the County project.

h. Organization, scope, clarity, level of detail in the Proposer's RFP submittal.

2. Price Schedules [As noted in Tab 4]

a. Provide completed Pricing Schedules for proposed Scope of Work as presented in Exhibit B.

b. Total cost of equipment and services over the length of contract specified in the RFP based on the initial cost and life cycle analysis.

3. Capabilities of Hardware and Software [As noted in Tabs 5.1, 5.4, and 5.7]

a. The ability of the hardware/software to provide the features defined in Exhibit A.

b. Technological sophistication (state of the art) of the hardware/ software product.

c. Streamlined flow and functionality; ease of use - intuitive functions and tools.

4. Project Understanding and Approach [As noted in Tabs 5.1, 5.2, and 5.7]

a. Quality and detail of the project methodology and approach to support the needs and objectives of the project.

b. Quality and detail of the Project plan.

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c. Proposed timeframe for project completion.

d. Proposed training for County radio staff and radio users.

e. System installation, and implementation plans including degree of anticipated disruption to end user public safety radio communications.

f. Respondent's demonstrated knowledge of County activities.

g. General hardware and software capabilities and required features.

h. Clear understanding of project scope, ability of services/equipment to meet the minimum requirements listed, approach, and underlying assumptions for detailed work plan, scheduling, implementation with minimal interruption of service, along with support and maintenance.

5. Technology [As noted in Tabs 5.1, 5.3, 5.4, and 5.7]

a. Performance, coverage, capability, and versatility of the proposed equipment.

b. Reliability of the proposed equipment.

c. The redundancy (fault tolerance) and disaster recovery aspects of the radio system design.

d. Adherence and support of required P25 standards, specifications, and related TIA standards.

e. Adherence to P25 Interoperability standards.

f. Respondent's use of technology that shall minimize long term County costs and improve communications.

g. Conversion methodology and a thorough understanding of the County's current operations.

6. Warranty and Maintenance Requirements [As noted in Tabs 5.8.]

a. Location of Contractor's service facility in relation to Volusia County and travel time from that facility to all existing tower sites in Volusia County's Public Safety radio network.

b. Length of equipment warranty extended to Volusia County.

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c. Quality of maintenance/service, ability to meet response time goals in the RFP, availability and locations of service parts.

d. Support capabilities of staff and resources available for software/hardware maintenance and support; types and available hours of support services.

7. Financial Stability [As noted in Tab 8]

a. Financial Stability: A Dun and Bradstreet report may be used by the County to evaluate Respondent's financial stability. All Respondents shall be prepared to supply a financial statement upon request, preferably a certified audit of the last available fiscal year.

B. Phase Two: It is anticipated the Evaluation Committee may short-list or request scripted demos from all Respondents. The Respondents will be given a scripted demonstration for presentation. Possible site visits may be scheduled and other information may be required to determine and assist in the selection of which system and Respondent shall be awarded a Contract. The Evaluation Committee shall then meet for a final ranking of the Respondents.

1. Scripted Scenario Demonstrations

a. Respondents may be invited to make presentations to County personnel using scripted scenarios provided by the County.

b. Presentations of scripted scenario demonstrations will be held at a yet to be determined location.

c. Demonstrations will follow a scripted format to ensure a fair evaluation of each proposed solution.

d. The Respondents will be provided with the demonstration scripts in advance of the actual demonstration to ensure ample preparation time.

e. Each Respondent invited to make a presentation will be given the same amount of time to prepare their response.

f. Respondent representative(s) attending these presentations must be qualified to respond to questions related to any section of the proposal, including the systems and the components.

g. The Respondents should be prepared to fully demonstrate any of the system functionality that has been characterized in the response as being currently operating in a production environment.

2. Site Visits – The County reserves the right to request site visits.

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3.30 Presentations by Respondents

A. The County of Volusia, at its sole discretion, may ask individual Respondents to make oral presentations and/or demonstrations without charge to the County.

B. The County reserves the right to require any Respondent to demonstrate to the satisfaction of the County that the Respondent has the fiscal and managerial abilities to properly furnish the services proposed and required to fulfill the requirements of the RFP. The demonstration must satisfy the County and the County shall be the sole judge of compliance.

C. Respondents are cautioned not to assume that presentations will be required and should include all pertinent and required information in their original proposal package.

3.31 Post-Proposal Discussions with Respondents

It is the County's intent to award a Contract(s) to the Respondent(s) deemed most advantageous to the County in accordance with the evaluation criteria specified in this RFP. The County reserves the right, however, to conduct post-closing discussions with any Respondent who has a realistic possibility of Contract award including, but not limited to, requests for additional information and competitive negotiations.

3.32 Termination

A. The resulting Contract may be terminated by either party upon the material breach by the other party if such breach is not cured within thirty (30) days written notice from the non-breaching party.

B. County may terminate the resulting Contract for convenience or non-appropriation upon at least thirty (30) calendar days' prior written notice to Contractor.

C. The Contractor may cancel the resulting Contract with three-hundred sixty-four (364) days written notice to the Director of Purchasing and Contracts. Failure to provide proper notice to the County may result in the Contractor being barred from future business with the County.

D. After Contractor's receipt of a notice of termination pursuant to Paragraph A above (or to the extent Contractor has not cured a material breach within thirty (30) days notice from County), and except as otherwise directed by the County, the Contractor shall:

1. Stop work under the Contract or applicable statement of work on the date specified in the notice of termination.

2. Place no further orders or subcontracts for materials, services or facilities.

3. Terminate all orders and subcontracts to the extent that they relate to the performance of work or services terminated by the notice of termination.

4. With the approval of the County and to the extent required by the County, settle all outstanding liabilities and all claims arising out of such termination of orders and subcontracts. County's approval of such settlements shall be final for all the purposes of Section 3.30, Termination.

E. After receipt of a notice of termination, the Contractor shall submit to the County its termination claim for amounts owed by County (which shall include, without limitation, all amounts due for work or services performed through the date of termination), in the form and with a certification as prescribed by the County. Such claim shall be submitted promptly but in no event later than thirty (30) days from the effective date of termination, unless one or more extensions in writing are granted by the County, upon request of the Contractor made in writing within such thirty (30) days period or authorized extension thereof. Upon failure of the Contractor to submit its termination claim within the time allowed, the County may determine on the basis of information available to it, the amount, if any, due to the Contractor by reason of the termination and shall thereupon pay to the Contractor the amount so determined. In the event County terminates for convenience or non-appropriation, Contractor shall not be obligated to refund to County any prepaid fees.

F. **Non-Appropriation**. The resulting Contract may be terminated by the County or Contractor if the County does not appropriate the funding in any fiscal year necessary to pay the compensation set forth in the Article entitled Compensation in the resulting Contract.

G. In the event that the resulting Contract is terminated by the County or Contractor for non-appropriation, Contractor shall be paid in accordance with terms of the Article entitled Compensation in the resulting Contract. Contractor shall be paid (a) to the date of termination on a prorated basis for any task and deliverable designated for payment on the payment milestone schedule that was started but not completed and/or (b) for any work or deliverable that has been completed but not yet been paid. County's obligation to pay Contractor under this Section 3.30, Termination, and the resulting Contract is limited to the budgeted amount for the fiscal year approved by the Volusia County Council for the then current fiscal year of the resulting Contract. Contractor shall have no right to compel the Volusia County Council to appropriate funds for any fiscal year to pay the compensation.

H. Upon being notified of County's election to terminate for default of Contractor, non-appropriation or convenience, Contractor and its Subcontractors shall refrain from performing further work or incurring additional expenses under the terms of the resulting Contract which is not specifically authorized in the notice of termination.

I. If termination of the resulting Contract occurs for any reason:

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1. Except as otherwise provided in the resulting Contract, Contractor shall return to the County, or destroy, all County confidential information in Contractor' possession and shall certify the destruction or return of said information in a written document signed by the duly authorized representative of the Contractor that all such information has been destroyed or returned, provided that Contractor shall be permitted to retain an archival copy of any such confidential information (provided it continues to maintain the confidentiality of such as prescribed herein) to the extent necessary to have a record of the work or service performed hereunder.

2. For all undisputed outstanding invoices submitted to the County for Work completed or deliverables delivered prior to the effective date of the termination, the County shall cause payments to be made to Contractor within forty-five (45) days of receipt of invoice. Contractor shall invoice the County for any sums Contractor claims to be owed by County under the resulting Contract for work performed from the last invoice to the effective date of termination. County shall review such invoice for payment within fifteen (15) days of receipt and County shall pay any undisputed amount within forty-five (45) days, subject to the Article entitled Compensation in the resulting Contract. Any disputed amounts on any invoices shall be subject to the dispute resolution process set forth in the Article entitled Dispute Resolution in the resulting Contract.

J. In the event of termination by the County for non-appropriation, for all items or products ordered by Contractor before receipt by Contractor of the Notice of Termination which Contractor could not cancel without imposition of a fee, the County shall cause payments to be made to Contractor within forty-five (45) days of receipt of an undisputed invoice for all cancellation, restocking or residual fees resulting from the cancellation or return of third party products ordered from or shipped by the vendor thereof prior to the effective date of the termination.

K. In the event Contractor is unable to deliver the system in a manner that enables the System and all of its functional components to pass final acceptance testing, County shall have the right to terminate the Contract and have the right to receive from Contractor a refund of any implementation fees paid through the date of such termination.

3.33 Incurred Expenses

This RFP does not commit the County of Volusia to award a Contract, nor shall the County of Volusia be responsible for any cost or expense which may be incurred by any Respondent in preparing and submitting a proposal in response to this RFP, or any cost or expense incurred by any Respondent prior to the execution of a Contract.

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3.34 Minimum Specifications

The specifications listed in the Scope of Service are the minimum required performance specifications for this RFP. They are not intended to limit competition nor specify any particular Respondent but to ensure that the County receives quality services.

3.35 Compliance with Laws and Regulations

Contractors shall be responsible to know and to apply all applicable federal, state, and local laws, ordinances, rules, regulations (including but not limited to the following statutes: Americans with Disabilities Act (ADA),Titles I, II and III of the ADA; Federal Immigration Reform and Control Act of 1986 (as amended); and Title VII of the Civil Rights Act of 1964 (as amended), and all orders and decrees of bodies or tribunals having jurisdiction or authority which in any manner affect the work, or which in any way affect the conduct of the work. Contractor shall always observe and comply with all such laws, ordinances, rules, regulations, orders, and decrees. The awarded Contractor shall protect and indemnify the County and all its officers, agents, servants, or employees against any claim or liability arising from or based on the violation of any such law, ordinance, rule, regulation, order, or decree caused or committed by Contractor, its representatives, Subcontractors, sub-consultants, professional associates, agents, servants, or employees.

At time of submittal, Contractors must hold the required licensure to be the prime Contractor for all work to be performed under this RFP. If any Contractor proposes to use a Subcontractor or sub-consultant to perform any work under this RFP, such Subcontractor and/or sub-consultant shall, at the time of submittal, hold the required licensure for all work to be performed under this Contract as a Subcontractor and shall maintain such license(s) in full force and effect during the term of the awarded Contract. All licenses and permits required to perform Contractor's duties under this RFP, whether such license or permit is required by the federal government, State of Florida, Volusia County, or any municipality, shall be at each Contractor's sole cost and expense, and shall not be a cost of the County. All required licenses and permits shall be maintained in full force and effect during the term of the awarded Contract.

3.36 Scrutinized Companies-FL Statute Section 287.135 and 215.47

Contractor must certify that the company is not participating in a boycott of Israel. For Contracts for goods or services of one million dollars or more, Contractor must also certify that Contractor is not on the Scrutinized Companies that Boycott Israel List, not on the Scrutinized Companies with Activities in Sudan List, and not on the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or has not been engaged in business operations in Cuba or Syria. Subject to limited exceptions provided in state law. The County will not contract for the provision of goods or services with (i) any company participating in a boycott of Israel, and, (ii) for Contracts for goods or services of one million dollars or more, any other scrutinized company as described above. Contractor must submit the certification form (See Section 14.0). Submitting a false certification shall be deemed a material breach of contract. The County shall provide notice, in writing, to the Contractor of the County's determination concerning the false

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certification. The Contractor shall have five (5) Calendar days from receipt of notice to refute the false certification allegation. If such false certification is discovered during the active contract term, the Contractor shall have ninety (90) days following receipt of the notice to respond in writing and demonstrate that the determination of false certification was made in error. If the Contractor does not demonstrate that the County's determination of false certification was made in error then the County shall have the right to terminate the Contract and seek civil remedies pursuant to Section 287.135, Florida Statutes, as amended from time to time.

3.37 Limitation of Liability and Indemnification of County

A. **Indemnification**. The Contractor shall indemnify, defend and hold harmless the County, including its districts, authorities, separate units of government established by law, ordinance or resolution, partners, elected and non-elected officials, employees, agents, volunteers, and any party with whom the County has agreed by contract to provide additional insured status from and against all claims, damages, losses, and expenses, including, but not limited to attorney's fees, arising out of, resulting from, or incident to Contractor's performance of its obligations in whole or part of this Contract, unless such injury or damage is occasioned solely by the fault, negligence, or willful misconduct of the County.

B. In all claims against County, no indemnification obligation shall be limited in any way by any limitation on the amount or type of damages, compensation or any benefits payable by or for Contractor, or its employees, agents, contractors, or subcontractors.

C. **Sovereign Immunity**. County expressly retains all rights, benefits and immunities of sovereign immunity in accordance with Section 768.28, Florida Statutes (as amended). Notwithstanding anything set forth in any Section of this Agreement to the contrary, nothing in this Agreement shall be deemed as a waiver of immunity or limits of liability of the County beyond any statutory limited waiver of immunity or limits of liability which may have been or may be adopted by the Florida Legislature and the cap on the amount and liability of the County for damages, regardless of the number or nature of claims in tort, equity, or contract, shall not exceed the dollar amount set by the legislature for tort. Nothing in this Agreement shall inure to the benefit of any third party for the purpose of allowing any claim against the County, which claim would otherwise be barred under the doctrine of sovereign immunity or by operation of law.

D. **Infringement Claim.**

1. For all Licensed Software or derivate works of the Licensed Software used by County under this Agreement, Contractor agrees to protect, defend, indemnify, and hold harmless County, its agents, elected officials and employees of County from and against any and all claims, demands, actions, and causes or action which may arise asserting that all or any part of Contractor's Licensed Software or applications that are owned and licensed by Contractor to County for use thereof by County, infringe or misappropriate any third party's patent, copyright, trademark, trade secret, or other intellectual property rights protected by law. (replaces "valid state patent, copyright, trademark, or any trade secret protected

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under United States law.").

2. In the event of an infringement claim, Contractor shall have the option: (i) to procure for County the right to continue using any product or service found to be infringing; (ii) to replace any such infringing product or service with a non-infringing product or service; or (iii) to modify such infringing product or service to make it non-infringing. Contractor shall have no obligation under this Section 3.37, Limitation of Liability and Indemnification of County, if the infringement claim is based upon the use of the system in combination with other hardware or software applications not furnished by Contractor, or if such a claim arises from County's modification of the system without the authorization of Contractor.

3.38 Records & Right to Audit

County shall have the right to audit the books, records, and accounts of Contractor and its Subcontractors that are related to the resulting Contract. Contractor and its Subcontractors shall keep such books, records, and accounts as may be necessary in order to record complete and correct entries related to the resulting Contract. Contractor shall preserve and make available, at reasonable times for examination and audit by County, all financial records, supporting documents, statistical records, and any other documents pertinent to this Contract for a retention period of five (5) years after completion or termination of the Contract, and any renewals, as required by Item 65, General Records Schedule GS1-SL for State and Local Government Agencies, effective February 19, 2015 and the Florida Public Records Act (Chapter 119, Florida Statutes). Contractor shall, by written Contract, require its Subcontractors to agree to the requirements and obligations of this Section 3.38, Audits will be subject to applicable privacy and confidentiality laws and regulations and Contractor's privacy and confidentiality policies and procedures.

3.39 Change in Scope of Services/Work

A. The County may order changes in the work consisting of additions, deletions, or other revisions within the general scope of the awarded Contract. No claims may be made by the Contractor that the scope of the project or of the Contractor's services has been changed, requiring changes to the amount of compensation to the Contractor or other adjustments to the Contract, unless such changes or adjustments have been made by written amendment or change order to the Contract signed by the County Representative, County's Director of Purchasing and Contracts, and the Contractor.

B. If the Contractor believes that any particular work is not within the Statement of Work of the Contract, is a material change, or will otherwise require more compensation to the Contractor, the Contractor must immediately notify the County's Representative in writing of this belief. If the County's Representative believes that the particular work is within the scope of the Contract as written, the Contractor will be ordered to and shall continue with the work as changed and at the cost stated for the work within the Statement of Work. The Contractor must assert its right to an adjustment under this clause within thirty (30) days from the date of receipt of the written order.

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C. The County reserves the right to negotiate with the awarded Contractor(s) without completing the competitive RFP process for materials, products, and/or services similar in nature to those specified within this RFP for which requirements were not known when the RFP was released.

3.40 Modifications Due to Public Welfare or Change in Law

The County shall have the power to make changes in the Contract as the result of changes in law and/or Ordinances of Volusia County to impose new rules and regulations on the Contractor under the Contract relative to the scope and methods of providing services as shall from time-to-time be necessary and desirable for the public welfare. The County shall give the Contractor notice of any proposed change and an opportunity to be heard concerning those matters. The Statement of Work and method of providing services as referenced herein shall also be liberally construed to include, but is not limited to the manner, procedures, operations and obligations, financial or otherwise, of the Contractor. In the event any future change in Federal, State, or County law or the Ordinances of Volusia County materially alters the obligations of the Contractor, or the benefits to the County, then the Contract shall be amended consistent therewith. Should these amendments materially alter the obligations of the Contractor, then the Contractor or the County shall be entitled to an adjustment in the rates and charges established under the Contract. Nothing contained in this Contract shall require any party to perform any act or function contrary to law. The County and Contractor agree to enter into good faith negotiations regarding modifications to the Contract which may be required in order to implement changes in the interest of the public welfare or due to change in law. When such modifications are made to the Contract, the County and the Contractor shall negotiate in good faith, a reasonable and appropriate adjustment for any changes in services or other obligations required of the Contractor directly and demonstrably due to any modification in the Contract under this clause.

3.41 Safety

The Contractor shall take the necessary precautions and bear the sole responsibility for the safety of the methods employed in performing the work. The Contractor shall at all times comply with the regulations set forth by federal, state, and local laws, rules, and regulations concerning "OSHA" and all applicable state labor laws, regulations, and standards. The Contractor shall indemnify and hold harmless the County from and against all liabilities, suits, damages, costs, and expenses (including attorney's fees and court costs) which may be imposed on the County because of the Contractor, Subcontractor, or supplier's failure to comply with the regulations.

3.42 Right to Require Performance

A. The failure of the County at any time to require performance by the Contractor of any provision hereof shall in no way affect the right of the County thereafter to enforce same, nor shall waiver by the County of any breach of any provision hereof be taken or held to be a waiver of any succeeding breach of such provision or as a waiver of any provision itself.

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B. In the event of failure of the Contractor to deliver services in accordance with the Contract terms and conditions, the County, after due written notice, may procure the services from other sources and hold the Contractor responsible for any resulting additional purchase and administrative costs. This remedy shall be in addition to any other remedies that the County may have.

3.43 Force Majeure

Neither party shall be liable for any failure or delay in the performance of its obligations under the Contract to the extent such failure or delay necessarily results from the occurrence of a Force Majeure Event beyond the control or reasonable anticipation of either party, including, but not limited to, compliance with any unanticipated government law or regulation not otherwise in effect at the time of execution of this Contract, acts of God, unforeseeable governmental acts or omissions, fires, strikes, natural disasters, wars, riots, transportation problems, and/or any other unforeseeable cause whatsoever beyond the reasonable control of the parties (and such cause being referred to as a "Force Majeure Event"). Accordingly, the parties further agree that:

A. Upon the occurrence of Force Majeure Event, the non-performing party shall be excused from any further performance of those obligations under this Contract that are affected by the Force Majeure Event for as long as (a) the Force Majeure Event continues; and (b) the non-performing party continues to use commercially reasonable efforts to recommence performance whenever and to whatever extent possible without delay.

B. Upon the occurrence of a Force Majeure Event, the non-performing party shall notify the other party of the occurrence of such event and describe in reasonable detail the effect(s) of such event upon the party's performance of its obligations and duties pursuant to this Contract. Such notice shall be delivered or otherwise communicated to the other party within two (2) business days following the failure or delay caused by the Force Majeure Event, or as soon as possible after such failure or delay if the Force Majeure Event precludes the non-performing party from providing notice within such time period.

C. In the event of a Force Majeure Event, the time for performance by the parties under the applicable statement of work shall be extended for a period of time equal to the time lost by reason of such cause through execution of a Change Order pursuant to the terms of the Contract.

3.44 Contractor's Personnel

The Contractor shall be responsible for ensuring that its employees, agents, and Subcontractors comply with all applicable laws and regulations and meet all federal, state, and local requirements related to their employment and position.

By submission of a proposal, each Contractor certifies that it does not knowingly or willingly and will not during the performance of the resulting Contract employ illegal alien workers (i.e., non-U.S. citizens who have not been issued valid, appropriate, and current

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non-immigrant work visas, Form I-551s, or other similar governmental documentation necessary to authorize such persons to reside and perform compensated work or services, whether temporarily or permanently, within the United States) or otherwise violate the provisions of the Federal Immigration Reform and Control Act of 1986, as amended.

During the performance of the Contract, the Contractor shall agree to the following:

- The Contractor shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, age, handicap, or national origin, except when such condition is a bona fide occupational qualification reasonably necessary for the normal operations of the Contractor. The Contractor agrees to post in conspicuous places, visible to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.

- The Contractor, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, shall state that such Contractor is an Equal Opportunity Employer.

Notices, advertisements, and solicitations placed in accordance with federal law, rule, or regulation shall be deemed sufficient for the purpose of meeting the requirements of this Section 3.44.

The Contractor shall include the provisions of the foregoing paragraphs above in every subcontract or purchase order so that the provisions will be binding upon each Subcontractor.

The Contractor and any Subcontractor shall pay all employees working on the awarded Contract not less than minimum wage specified in the Fair Labor Standards Act (29 CFR 510-794), as amended.

Any information concerning the County, its products, services, personnel, policies, or any other aspect of its business learned by the Contractor or personnel furnished by the Contractor in the course of providing services pursuant to the Contractor, shall be held in confidence and shall not be disclosed by the Contractor or any employee or agents of the Contractor or personnel furnished by the Contractor, without the prior written consent of the County.

3.45 Disadvantaged Business Enterprise Program

The County Council has adopted policies which assure and encourage the full participation of Disadvantaged Business Enterprises (DBE) in the provision of goods and services. The County encourages joint ventures between majority-owned firms and qualified disadvantaged / minority / women-owned firms.

3.46 Performance and Payment Bonds – Project (excluding tower construction)

Contractor shall furnish Performance and Payment Bonds, prior to performing any work under the Contract in an amount equal to the total value of the project (excluding tower construction) including any amendments or change orders made thereto pursuant to the

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order or other documentation executed by the parties, in strict accordance with FL Statute, §255.05. Failing to do so, shall constitute a material breach of this Contract. The Bonds shall be secured from or countersigned by an agency or surety company recognized in good standing and authorized to do business in the State of Florida.

Simultaneously with the delivery of the executed Contract to the County, a Respondent to whom a Contract has been awarded must deliver to the County, executed, separate performance and payment bonds on the prescribed forms, each in an amount of one hundred percent (100%) of the Contract price of the accepted proposal, excluding the cost of tower construction, as security for the faithful performance of this Contract and for the payment of all persons performing labor or furnishing materials in connection therewith. The performance and payment bonds shall have as the surety thereon only such surety company or companies as are authorized to write bonds of such character and amount under the laws of the State of Florida and with a resident agent in Florida. The Attorney-in-Fact or other officer who signs performance and payment bonds for a surety company must record with such bonds a certified copy of his Power-of Attorney authorizing him/her to do so.

3.47 Performance and Payment Bonds – Tower Construction

Contractor shall furnish Performance and Payment Bonds, prior to performing any work under the Contract in an amount equal to the total value of the tower construction including any amendments or change orders made thereto pursuant to the order or other documentation executed by the parties, in strict accordance with FL Statute, §255.05. Failing to do so, shall constitute a material breach of this Contract. The Bonds shall be secured from or countersigned by an agency or surety company recognized in good standing and authorized to do business in the State of Florida.

Simultaneously with the delivery of the executed Contract to the County, a Respondent to whom a Contract has been awarded must deliver to the County, executed, separate performance and payment bonds on the prescribed forms, each in an amount of one hundred percent (100%) of the Contract price of the tower construction portion of the accepted proposal as security for the faithful performance of this Contract and for the payment of all persons performing labor or furnishing materials in connection therewith. The performance and payment bonds shall have as the surety thereon only such surety company or companies as are authorized to write bonds of such character and amount under the laws of the State of Florida and with a resident agent in Florida. The Attorney-in-Fact or other officer who signs performance and payment bonds for a surety company must record with such bonds a certified copy of his Power-of Attorney authorizing him/her to do so.

3.48 Claim Notice

The Contractor shall immediately report in writing to the County's designated representative or agent any incident that might reasonably be expected to result in any claim under any of the coverage mentioned herein. The Contractor agrees to cooperate with the County in promptly releasing reasonable information periodically as to the disposition of any claims, including a résumé of claims experience relating to all Contractor

operations at the County project site. The designated representative for the County shall be:

Name:	County of Volusia, Florida Personnel/Risk Management Division
Address:	230 North Woodland Boulevard, Suite 250 DeLand, Florida 32720
Telephone:	386-736-5963
Fax:	386-822-5006

3.49 County/Contractor Relationship

The County of Volusia reserves the right to award one or more Contracts to provide the required services as deemed to be in the best interest of the County.

Any awarded Contractor shall provide the services required herein strictly under a Contractual relationship with the County and is not, nor shall be, construed to be an agent or employee of the County. As an independent Contractor the awarded Contractor shall pay any and all applicable taxes required by law; shall comply with all pertinent Federal, State, and local statutes including, but not limited to, the Fair Labor Standards Act, the Americans with Disabilities Act, the Federal Civil Rights Act, and any and all relevant employment laws. The Contractor shall be responsible for all income tax, FICA, and any other withholdings from its employees or Subcontractor's wages or salaries. Benefits for same shall be the responsibility of the Contractor including, but not limited to, health and life insurance, mandatory social security, retirement, liability/risk coverage, and worker's and unemployment compensation.

The independent Contractor shall hire, compensate, supervise, and terminate members of its work force; shall direct and control the manner in which work is performed including conditions under which individuals will be assigned duties, how individuals will report, and the hours individuals will perform.

3.50 New Material

Unless otherwise provided for in this specification, the awarded Contractor represents and warrants that the goods, materials, supplies, or components offered to the County under this RFP solicitation are new, not used or reconditioned. The Contractor represents that these goods, materials, supplies, or components are not of such age or so deteriorated as to impair their usefulness or safety and that the goods, materials, supplies, or components offered are current production models of the respective manufacturer. If the Contractor believes that furnishing used or reconditioned goods, materials, supplies, or components will be in the County's interest, the Contractor shall so notify the County Procurement Analyst in writing no later than ten (10) working days prior to the date set for opening of proposals. The notice shall include the reasons for the request and any benefits that may accrue to the County if the Procurement Analyst authorizes the inclusion of used or reconditioned goods, materials, supplies, or components.

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3.51 Damages

Due to the nature of the services to be provided and the potential impact to the County for loss, the Contractor cannot disclaim consequential or special damages related to the performance of this Contract. The Contractor shall be responsible and accountable for any and all damages, directly or indirectly, caused by the actions or inaction of its employees, staff, or Subcontractors. There are no limitations to this liability.

3.52 Proposal Acceptance/Rejection

The County reserves the right to accept or reject any or all proposals received as a result of this RFP, or to negotiate separately with competing Respondents, and to waive any informalities, defects, or irregularities in any proposal, or to accept that proposal or proposals, which in the judgment of the proper officials, is in the best interest of the County.

3.53 Proposal Acceptance Period

Any Proposal in response to this RFP shall be valid through **December 31, 2021.** At the end of this time the proposal may be withdrawn at the written request of the Respondent if no award has been made. If the Proposal is not withdrawn at that time it remains in effect until an award is made or the solicitation is canceled regardless of the status of the proposal bond. The County reserves the right to request an extension of the proposals if a Contract has not been executed by December 31, 2021.

3.54 Proof of Third Party Software License

If Third Party Software is provided by the Contractor to the County, whether by itself or in conjunction with any products, equipment, solutions, or services provided by the Contractor or any of its subcontractors, the Contractor shall:

A. Provide documented proof of proper licensure allowing the County the lawful use of all such third-party software products as contemplated by this Agreement. This proof will include, at a minimum, copies of software licenses and proofs-of-purchase (*e.g.*, copies of paid invoices).

B. Provide updated copies of such proof of proper licensure as requested and as necessary when software is changed during system upgrades or modifications.

C. Supply additional supporting evidence of software licensure upon request in order to meet auditing and/or tracking requirements of the County. This includes promptly supplying such evidence of licensure in the event of an audit or evaluation of the County's software or systems performed at the request or upon the demand of a software developer or supplier.

The Contractor shall respond to all requests for documentation regarding third-party software licensure within one (1) week, unless otherwise agreed between the parties. Time

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is of the essence in producing such documentation, insofar as there may be penalties assessed against the County for any delays encountered during a license audit.

The Contractor shall further indemnify, defend, and hold the County harmless from and against any contractual, statutory, or regulatory penalties and costs assessed against the County arising from the Contractor's failure to provide proper software licensure or proof thereof, including the cost to the County of purchasing appropriate licenses to continue the County's use of the software pursuant to this Agreement.

3.55 Product Malfunction

In the event that the County terminates the Contract due to default by the Contractor or does not accept the proposed product(s) after installation due to errors, malfunctions, and/or non-performance of the Contractor (or its sub-contractor), the County shall have the right to use the product(s), without charge, until it can be replaced in accordance with the Transition Plan provisions of this solicitation.

In the event that the Contractor cannot correct Critical or Non-Critical Problems noted by the County in the then implemented version (including updates) of the product(s), the Contractor shall replace the product or provide a "work around" within ten (10) calendar days after notification that a software correction is required. In the event that the Contractor does not keep the product(s) functioning according to specifications in accordance with the County's sole judgment, then the County, at its sole option, shall have the right to return any or all of the product(s) and related technical data and terminate the Contract. The County may elect to levy liquidated damages as may be established in the awarded Contract or withhold final payments in the case that the system proves unreliable or does not perform. The County may terminate the Contract for this cause.

3.56 Transition Services

A. If the Contract expires or is earlier terminated, the Contractor shall provide Transition Support Services to the County and develop a transition plan (the "Transition Plan") in the form of an Amendment or Change Order to this Contract to be signed by the County and the Contractor. Contractor's time will be limited to Support Services needed to produce required materials and to respond to questions regarding the System to be transitioned to another Contractor. Examples of Support Services include but are not limited to delivering via electronic media, accurate copies of any data that is requested and necessary to perform the services. The Contractor shall cooperate with County to develop and implement an orderly transition plan and Contractor shall continue to provide services to County until the Transition Plan is completed to the satisfaction of the County. Materials include but are not limited to assistance including all documentation so Contractor can provide the Transition Support Services to County or another Contractor. However, in no event shall Contractor be obligated to disclose any proprietary information or trade secrets to any competitor of Contractor.

B. If the Contract is earlier terminated by the Contractor, other than for default by the County, then Contractor shall provide Transition Support Services at no cost to the

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County. If this Contract expires or is earlier terminated by the County, then Contractor shall provide Transition Support Services upon terms mutually agreed upon by the parties.

3.57 Return of Assets

Except as otherwise provided in the Contract, or upon termination of the Contract, the Contractor shall return all County-owned assets including, but not limited to, stored data and information.

3.58 Excessive Downtime

Equipment or software furnished under the Contract shall be capable of continuous operation in accordance with the minimum requirements.

3.59 Ownership of County Intellectual Property

Contractor agrees that all domain names registrations, SSL certificates, personal name SLDs, e-mail addresses, other registrations, and trade names or trademarks that County owns prior to or acquires under this Agreement, whether purchased by the County or by Contractor for the specific benefit of the County under this Agreement shall be owned by the County with all rights of title, interest, and possession. As such, Contractor agrees that County shall have immediate and unfettered access to and the use and benefit of County's domain name registrations, SSL certificates, Personal name SLDs, and trade names or trademarks at any time, including upon the termination of this Agreement by either party. Contractor further agrees that County's domain names, SSL certificates, personal name SLDs, trade names or trademarks shall not be used by Contractor or its subcontractors unlawfully or allow unauthorized access to County's data in County systems or networks.

3.60 Data Security

With respect to the System and environment the Contractor uses to provide services, including those for data storage and transmission, the Contractor agrees as follows:

A. Ownership of County Data. County is the owner of its data, data compilations and reports or compilations of its data generated from use of the Licensed Software ("County Data"). Notwithstanding anything to the contrary contained in this Agreement, the County shall have the right to use the Contractor's Licensed Software to access and have unfettered use of such data, reports, compilations, or information derived from or resulting from the use of the Licensed Software and/or to generate reports from such data, files or information. Contractor acknowledges and agrees that the County is the owner and custodian of said data, compilations and information whether or not such is electronically retained and regardless of the retention media and that the use of the Licensed Software in relation to such information or data does not in any way restrict County in the County's rights of disclosure of its data and information.

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B. County Proprietary Information. After notification of Contract award and prior to commencement of work, the Contractor shall conduct background screening for all of its employees and approved contractors or subcontractors who provide services to the County or have access to the County proprietary information, including, without limitation, criminal background checks. In addition, the Contractor shall train its employees and approved contractors and subcontractors who handle the County proprietary information on security standards and activities. The Contractor shall take necessary security measures to ensure that the County proprietary information cannot be downloaded to or printed from any devices that its employees, contractors or subcontractors use, including, and without limitation, desktops, laptops, and USB flash drives. The Contractor is responsible for providing background screening verification to the County.

C. County Data. In storing or processing the County Data, the Contractor shall not comingle the County Data with any data from Contractor's other clients.

D. Security Operating Protocols. The Contractor shall employ generally accepted industry security methods and internal security operating protocols to prevent intrusion into the service the Contractor provides to the County or interception of data or communications by unauthorized third parties. Such practices shall include, without limitation: encryption of data for storage and for transmission; firewall protection; password protection; review of firewall logs and intrusion detection notifications on a daily basis; and update of virus definitions and security patches on an as-needed basis.

E. Hosting Provider. The Contractor shall only use servers located in secure facilities in the U.S. and administered by a third party hosting provider ("Hosting Provider") to provide services to the County. The Contractor represents and warrants that each Hosting Provider used by the Contractor will cause to be conducted, on at least an annual basis, an SSAE 16 Type II (or equivalent) security audit by a reputable security specialist who shall identify in a written report (a copy of which shall be promptly delivered to the County upon request and which shall be the Contractor's Proprietary Information) any readily identifiable security vulnerabilities in connection with the applicable Hosting Provider's services that the Contractor uses and the operating environment thereof.

F. County Data Location. Except for sending the County Data to the County, the Contractor shall keep the County Data solely in its Hosting Provider's facility or facilities located in the United States and shall not allow such data to leave such facility or facilities in any form.

G. Security Breach. Within twelve (12) hours of discovery, the Contractor shall notify the County should it discover any breach of the security provisions set forth in this Agreement or a loss, interception, unauthorized disclosure or other compromise of the County Data and shall immediately coordinate with the County to investigate and remedy such breach(es) in a diligent and timely manner. Except as may be strictly required by applicable law, the Contractor agrees that it will not inform any third party of any such security breach involving the County Data without the

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County's prior written consent; however, if such disclosure is required by applicable law, the Contractor agrees to work with the County regarding the content of such disclosure so as to minimize any potential adverse impact upon affected parties.

H. Backup Materials. The Contractor shall maintain backup servers as well as a complete and current backup copy of the System that the Contractor uses to provide services to the County and the data processed through the System ("Backup Materials"). Backup Materials shall be maintained at a separate physical location located in the United States. If access or use of the service is interrupted, the appropriate backup shall be activated within four (4) hours to minimize disruptions.

3.61 Access to County System

A. The County, in its sole discretion, may permit the Contractor to have on-line access to designated computer systems of the County in order to facilitate the Contractor's ability to perform its obligations under this Agreement. Such access shall be used only in furtherance of the Contractor's duties under this Agreement and may not be used for any other purpose. If such access is granted, the Contractor shall give to the County the names of the Contractor's employees who have a legitimate business need for such access to the County's computer systems, and the County shall provide a separate user identification code for each person, if applicable.

B. The Contractor, at its own expense, shall provide and maintain any hardware, telecommunications services and software not furnished by the County which is needed to communicate reliably with the County's computer systems. The County, in its sole discretion, may terminate the Contractor's access to the County's computer network at any time. The Contractor shall ensure that: (a) computer access is limited to those employees with a legitimate business need whose names have been furnished to the County; and (b) such employees with access agree to keep any information so obtained strictly confidential, to use such information only to perform the Contractor's contract obligations to the County and to cease accessing the County's computer systems when no longer required to perform work under this Agreement.

C. The Contractor shall promptly notify the County if it becomes aware of any unauthorized access to the County's computer systems or unauthorized use of the information on the systems. Any information to which the Contractor, its officers, employees, subcontractors or agents becomes privy as a result of such access shall be deemed proprietary information and protected by the provisions of this Agreement.

D. The Contractor shall cooperate with the County in the investigation of any apparent unauthorized access by the Contractor to the County computer or electronic data storage systems or unauthorized release of the County proprietary information by the Contractor. The Contractor warrants and agrees that its personnel will not remotely access the County's system from a networked computer unless the network is protected from all third party networks by a firewall that is maintained

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with all patches up to date by an administrative staff. Said firewall must be certified by the International Computer Security Association (ICSA) (or an equivalent certification as determined by the County) if the connection to the County's network is an ongoing connection such as broadband or Metro E.

4.0 SUBMITTAL REQUIREMENTS

It is **not** necessary to return every page of this document with the Proposal; return *only* the pages that require signatures or information as listed below.

Proposals shall include all of the information solicited in this RFP, and any additional data that the Respondent deems pertinent to the understanding and evaluating of the proposal. Proposals shall be organized in sections tabbed in the order described below. The Respondent should not withhold any information from the written response in anticipation of presenting the information orally or in a demonstration, since oral presentations or demonstrations may not be solicited. All proposals shall include at minimum:

Submittal Format – Material shall be submitted in a loose leaf binder format, not as bound documents or with coil spines (plastic or metal). Respondents shall not submit material in any binder that exceeds two inches (2"); provide proposal in multiple binders if required. **Submittals shall be limited to 1000 single-sided pages with text in no smaller than twelve (12) point font, Arial preferred. Marketing materials or data sheets may be submitted in a separate binder(s) and have no page limit.**

NOTE: Failure of the Respondent to clearly and specifically address each of the items listed below may result in the Proposal *not* being evaluated or considered for award.

All proposals shall include at a minimum:

Tab 1 – Respondent's Profile and Submittal Letter

A. A submittal letter signed by an authorized agent of the firm, as listed on the Florida Department of State, Division of Corporations' Sunbiz report available at www.sunbiz.org (Sunbiz), shall be required. If anyone other than the officers listed on the Sunbiz website will be signing this RFP, a memorandum of authority signed by an officer of the firm allocating authorization shall be required. If firm is not currently registered as a vendor in the State of Florida (Sunbiz), include documentation designation of contracting authority. The memorandum of authority shall be on the firm's letterhead and shall clearly state the name, title and contact information for the individual designated by the firm.

B. A brief profile of the firm, including: (customize to fit your project)

1. A brief history of the business;

2. Organizational structure of business;

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3. Designation of the legal entity by which the business operates (i.e., sole proprietorship, partnership, limited liability partnership, corporation, limited liability corporation, etc.) including documentation from the appropriate state's agency confirming firm's legal entity type. For non-Florida businesses, submit documentation from the state in which the business was formed and documentation from the State of Florida providing authorization to perform business in the state of Florida;

4. A Florida Department of State, Division of Corporations' Sunbiz report available at www.sunbiz.org;

5. Ownership interests;

6. Active business venues (counties, states, etc.);

7. Present status and projected direction of business;

8. The overall qualifications of the business to provide the services requested;

Tab 2 – Forms

1. **Proposal Form**

   Complete the Proposal Form provide in the RFP (see Section 5.0).

2. **W-9**

   Include a completed W-9 form. If the firm is not registered with Volusia County, on-line registration is available at www.volusia.org/purchasing under Vendor Self Service, which links to the registration site and the W-9 form can be accessed through this site as well.

3. **Addenda**

   Any addenda issued subsequent to the release of this solicitation must be signed and returned with the firm's proposal. Failure to return signed addenda may be cause for the proposal to be considered non-responsive.

4. **Insurance**

   Attach evidence of required insurance coverage or proof of insurability in the amounts indicated. If available, a properly completed ACORD Form is preferable. Final forms must contain the correct solicitation and/or project number, name the Volusia County contact person, and shall be in accordance with Exhibits C.1 – C.3 Insurance Requirements.

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5. **Business Tax Receipt (BTR)**

   To be responsive to this solicitation, each Respondent who is currently required to have a Business Tax Receipt (BTR) at the time of submittal shall provide a copy of their current BTR in their response to this solicitation.

   There are two exceptions to this requirement:

   1. If Respondent's business does not have a physical location in Volusia County, no submission is required, OR

   2. If Respondent's business type is exempt, submit a Proof of Exemption approved by the Volusia County Revenue Director (see Section 8.0).

   Reference: Chapter 114, Article I, Section 114-1 of the Volusia County Code of Ordinances:
   https://library.municode.com/fl/volusia_county/codes/code_of_ordinances?nodeId=PTIICOOR_CH114TA_ARTIINGE

6. **Conflict of Interest Form**

   All Respondents shall properly complete, have notarized, and include with their proposal the attached statement disclosing any potential conflict of interest that the Respondent may have due to ownership, other clients, contracts, or interests associated with this project. (see Section 10.0)

7. **Drug-Free Work Place Form (see Section 11.0)**

8. **Certification Regarding Debarment (Prime) Form (see Section 12.0)**

9. **Certification Regarding Debarment (Sub) Form (see Section 13.0)**

10. **Certification Regarding Prohibition Against Contracting with Scrutinized Companies (see Section 14.0)**

11. **Performance Bond - Project (see Section 15.0)**

12. **Perfomance Bond – Tower Construction (see Section 16.0)**

Tab 3 – References

All proposers, whether an OEM manufacturer or reseller proposing an OEM manufacturer's equipment, are required to submit five (5) references.

Four (4) references are required to demonstrate the use of the OEM vendor's P25 technology for a minimum of one (1) years' relevant operational service and have a combination of P25 Phase 1 and Phase 2 radios in daily operation. The four (4) networks referenced must be currently supporting a combination of 3,000 or more

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P25 Phase 1 and Phase 2 radios in daily operation and must have at least six tower sites.

The fifth reference will be a user who has either a P25 Phase 1 or Phase 2 network similar in size to Volusia County's Public Safety Network (13 tower sites, 10,000 radios) or greater, and has been in service operation over a year. The radios on this reference's network can either be all P25 Phase 1 or Phase 2.

Include company name, contact person, phone number and e-mail address, as staff will contact references as part of the evaluation. Respondents shall confirm that reference contact information is correct and inform references that the County of Volusia may be contacting them as part of the RFP evaluation. A conference call may be requested with the reference. Additional pages may be used to illustrate the scope of the referenced network. The County of Volusia shall not be listed as a reference. (Use Section 6.0)

Tab 4 – Pricing Sheets

Complete the Pricing Sheets in Exhibit B.

Tab 5 – P25 Compliant Radio System

Tab 5.1 Project Understanding

1. Respondent shall clearly describe their ability to deliver a state-of-the-art, secure solution.

2. Respondent shall clearly state their background in implementing comparable systems with other agencies.

3. Respondent shall clearly state the anticipated benefits to the County for using the Respondent's proposed solution.

4. The Respondent's proposed solution shall not require the use of the Respondent to customize any feature that can otherwise be configured such as menus, reports, databases, screens, etc.

5. Respondent shall clearly state how the proposed system provides maximum flexibility with minimal or no customization required by the Respondent.

6. The system shall provide all features within the current version of the software, requiring no coding or programming modifications and with all changes done through configuration of existing software.

7. The core solution shall meet the majority of the County's functionality requirements.

8. Respondent shall submit detailed documentation for any required modifications or customization.

9. Custom changes shall be developed, integrated, and stored in a manner that facilitates future releases (version upgrades) from the Respondent.

10. The Respondent shall incorporate into a gap analysis, and provide this gap analysis here, for each instance where its core solution does not meet the requirements outlined in this solicitation.

Tab 5.2 Conceptual Plan

The summaries in this section shall contain as little technical language as possible and shall be oriented to non-technical personnel.

1. Brief Narrative

   a. Included in this tab shall be a brief narrative summarizing the Respondent's solution.

   b. There shall be a clear identification of any third party providers / subcontractors with details of what role each party shall perform.

   c. Describe the support of third party products (if any) that have been customized and are not supported by the third party vendor, but bundled with the solution.

2. Conceptual Training Plan

   As detailed in Section 17 Training of Exhibit A – Technical Specifications.

Tab 5.3 Technology Evolution

Statements made in this section shall not be construed to be a commitment to deliver future functionality beyond that which is included in the other sections of this proposal.

Recent advances in technology are leading to a convergence of wireless technologies such as commercial carrier, LTE, Wi-Fi, Bluetooth, and others, with Land Mobile Radio systems. Due to technology evolution during the lifetime of the proposed P25 system, it is anticipated that a number of new features will evolve in LMR.

1. This section provides the Contractor with an opportunity to describe any planned features or functionality that may become available during the procurement, implementation, and operation of the proposed P25 system.

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2. The Contractor shall explain how they will be a partner to the County to evolve the P25 radio system into a broadband-based Public Safety Communications System.

3. If the Contractor is currently manufacturing and selling products in this category, please provide a description of the product, its availability, features, functionality and pricing for optional purchase consideration by the County. If such products are offered, the Contractor shall be specific regarding the requirements on the infrastructure and subscriber side hardware or software required to support the technology.

Tab 5.4 Requirements Matrices, Supplemental Forms

The Respondent shall complete the following exhibits and include these Exhibits in this submittal subsection:

1. Exhibit A.1 - Requirements Matrix;

2. Exhibit A.2 – Supplemental Forms.

The MS Excel spreadsheet response column should expand as required in the matrices. Please verify all responses are clearly visible in the provided MS Excel spreadsheet and PDF formats. Each workbook contains multiple worksheets on separate tabs. Respondent shall complete all worksheets in each exhibit.

NOTE: Although the Respondent shall "self-rate" the responses, all requirements may be validated during demonstrations prior to final ranking of the Respondents. If functionality cannot be validated, ranking of the Respondent shall be changed.

Tab 5.5 Resources and Qualifications of the Respondent's Personnel

1. The Respondent shall provide an organization chart showing the reporting structure and where the proposed project would be assigned within the organization.

2. The Respondent shall provide information on the proposed Project Manager's qualifications and experience that shall be assigned to this project.

3. The Respondent shall describe its proposed project team including personnel and their qualifications.

4. The Respondent shall identify the total number of Respondent's technical personnel required to customize/configure (if required) its product, test its system on-site at the County, provide training (knowledge transfer) to County staff; and implement the system.

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5. The Respondent shall provide proven certification and training on the delivered system for technical support. Updated documentation shall be provided during the Contract term to the County Project Manager.

Tab 5.6 Resources to be provided by the County

The Respondent shall list any resources or other items expected to be provided by the County. All County staffing requirements within the project shall be detailed, including the specific tasks to be performed and estimated amount of required time by staff type.

Tab 5.7 Additional Information

The Respondent shall include and reference all supporting information, including marketing materials, that Respondent believes relevant to understanding its solution.

Tab 5.8 Warranty and Maintenance Requirements

As detailed in Section 19 Warranty and Maintenance of Exhibit A – Technical Specifications.

Tab 6 - Agreements

1. The Respondent shall include all agreements that the Respondent proposes to be signed by the County. Agreements shall be specific to the solution proposed, not merely blank or generic forms.

2. The Respondent shall clearly indicate if these agreements or, specifically, what portions of the agreement, are subject to negotiation. These agreements and the flexibility of the Respondent shall be considered during the evaluation of the Proposal.

3. Software Escrow Agreement. For those Respondents proposing the use of a Software Escrow Agreement, the Respondent shall provide a copy of the Software Escrow Agreement or indicate that an agreement shall be provided.

4. Third Party Agreement: For those Respondents proposing the use of a Third Party Agreement, the Respondent shall provide a copy of the Third Party Agreement or indicate that an agreement shall be provided.

5. Note: All proposed agreements shall be included on the CD or USB drive in MS Word format, clearly marked as a separate file.

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Tab 7 - Definitions

The Respondent shall include definitions of all terms required to fully define all aspects of the proposed system. The Respondent shall identify any conflicting definitions in the RFP and the proposal and shall provide a proposed definition along with a detailed justification for the conflict. THE RESPONDENT SHALL NOT SUBMIT A DICTIONARY OF COMMONLY USED TERMS, ONLY THOSE DEFINITIONS THAT ARE UNIQUE TO THE PROPOSED SOFTWARE SOLUTION.

Tab 8 - Financial Statement

A Dun and Bradstreet report may be used by the County to evaluate Respondent's financial stability. All Respondents shall be prepared to supply a financial statement upon request, preferably a certified audit of the last available fiscal year.

Date: _____

5.0 PROPOSAL FORM

TO: County of Volusia, Florida
Office of Purchasing and Contracts Director
123 W. Indiana Avenue, 3rd Floor
DeLand, FL 32720-4608

The undersigned hereby declare(s) that [firm name] _____ has carefully examined the specifications to furnish:

P25 Compliant Radio System

for which proposals were advertised to be received **no later than 3:00 p.m., local time, Wednesday, January 15, 2020,** and further declare that [firm name] _____ will furnish the P25 compliant radio system according to specifications.

Please submit all documents in accordance with Section 4.0 Submittal Requirements.

The County reserves the right to negotiate with the award vendor(s) for additional items similar in nature not known at time of closing.

Sole Proprietor: ❑ YES ❑ NO **Total number employees: _____**

The following information is required in order to be granted a price redetermination.

F.O.B. Destination

Prompt payment discount, if applicable: _____ % _____ Days; Net 45 Days

Do you accept electronic funds transfer (EFT)? ❑ YES ❑ NO

Do you offer a discount for electronic funds transfer (EFT)? ❑ YES, ____ % ❑ NO

Have you supplied all the Submittal Requirements outlined below?

- ❑ Tab 1 – Submittal Letter including the Memorandum of Authority, if required
- ❑ Tab 1 – Respondent's Profile
- ❑ Tab 2 - Forms
  - ❑ Completed and Executed RFP proposal Form
  - ❑ W9
  - ❑ Any Addenda pertaining to this RFP
  - ❑ If you have a physical location in Volusia County, submit on of these:
  - ❑ Current **Business Tax Receipt**, ***OR*** ❑ **Proof of Exemption** Form

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- ❑ Proof of Insurance
- ❑ Conflict of Interest form
- ❑ Drug Free Workplace
- ❑ Certification Regarding Debarment (Prime)
- ❑ Certification Regarding Debarment (Sub)
- ❑ Certification Regarding Scrutinized Companies
- ❑ Performance Bond - Project
- ❑ Payment Bond - Project
- ❑ Performance Bond – Tower Construction
- ❑ Payment Bond – Tower Construction

❑ Tab 3 – References, in accordance with requirements of Tab 3
❑ Tab 4 – Pricing Sheets
❑ Tab 5 – P25 Complaint Radio System
- ❑ Tab 5.1 – Project Understanding
- ❑ Tab 5.2 – Conceptual Plan
- ❑ Tab 5.3 – Technology Evolution
- ❑ Tab 5.4 - Requirements Matrix, Supplemental Forms
- ❑ Tab 5.5 - Resources and Qualifications of the Respondent's Personnel
- ❑ Tab 5.6 - Resources to be provided by the County
- ❑ Tab 5.7 - Additional Information
- ❑ Tab 5.8 – Warranty and Maintenance Requirements

❑ Tab 6 – Agreements
❑ Tab 7 – Definitions
❑ Tab 8 – Financial Statement, upon request
❑ Did you include a CD or USB drive, as required in Section 3.8, Proposal Form?

The County of Volusia reserves the right to reject any or all proposals, to waive informalities, and to accept all or any part of any proposal as they may deem to be in the best interest of the County.

I hereby certify that I have read and understand the requirements of this Request for Proposal No. **19-P-153JRD** and, that I, as the Respondent, will comply with all requirements, and that I am duly authorized to execute this proposal/offer document and any Contract(s) and/or other transactions required by award of this RFP.

Further, as attested to by below signature, I will provide the required insurance, per §3.25, *Insurance*, upon notification of recommendation of award.

The vendor acknowledges that information provided in this proposal is true and correct:

✘ _____

Authorized Signature

Printed Name

Title Date

Company Name

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Full Address		
Telephone	Fax	E-mail Address
Dun & Bradstreet #		Federal I.D. #

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6.0 REFERENCES

Agency **#1**	
Address	
City, State, ZIP	
Contact Person	
E-mail	Phone:
Date(s) of Service	
Type of Service	
Comments:	
Agency **#2**	
Address	
City, State, ZIP	
Contact Person	
E-mail	Phone:
Date(s) of Service	
Type of Service	
Comments:	
Agency **#3**	
Address	
City, State, ZIP	
Contact Person	
E-mail	Phone:
Date(s) of Service	
Type of Service	
Comments:	

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Agency **#4**	
Address	
City, State, ZIP	
Contact Person	
E-mail	Phone:
Date(s) of Service	
Type of Service	
Comments:	
Agency **#5**	
Address	
City, State, ZIP	
Contact Person	
E-mail	Phone:
Date(s) of Service	
Type of Service	
Comments:	

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7.0 NOTIFICATION REGARDING PUBLIC ENTITY CRIME & DISCRIMINATORY VENDOR LIST REQUIREMENTS & DISQUALIFICATION PROVISION

A. Pursuant to Florida Statutory requirements, potential Respondents are notified:

287.133(2)(a) A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a Bid, proposal, or reply on a Contract to provide any goods or services to a public entity; may not submit a Bid, proposal, or reply on a Contract with a public entity for the construction or repair of a public building or public work; may not submit Bids, proposals, or replies on leases of real property to a public entity; may not be awarded or perform work as a Contractor, supplier, subcontractor, or consultant under a Contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in s. 287.017 for CATEGORY TWO for a period of 36 months following the date of being placed on the convicted vendor list.

287.133(2)(b) A public entity may not accept any Bid, proposal, or reply from, award any Contract to, or transact any business in excess of the threshold amount provided in s. 287.017 for CATEGORY TWO with any person or affiliate on the convicted vendor list for a period of 36 months following the date that person or affiliate was placed on the convicted vendor list unless that person or affiliate has been removed from the list pursuant to paragraph (3)(f). A public entity that was transacting business with a person at the time of the commission of a public entity crime resulting in that person being placed on the convicted vendor list may not accept any Bid, proposal, or reply from, award any Contract to, or transact any business with any other person who is under the same, or substantially the same, control as the person whose name appears on the convicted vendor list so long as that person's name appears on the convicted vendor list.

287.134(2)(a) An entity or affiliate who has been placed on the discriminatory vendor list may not submit a Bid, proposal, or reply on a Contract to provide any goods or services to a public entity; may not submit a Bid, proposal, or reply on a Contract with a public entity for the construction or repair of a public building or public work; may not submit Bids, proposals, or replies on leases of real property to a public entity; may not be awarded or perform work as a Contractor, supplier, subcontractor, or consultant under a Contract with any public entity; and may not transact business with any public entity.

287.134(2)(b) A public entity may not accept any Bid, proposals, or replies from, award any Contract to, or transact any business with any entity or affiliate on the discriminatory vendor list for a period of 36 months following the date that entity or affiliate was placed on the discriminatory vendor list unless that entity or affiliate has been removed from the list pursuant to paragraph (3)(f). A public entity that was transacting business with an entity at the time of the discrimination resulting in that entity being placed on the discriminatory vendor list may not accept any Bid, proposal, or reply from, award any Contract to, or transact any business with any other entity who is under the same, or substantially the same, control as the entity whose name appears on the discriminatory vendor list so long as that entity's name appears on the discriminatory vendor list.

B. By submitting a proposal, the Respondent represents and warrants that the submission of its proposal does not violate Section 287.133, Florida Statutes (2005), nor Section 287.134, Florida Statutes (2005).

C. In addition to the foregoing, the Respondent represents and warrants that Respondent, Respondent's subcontractors and Respondent's implementer, if any, is not under investigation for violation of such statutes.

D. Respondent should read carefully all provisions of 287.133 and 287.134, Florida Statutes (2005).

8.0 PROOF OF EXEMPTION

BUSINESS SERVICES
REVENUE DIVISION
123 W. INDIANA AVE. • ROOM 103 • DELAND, FL 32720-4602
PHONE: 386-736-5938 • FAX: 386-822-5729
www.volusia.org/revenue

I certify that the business known as (*business name*) _____,
providing _____ services, which is located at (*street address*) _____
_____, (*city*) _____, falls under the business tax exemption described in:

- ❑ Florida Statute 205. 063
- ❑ Florida Statute 205. 064
- ❑ Florida Statute 205. 065
- ❑ Florida Statute 205. 162
- ❑ Florida Statute 205. 171
- ❑ Florida Statute 205. 191
- ❑ Florida Statute 205. 192

https://library.municode.com/fl/volusia_county/codes/code_of_ordinances?nodeId=PTIICOOR_CH114TA_ARTIINGE

OR is the type of business indicated below:

- ❑ Child Care – Residential
- ❑ Commercial Rentals
- ❑ Door to Door/Peddler Sales
- ❑ Insurance Adjuster, Agent, or Company
- ❑ Pharmacist/Pharmacy *(Prescription Drugs Only)*
- ❑ Radio/Television Station
- ❑ Religious Institution
- ❑ Residential Rentals over 6months
- ❑ Sale of Alcoholic Products only

_____ _____
(Authorized Signature) *(Printed Name)*

STATE OF _____

COUNTY OF _____

Sworn to and subscribed before me this _____ day of _____, 20_____, by _____, who is/are personally known to me ***or*** *who has/have produced _____ as identification.*

_____
NOTARY PUBLIC – STATE OF _____
Type or print name:
_____
Commission No.: _____
Commission Expires: _____

(Seal)

A business that falls under one of the exempt classifications listed above is not required to have a Volusia County Business Tax Receipt.

_____
Revenue Director/Designee

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9.0 HOLD HARMLESS AGREEMENT

I, _____, (*print owner's name*), am the owner of _____ (*print company name*), an incorporated/unincorporated business operating in the State of Florida. As such, I am bound by all laws of the state of Florida, including but not limited to those regarding the workers' compensation law.

I hereby affirm that I or [the above-named business] employs fewer than four employees, all of whom are listed below, including myself, and therefore, the business is exempt from the statutory requirement for workers' compensation insurance for its employees. I certify that I will provide the County of Volusia with the name of each new employee together with all required waivers and releases for each prior to any employee being allowed to work to provide services under the Contract set forth below. If any such employee is allowed to work without a signed waiver and release, such action will be a material breach of this Agreement. All signed waivers and releases shall be furnished before the commencement of any work by an employee or the undersigned to the County Project Manager or designated county representative.

On _____, 20____, the County of Volusia and I or (*the above-named business)* entered into a Contract for _____ (*please insert name of Contract*) (hereinafter "Agreement") which is incorporated by reference herein.

On behalf of myself, my business, and the employees listed below, I and they hereby agree to waive and release any and all workers' compensation claims or liens under Chapter 440, Florida Statutes, against the County of Volusia and its agents, officials and employees, arising from any work or services provided under the Agreement whether or not it shall be alleged or determined that the act was caused by intention, or through negligence or omission of the County of Volusia or its agents, officials and employees or subcontractors.

In the event that a workers' compensation claim or lien is made against the County of Volusia and/or its agents, officials or employees by myself or my employees or agents as a result of any work or services performed under the Agreement, I agree to indemnify, keep and hold harmless the County of Volusia, Florida, its agents, officials and employees, against all injuries, deaths, losses, damages, claims, liabilities, judgments, costs and expenses, direct, indirect or consequential (including, but not limited to, fees and charges of attorneys and other professionals) arising out of the Agreement with the County of Volusia, whether or not it shall be alleged or determined that the act was caused by intention or through negligence or omission of the County of Volusia or its employees, agents, or subcontractors. I or the above-named business shall pay all charges of attorneys and all costs and other expenses incurred in connection with the indemnity provided herein, and if any judgment shall be rendered against the County of Volusia in any action indemnified hereby, I or the above-named business shall, at my or its own expense, satisfy and discharge the same. The foregoing is not intended nor should it be construed as, a waiver of sovereign immunity of the COUNTY OF VOLUSIA under Section 768.28, Florida Statutes.

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Owner: _____ *(print name)* _____

(signature)

Employee 1: _____ *(print name)* _____

(signature)

Employee 2: _____ *(print name)* _____

(signature)

Employee 3: _____ *(print name)* _____

(signature)

STATE OF _____

COUNTY OF _____

Sworn to and subscribed before me this ____ day of _____, 20____, by _____, who is/are personally known to me ***or*** *who has/have produced _____ as identification.*

_____

_

NOTARY PUBLIC – STATE OF _____

Type or print name:

_____

Commission No.: _____

(Seal) *Commission Expires:* _____

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10.0 CONFLICT OF INTEREST FORM

I HEREBY CERTIFY that:

1. I, *(printed name)* _____, am the *(title)* _____ and the duly authorized representative of the firm of *(Firm Name)* _____ whose address is _____, and that I possess the legal authority to make this affidavit on behalf of myself and the firm for which I am acting; and,

2. Except as listed below, no employee, officer, or agent of the firm have any conflicts of interest, real or apparent, due to ownership, other clients, Contracts, or interests associated with this project; and,

3. This proposal is made without prior understanding, agreement, or connection with any corporation, firm, or person submitting a proposal for the same services, and is in all respects fair and without collusion or fraud.

EXCEPTIONS to items above (List): _____

_____

_

Signature: _____

Printed Name: _____

Firm Name: _____

Date: _____

STATE OF _____

COUNTY OF _____

Sworn to and subscribed before me this ____ day of _____, 20____, by _____, who is/are personally known to me ***or*** *who has/have produced _____ as identification.*

_____

NOTARY PUBLIC – STATE OF _____

Type or print name:

_____

Commission No.: _____

(Seal) *Commission Expires:* _____

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11.0 DRUG-FREE WORK PLACE

The undersigned firm, in accordance with Florida statute 287.087, hereby certifies that _____

_____does:
(Name of Firm)

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.

3. Give each employee engaged in providing the commodities or contractual services that are proposed a copy of the statement specified in subsection (1).

4. In the statement specified in subsection (1), notify the employees that, as a condition of working on the commodities or contractual services that are under proposal, the employee will propose by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contender to, any violation of Chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.

5. Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.

6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

As the person authorized to sign the statement, I certify that this firm complies fully with the above requirements.

_____ _____
Name and Title Date

_____
Signature

_____
Firm

_____
Street address

_____
City, State, Zip

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12.0 CERTIFICATION REGARDING DEBARMENT (PRIME)

Certification Regarding Debarment, Suspension,
And Other Responsibility Matters
Primary Covered Transactions

TO BE COMPLETED BY PRIME CONTRACTOR

A. The prospective primary participant (contractor) certifies to the best of its knowledge and belief, that it and its principals (subcontractors and suppliers):

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

2. Have not within a three (3) year period preceding this bid proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property.

3. Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (1) (b) of this certification; and

4. Have not within a three-year period preceding this bid proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

B. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this bid proposal.

_____ _____
Name and Title Date

_____
Signature

_____
Firm

_____
Street address

_____
City, State, Zip

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13.0 CERTIFICATION REGARDING DEBARMENT (SUB)

Certification Regarding
Debarment, Suspension, Ineligibility
And Voluntary Exclusion

TO BE COMPLETED BY ALL SUB-CONTRACTORS

A. The prospective participant (sub-contractor) certifies to the best of its knowledge and belief, that it and its principals (subcontractors and suppliers):

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

2. Have not within a three (3) year period preceding this bid proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property.

3. Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (1) (b) of this certification; and

4. Have not within a three-year period preceding this bid proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

B. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this bid proposal.

_____ _____
Name and Title Date

_____
Signature

_____
Firm

_____
Street address

_____
City, State, Zip

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14.0 CERTIFICATION REGARDING PROHIBITION AGAINST CONTRACTING WITH SCRUTINIZED COMPANIES

I hereby certify that neither the undersigned entity, nor any of its wholly owned subsidiaries, majority-owned subsidiaries, parent companies, or affiliates of such entities or business associations, that exists for the purpose of making profit have been placed on the Scrutinized Companies that Boycott Israel List created pursuant to s. 215.4725 of the Florida Statutes, or are engaged in a boycott of Israel.

In addition, if this solicitation is for a contract for goods or services of one million dollars or more, I hereby certify that neither the undersigned entity, nor any of its wholly owned subsidiaries, majority- owned subsidiaries, parent companies, or affiliates of such entities or business associations, that exists for the purpose of making profit are on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, created pursuant to s.
215.473 of the Florida Statutes, or are engaged in business operations in Cuba or Syria as defined in said statute.

I understand and agree that the County may immediately terminate any contract resulting from this solicitation upon written notice if the undersigned entity (or any of those related entities of respondent as defined above by Florida law) are found to have submitted a false certification or any of the following occur with respect to the company or a related entity: (i) it has been placed on the Scrutinized Companies that Boycott Israel List, or is engaged in a boycott of Israel, or (ii) for any contract for goods or services of one million dollars or more, it has been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or it is found to have been engaged in business operations in Cuba or Syria.

Name of Respondent:_____

By:_____
(Authorized Signature)

Title:_____

Date:_____

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15.0 PERFORMANCE BOND - Project

CONTRACTOR	SURETY	OWNER
[*name*]	_____	County of Volusia
[*principal business address*]	_____	123 W. Indiana Avenue
[*phone number*]	_____	DeLand, FL 32720
		386-736-5920

PROJECT NAME: P25 Compliant Radio system

COUNTY CONTRACT NO.: RFP 19-P-153JRD

PROJECT DESCRIPTION: P25 Compliant Radio System

("Project")

BY THIS BOND, We _____, as Principal (hereafter referred to as "Contractor", and _____ (hereafter referred to as "Surety"), under the assigned Bond Number_____, are bound to County of Volusia as Obligee (hereafter referred to as "County"), in the amount of_____Dollars ($ _____) for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally.

THE CONDITION OF THIS BOND is that if Contractor:

1. Performs the written contract dated _____between Contractor and County, Bid/Contract No. [RFP 19-P-153JRD] (hereafter "Contract") including all related documents and exhibits (hereafter collectively referred to as the "Contract Documents") which are by reference incorporated herein and made a part hereof, including any and all provisions for liquidated damages, and other damages identified, and for the purposes of this Bond, in the time and manner prescribed in the Contract; and

2. Pays County all losses, liquidated damages, expenses, costs and attorneys' fees (including those arising from appellate proceedings) that County sustains as a result of default by Contractor under the Contract; and,

3. Performs the guaranties of all work, services, and materials furnished under the Contract for the time specified in the Contract; then THIS BOND IS VOID, OTHERWISE IT REMAINS IN FULL FORCE AND EFFECT.

Whenever Contractor shall be, and is declared by County to be, in default under the Contract Documents, County having performed County's obligations thereunder, Surety, at its expense, agrees to promptly remedy the default, upon written demand to Surety from the County of said default, by:

1. Repaying to and reimbursing County, promptly upon demand, all sums of money, including reasonable attorneys' fees, professional services and any damages, direct or indirect, or consequential, reasonably incurred, paid out or expended by the County; or
2. Completing the required performance in accordance with the terms and conditions of the Contract with a qualified contractor and repaying to and reimbursing County, promptly upon demand, all sums of

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money, including reasonable attorneys' fees, professional services and any damages, direct or indirect, or consequential, reasonably incurred, paid out or expended by the County; or

3. Obtaining a solicitation or solicitations for completing the Project in accordance with the terms and conditions of the Contract Documents and County's ordinances and Purchasing and Contracts Policies and Procedures, and arranging for a contract between a subsequent and qualified contractor and County on the same terms and conditions as the Contract Documents unless otherwise agreed by County, under the contract or contracts for the Project completion arranged under this paragraph with sufficient funds to pay the cost of Project completion or performance, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the County of Volusia named herein.

Any changes (including extension of time or alteration or addition of terms to the Contract) and compliance or noncompliance with any formalities connected with the Contract or the changes does not affect Surety's obligation under this bond, and Surety does hereby waive notice of any such change to the terms of the Contract or to the work or service in the scope of services or specifications in the Contract.

Contractor and Surety expressly acknowledge that any and all provisions relating to consequential, delay, and liquidated damages contained in the Contract are expressly covered by and made a part of this Performance Bond. Contractor and Surety acknowledge that any such provisions lie within their obligations and within the policy coverage and limitations of this instrument.

IN TESTIMONY WHEREOF, witness the hands and seals of the parties hereto this _____ day of _____, 2020.

(If sole Ownership or Partnership, two (2) Witnesses required).
(If Corporation, Secretary only will witness/attest and affix seal).

[TYPE LEGAL NAME OF CONTRACTOR]

By: _____
Title: _____
Print Name:
_____

WITNESS:

_____
Corporate Secretary or Witness
Print Name: _____
(affix corporate seal)

WITNESS:

_____
Print Name: _____

[Name of Corporate Surety]

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B_____

ATTORNEY-IN-FACT

Print Name:

_____

(affix corporate seal)

(Power of Attorney must be attached)
A.M. Best
*No.:*_____
NAIC
*No.:*_____

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16.0 PERFORMANCE BOND – Tower Construction

CONTRACTOR	SURETY	OWNER
[*name*]	_____	County of Volusia
[*principal business address*]	_____	123 W. Indiana Avenue
[*phone number*]	_____	DeLand, FL 32720
		386-736-5920

PROJECT NAME: P25 Compliant Radio system

COUNTY CONTRACT NO.: RFP 19-P-153JRD

PROJECT DESCRIPTION: P25 Compliant Radio System – Farmton Tower Construction ("Project")

BY THIS BOND, _____, as Principal (hereafter referred to as "Contractor", and _____ (hereafter referred to as "Surety"), under the assigned Bond Number_, are bound to County of Volusia as Obligee (hereafter referred to as "County"), in the amount of_____Dollars ($ ___) for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally.

THE CONDITION OF THIS BOND is that if Contractor:

4. Performs the written contract dated _____between Contractor and County, Bid/Contract No. [RFP 19-P-153JRD] (hereafter "Contract") including all related documents and exhibits (hereafter collectively referred to as the "Contract Documents") which are by reference incorporated herein and made a part hereof, including any and all provisions for liquidated damages, and other damages identified, and for the purposes of this Bond, in the time and manner prescribed in the Contract; and

5. Pays County all losses, liquidated damages, expenses, costs and attorneys' fees (including those arising from appellate proceedings) that County sustains as a result of default by Contractor under the Contract; and,

6. Performs the guaranties of all work, services, and materials furnished under the Contract for the time specified in the Contract; then THIS BOND IS VOID, OTHERWISE IT REMAINS IN FULL FORCE AND EFFECT.

Whenever Contractor shall be, and is declared by County to be, in default under the Contract Documents, County having performed County's obligations thereunder, Surety, at its expense, agrees to promptly remedy the default, upon written demand to Surety from the County of said default, by:

4. Repaying to and reimbursing County, promptly upon demand, all sums of money, including reasonable attorneys' fees, professional services and any damages, direct or indirect, or consequential, reasonably incurred, paid out or expended by the County; or

5. Completing the required performance in accordance with the terms and conditions of the Contract with a qualified contractor and repaying to and reimbursing County, promptly upon demand, all sums of

Attachment: 01._19-P-153JRD,_P25_Compliant_Radio_System (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking

money, including reasonable attorneys' fees, professional services and any damages, direct or indirect, or consequential, reasonably incurred, paid out or expended by the County; or

6. Obtaining a solicitation or solicitations for completing the Project in accordance with the terms and conditions of the Contract Documents and County's ordinances and Purchasing and Contracts Policies and Procedures, and arranging for a contract between a subsequent and qualified contractor and County on the same terms and conditions as the Contract Documents unless otherwise agreed by County, under the contract or contracts for the Project completion arranged under this paragraph with sufficient funds to pay the cost of Project completion or performance, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the County of Volusia named herein.

Any changes (including extension of time or alteration or addition of terms to the Contract) and compliance or noncompliance with any formalities connected with the Contract or the changes does not affect Surety's obligation under this bond, and Surety does hereby waive notice of any such change to the terms of the Contract or to the work or service in the scope of services or specifications in the Contract.

Contractor and Surety expressly acknowledge that any and all provisions relating to consequential, delay, and liquidated damages contained in the Contract are expressly covered by and made a part of this Performance Bond. Contractor and Surety acknowledge that any such provisions lie within their obligations and within the policy coverage and limitations of this instrument.

IN TESTIMONY WHEREOF, witness the hands and seals of the parties hereto this _____ day of _____, 2018.

(If sole Ownership or Partnership, two (2) Witnesses required).
(If Corporation, Secretary only will witness/attest and affix seal).

[TYPE LEGAL NAME OF CONTRACTOR]

By: _____
Title: _____
Print Name:
_____

WITNESS:

_____
Corporate Secretary or Witness
Print Name: _____
(affix corporate seal)

WITNESS:

_____
Print Name: _____

[Name of Corporate Surety]

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B_____

ATTORNEY-IN-FACT

Print Name:

_____

(affix corporate seal)

(Power of Attorney must be attached)
A.M. Best
*No.:*_____
NAIC
*No.:*_____

Attachment: 01._19-P-153JRD,_P25_Compliant_Radio_System (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking

EXHIBIT A
TECHNICAL SPECIFICATIONS

VOLUSIA COUNTY, FLORIDA
P25 COMPLIANT RADIO SYSTEM
REQUEST FOR PROPOSALS
RFP NO. 19-P-153JRD
v. 9/27/2019

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1. INTRODUCTION AND OVERVIEW

1.1 Project Introduction

A. Volusia County is seeking a technically advanced, value-conscious partner to modernize its public safety land mobile radio system and to help integrate current and future broadband technologies into its public safety communications system.

B. First Responders are encountering a diverse set of challenges that are accelerating, fast moving, and compressing the need for the capabilities of a modern wireless broadband network. Specialized public safety-based applications like data intensive criminal justice applications, transmission of video and text location technology, messages for emergency and management purposes, and drone technology are a few of the drivers that are creating the need for much more than the capabilities found in the traditional land mobile radio network.

C. The first step toward this future communication system is detailed and requested in this RFP. Volusia County intends to modernize the current thirteen (13) site Harris radio system to a Project 25 (P25) trunked simulcast radio system that dynamically supports P25 Phase 1 and Phase 2 radio communications.

D. The County plans to replace its legacy microwave system with a modern MPLS-based microwave system.

E. The County intends to expand the radio system to include two new radio towers. One tower will be a partnership with Flagler County to be located at 1250 Old Dixie Highway, Bunnell, 32174 and the second tower, the construction of which is included as part of the scope of this RFP, will be located at 3757 Maytown Road, Oak Hill, 32759 in the southern part of the County. These towers will improve coverage in the northeast and southern areas of the County.

F. The County recognizes that P25 is not a broadband technology that provides high-speed communication or capacity to integrate data, video, voice, and the public safety applications being envisioned today, on a single network. The capabilities and features of smartphones built into modern cellular networks are only marginally included in P25 vendor offerings. P25 is an upgrade to the County's current public safety wireless communication system and is a step to avoid the obsolescence of its land mobile radio system and to enhance the reliability of its communication system.

G. The Federal government has set a direction to provide public safety agencies with a modern mission critical broadband-based network by allocating frequency and funds toward the use of AT&T's nationwide "FirstNet" network. Many of the standards necessary for this to technically happen are still in development. Insights regarding the capacity levels, network hardening, coverage, and project timelines are yet to be disclosed. The use of FirstNet as a principal emergency dispatch and First Responder network at the local government level with its many agencies may be realistic in the

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future as FirstNet matures, but it still appears several years off for the Volusia County area. It is critical that the County's public safety land mobile radio be upgraded to a modern P25 system now to ensure the continued reliability of public safety communication.

H. Volusia County is looking for a partner that has broad and diverse experience developing multiple communications technologies, such a satellite, terrestrial IP-based networks, wireless broadband/LTE networks, mobile networks, specialized public safety applications, and large scale public safety government networks. A vendor who can integrate its P25 radio network with multiple LTE-based carriers will improve the competitive cellular carrier environment for public safety. The technology cross-pollination that results from this kind of experience will provide First Responders with better public safety communication products that have value-conscious, value-added features now and in the future.

1.2 Project Overview

A. The County desires to upgrade their current 800 MHz proprietary communication system with a new state-of-the-art, Association of Public Safety Communications Officials (APCO) Project 25 (P25) communication system that dynamically supports both P25 Phase 1 and Phase 2.

B. The County desires to maintain a high level of system reliability through the implementation of geo-redundant core and control point sites.

C. The County desires to implement a ring topology for the new IP-based microwave backhaul network.

D. The County desires to implement a P25 Phase 2 technology system to accommodate the increasing demand for radio traffic capacity, and the anticipated FCC mandates for increased radio spectrum efficiency.

E. The County desires to improve radio coverage outdoors and within buildings, and has identified four (4) area polygons within the County where additional signal margins are required to overcome specific building losses.

F. The County must maintain the operation of their analog paging and fire station alerting (FSA) system when they upgrade to P25.

G. The County desires to maintain interoperability with agencies that use Florida Interoperability Network (FIN), Mutual Aid channels, and VHF frequencies.

H. The County desires to improve interoperability with agencies from surrounding counties such as Flagler, Seminole, Brevard, and Lake County through the implementation of a P25 open standard communication system architecture.

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I. The County desires to expand the availability of communication system options such as encryption, location services, over-the-air programming, and over-the-air rekeying of encryption keys.

1.3 General Scope of Work

A. The Contractor's proposed solution shall include the design, engineering, equipment and installation, software, licenses, implementation services, operator and technical training, and continued maintenance services for a state-of-the-art P25 public safety trunked radio system.

B. The P25 system shall provide all of the components of an APCO Project 25 standards-based digital communications network to meet the current and the foreseeable future needs of the regional public safety community.

C. The Contractor shall assume complete responsibility for the system design, engineering, hardware, software, functionality, radio coverage, licensing, installation, optimization, testing, training, cutover, and maintenance of the P25 compliant, digital trunked communications system, based upon the performance specifications and features contained in this document and in the P25 standards.

D. The Contractor shall complete and pass all acceptance tests of system components, including hardware, software, radio coverage, reliability, and the required functionality per the requirements of this RFP and the P25 standards.

E. The Contractor shall propose a complete and fully operational system that meets or exceeds the requirements herein.

F. If the Contractor's system, as installed, does not meet the contractual technical and functional requirements, all additions or modifications required in meeting those technical and functional requirements to satisfy the communication needs of the County shall be at the sole expense of the Contractor.

1.4 Definitions

A. Unless stated otherwise in the document, the following definitions shall control the meanings of certain words and phrases as used within this document.

a. **60-Day Performance Period** means that the system infrastructure shall perform as specified for sixty (60) consecutive days without a Major Failure prior to the County's consideration of Final System Acceptance.

b. **AC** means alternating current.

c. **APCO** means the Association of Public-Safety Communications Officials.

d. **Backhaul** means a network that provides network communications between RF transmission sites, communications centers where consoles are located, and the master core network control location.

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e. **Backup Dispatch Center** is located at 59 Keyton Drive, Daytona.

f. **BER** means bit error rate.

g. **CAI** means Common Air Interface for a P25 radio network.

h. **Contract** means a binding agreement between two or more persons or parties for the supply of goods and services at a fixed price.

i. **Contractor** means the offeror/proposer/respondent and any/all subcontractor(s) collectively.

j. **Contractor's Project Manager** means the person designated by the Contractor to represent the Contractor during the length of the project.

k. **Conventional Channel** means a non-trunked radio channel.

l. **County** means Volusia County, Florida.

m. **County IT** means Volusia County Information Technology staff.

n. **County's Project Manager** means an employee designated by the County to represent the County during the project and approve all purchase orders.

o. **Coverage Acceptance Test** means the automated and subjective voice testing of the radio system coverage throughout the Service Area.

p. **Coverage Acceptance Test Plan** is a listing of the criteria and methodology to be used to determine that the radio system coverage meets or exceeds the contractual requirements.

q. **CPC** means Channel Performance Criterion which is the specified design performance level in a faded channel per TSB-88, latest edition.

r. **CSSI** means Console Sub-system Interface for a P25 radio network.

s. **DAQ** is an acronym for Delivered Audio Quality.

t. **DC** means direct current.

u. **Detailed Design Review** will be performed by the contractor and will occur after contractor selection and prior to contract execution.

v. **Division 27** is a document that shall govern installation and cabling requirements in County IT environments including the EOSCC IT equipment room and the Backup Dispatch Center.

w. **EOSCC** is Sheriff's Office at the Emergency Operation and Sheriff's Communications Center (EOSCC) located in Daytona Beach

x. **Factory Acceptance Test** is a comprehensive testing of the fixed infrastructure system and equipment at the Contractor's factory location prior to shipment of the system to the field for installation.

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y. **Factory Staging and Acceptance Test** means that the communication system will be assembled to the fullest extent possible at the Contractor's factory location for the purpose of testing the system as a whole, and for the purpose of demonstrating its functionality to the County prior to shipment to the field.

z. **FCC** means the Federal Communications Commission.

aa. **FDMA** means frequency division multiple access.

bb. **Final System Acceptance** means that the Contractor has implemented the entire system, successfully completed all components of the System Acceptance Test Plan including the 60-Day Performance Period, and the County's Project Manager has provided written notice of Final System Acceptance to the Contractor's Project Manager.

cc. **Fixed Network Equipment (FNE)** means all hardware and software used to transmit and receive radio signals, including but not necessarily limited to, the system's 700/800 MHz transceivers, comparator/voter, system control systems, combiners, multiplexers, antennas, microwave transceivers and dishes, network dispatch consoles, etc.

dd. **FSI** means Fixed Station Interface that specifies a set of mandatory messages supporting digital voice, data, encryption and telephone interconnect necessary for communication between a Fixed Station and P25 RF Subsystem.

ee. **Functional Acceptance Test Plan** means a test procedure and check list specific for their system that exercises and demonstrates each and all of the required and proposed features, functions and capabilities including those of the user equipment and dispatch consoles.

ff. **In-building coverage** means the amount of signal margin in decibels (dB) provided in a radio system design for the purpose of overcoming signal attenuation due to the building structure in order to provide the minimum received signal level necessary to provide acceptable portable radio communications inside a building.

gg. **Intrinsically Safe** is an equipment design protection method for Division 1 which encompasses hazards that may be present under normal operating conditions or frequently present during maintenance and repair work.

hh. **ISSI** means Inter RF Sub-system Interface for a P25 radio network.

ii. **Major System Failure** means any of the following failure modes:

  i. System in non-trunked fallback mode or failsoft

  ii. System in "site trunking"

  iii. Groups of mobiles or portables receiving a denial or busy tone

  iv. The loss of more than two (2) dispatch console operator positions

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v. The loss of voice communications

vi. The loss of data communications, if applicable

vii. Failure of the trunked system switch/controller

viii. The loss of two (2) or more trunked repeater channel resources

ix. A simulcast failure affecting one (1) or more sites

x. Loss or failure of the system configuration database

xi. Loss or failure of the user database

xii. Failures that prevent acceptance criteria from being achieved

xiii. Any component infected with a virus, malware or any security breach

jj. **Minor System Failure** means any of the following failure modes.

i. Failure of any equipment which does not cause the interruption of trunking operation or dispatch console functionality, provided that redundant equipment automatically switches into operation in accordance with the RFP

ii. Momentary (10 seconds) system outages during switching to redundant control equipment

iii. The failure of one (1) repeater channel, provided that such failures are corrected within the maintenance response time required by the RFP

iv. Failure of a single dispatch console position that is not attributable to other system failures

v. Failure of a site frequency standard provided that redundant equipment automatically switches into operation in accordance with the RFP

vi. Failure of a single tower-top amplifier or multicoupler

kk. **MHSB** means Monitored Hot Standby.

ll. **MPLS** means MultiProtocol Label Switching.

mm. **Network Site** means a location for the installation of the fixed network equipment.

nn. **NPSPAC** means the National Public Safety Planning and Advisory Committee.

oo. **PIM** means passive intermodulation and is a form of intermodulation distortion that occurs in components normally thought of as linear, such as cables, connectors, and antennas.

pp. **Prime,** when referenced to a backup power generator, means the output available with varying load for an unlimited time; average power output is 70% of the prime power rating; typical peak demand of 100% of prime-rated eKW with 10% of

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overload capability for emergency use for a maximum of 1 hour in 12; overload operation cannot exceed 25 hours per year.

qq. **Project** means the collaborative effort of the Contractor and the County to complete the planning, design, implementation, testing and acceptance of the system.

rr. **Project 25 or P25** means a standard for digital radio communications, as published in the TIA-102 series, for use by federal, state/province, and local public safety agencies in North America to enable them to communicate with other agencies and mutual aid response teams in an emergency.

ss. **Repeater** means an electronic device designed to instantly retransmit the transmission of a subscriber at a higher power.

tt. **RF** means Radio Frequency.

uu. **RSL** means Received Signal Level.

vv. **Service Area** is a specific user's geographic bounded area of concern.

ww. **Service Area Reliability (SAR)** is the probability of achieving the desired CPC over the defined Service Area.

xx. **Sheriff's Office IT** mean Sheriff's Office Information Technology staff

yy. **Standby**, when referenced to a backup power generator, means the output available with varying load for the duration of the interruption of the normal source power; average power output is 70% of the standby power rating; typical operation is 200 hours per year (Emergency Standby) with a maximum expected usage of 500 hours per year (Standby).

zz. **System** means all electronics, hardware, and software components routinely employed to operate the 700/800 MHz digital trunked network including, but not limited to, fixed network equipment, antenna, transmission lines, electronic control consoles, microwave system, towers, tower grounding systems, associated subsystems, etc., resulting in a fully operational, licensable, highly reliable 700/800 MHz digital trunked public safety radio communications capability meeting the requirements of and intended to be part of this procurement.

aaa. **Talk Group** means a virtual talk path in a trunked system that is analogous to a radio channel in a conventional system.

bbb. **Talk In** means from the 'mobile equipment' inbound to the fixed-end receiver system equipment, also referred to as a reverse-link or up-link.

ccc. **Talk Out** means from the fixed-end system equipment transmitters outbound to the 'mobile' units, also referred to as a forward-link or down-link.

ddd. **TDM**A means time division multiple access.

eee. **TDR** means time-domain reflectometer.

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fff. **Turnkey Solution** means that if the Contractor's system, as engineered and installed, does not meet the contractual technical and functional requirements, all additions or modifications required in meeting those technical and functional requirements to satisfy the communication requirements of the County as specified in this RFP and resulting Contract, shall be provided and performed at the sole expense of the Contractor.

ggg. **Terminal Equipment** is synonymous with User Equipment and refers to non-infrastructure equipment such as mobile and portable radios, control stations and remotes, and pagers.

hhh. **Test Tile** is the location where the random subsamples for CPC are taken.

iii. **User Equipment** refers to non-infrastructure equipment such as mobile and portable radios, control stations and remotes, and pagers.

jjj. **VAC** means volts alternating current.

kkk. **VDC** means volts direct current.

lll. **700 MHz** means the radio spectrum between 763 and 805 Megahertz as currently authorized by the FCC.

mmm. **800 MHz** means the radio spectrum between 806 and 862 Megahertz as currently authorized by the FCC.

1.5 Standards of Work

A. The applicable sections or portions of the standards, regulations, and codes of the entities listed below shall apply to the Contractor for the equipment and site preparation and for the installation, operation, maintenance, and service of the system by the Contractor.

a. APCO Project 25 System and Standards Definition and Functional Requirements as defined in TIA-102 Standards documents, latest revisions.

b. FCC Rules and Regulations, Code of Federal Regulations, Title 47, Chapter I, including:

i. Part 17 - Construction, Marking and Lighting of Antenna Structures

ii. Part 90 - Private Land Mobile Radio Services

iii. Part 101 - Fixed Microwave Services

c. Division 27 - Shall govern installation and cabling requirements in County IT environments including the EOSCC and the Backup Dispatch Center

d. FAA Regulations

i. Vol. XI - Objects affecting Navigable Airspace Part 77

ii. Advisory Circular 70/7460-1L

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e. Electronic Industries Association (EIA) Standards:

   i. EIA-152 Minimum Standards for Land Mobile Communications, FM, or PM Transmitters

   ii. EIA-204 Minimum Standards for Land Mobile Communication FM or PM Receivers (25-927 MHz)

   iii. EIA-210 Terminating and Signaling Equipment for Microwave Communication Systems

   iv. EIA-220 Minimum Standards for Land Mobile Communications Continuous Tone Controlled Squelch Systems (CTCSS)

   v. EIA-232 Interface between data terminal equipment and data circuit-terminating equipment employing serial binary data interchange

   vi. EIA-310 Racks, Panels, and Associated Equipment

   vii. EIA-316 Minimum Standards for Portable/Personal Radio Transmitters, Receivers, and Transmitter/Receiver Combination Land Mobile Communications FM or PM Equipment, 25-1000 MHz

   viii. EIA-329 Minimum Standard for Land Mobile Communications Antennas, Part I - Base or Fixed Station Antennas, and Part II - Vehicular Antennas

f. Telecommunications Industry Association Standard TIA-603 latest revision

g. Telecommunications Industry Association Standard Technical Service Bulletin TSB-88 latest revision

h. Telecommunications Industry Association / Electronic Industries Association (TIA/EIA) Standard TIA-222 latest revision for communications towers

i. IEEE - Institute of Electrical and Electronic Engineers

j. Military Standard 810 - where specified, radio equipment shall meet specific requirements of parts of Military Standard 810 C, D, E, F, and G

k. National Electrical Code

l. Local Electrical and Building Codes

m. NEMA - National Electrical Manufacturer's Association

n. National Fire Protection Association - (NFPA):

   i. NFPA #1221 - Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems

   ii. NFPA #70 - National Electrical Code

   iii. NFPA #37 - Combustion Engines

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iv. NFPA #78 - Lightning Protection Code

v. NFPA #110 - Emergency and Standby Power Systems

vi. NFPA #58 - Liquefied Petroleum Gas Code

B. The Contractor shall be responsible for meeting the requirements of the latest revisions of each document at the time of installation regardless of the revision level in place at the time of proposal submittal.

C. At time of installation, the Contractor shall update any non-compliant equipment to the latest specification at no additional cost to the County.

D. In addition to the standards and codes referenced above, it is the intent of this document to specify a full and complete system that adheres to the objectives and requirements of P25, Phase 1 and Phase 2.

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2. CURRENT SYSTEM DESCRIPTION

2.1 Overview

A. The County's 800 MHz trunked communication system consists of Harris Corporation's proprietary EDACS technology, with two (2) geo-redundant control sites, 12 simulcast tower sites, two (2) interconnected 6-site simulcast cells, and the EVENT system.

B. The system also includes a P25 Public Safety Interoperable Communications (PSIC) tower site at DeBary.

C. All communication sites are connected to the County's geo-redundant, Harris SR10A.3 VIDA cores.

D. The County operates a consolidated public safety answering point (PSAP) which is operated by the Sheriff's Office at the Emergency Operation and Sheriff's Communications Center (EOSCC) located in Daytona Beach.

E. The EOSCC contains 32 Harris C3 MaestroIP™ model radio dispatch consoles which includes the two (2) operator positions in the Emergency Operations Center (EOC) room housed within the EOSCC facility.

F. The communications system infrastructure sites are linked together using a combination of Aviat DVM6-45, Nokia MDR-8000, and MNI Proteus MX digital microwave links, as well as County-owned fiber.

G. There are fifty-seven (57) fire stations that use a combination of Zetron Model 25 tone alerting technology and Zetron IP-based fire station alerting (FSA) systems. The County has twenty (20) fire stations and the cities have thirty-seven (37) fire stations.

H. The fire stations that are alerted by the Zetron Model 25 tone system use the EDACS radio system for the transmission of the alerting tones and the stations alerted by the Zetron IP system utilize leased IP data connectivity from Spectrum (formerly Brighthouse).

I. The communication system supports approximately 10,000 users from the County, Cities, the State, and surrounding mutual aid partners.

J. The County's towers, equipment shelters, and backup generators are generally in good physical condition and it is anticipated that they will support the new P25 system equipment; however, a small number of towers may require structural reinforcement to meet current wind loading requirements based on Contractor proposed design.

K. The shelters have adequate floor space to support parallel systems during the transition.

L. New -48VDC battery plant uninterruptable power systems shall be implemented at all communication tower sites.

M. Some sites may need floor reinforcement to support the DC battery plant and the Contractor shall note appropriately during the pre-bid site visits.

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N. The EOSCC is capable of supporting the equipment of the new communication system.

2.2 EDACS and DeBary P25 Systems Configuration

A. The County's EDACS trunked system consists of two (2) geo-redundant control sites, two (2) interconnected 6-site simulcast cells, (System A and System B), a single-site cell called System C or the EVENT system, and a single-site P25 cell called System D or the DeBary P25 system.

B. The geo-redundant control sites consist of SR10 VIDA cores which are connected to:

a. The primary and backup dispatch console systems

b. Two (2) Unified Audio Cards (UACs) for conventional analog interfaces

c. System A

d. System B

e. System C

f. System D

C. System A is a 6-site, 14-channel EDACS simulcast system that supports communications in the west side of the County.

D. System B is a 6-site, 16-channel EDACS simulcast system that supports communications in the east side of the County.

E. System C or EVENT is a single-site, 5-channel EDACS system that supports communications for special events in the east side of the County from the EVAC tower site.

F. System D, the DeBary P25 Phase 2 System, is a 5-channel P25 system that supports PSIC communications for some public safety communications events in the southwest side of the County from the DeBary tower site in Seminole County.

2.3 Infrastructure Tower Sites

A. The System A tower sites are Pierson, De Leon Springs, EOC-A, DeLand-FDOT, Orange City, and Deltona.

B. The System B tower sites are Ormond Beach, EVAC, EOC-B, Port Orange, New Smyrna Beach, and Edgewater.

C. The System C is located at the EVAC tower site.

D. The System D tower site located at the DeBary tower site in Seminole County.

2.4 Unified Audio Cards for Conventional and Analog Interfaces

A. There are a number of secondary conventional radio channels and ancillary analog communication systems connected to the EDACS system through two centralized UACs.

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B. The UACs are located at the EOC-A Control Point and at the EVAC tower site.

C. Audio and control from the remaining communication sites are routed to the UACs through connections to the existing channel banks.

D. These resources will be interconnected to the new P25 system and a complete listing of these resources may be found in the appendices.

2.5 BeOn Service for Smartphone Access

A. The County SR10 VIDA cores are equipped with the BeOn virtual server which enables properly equipped smartphones to access the communication system from commercial carrier systems.

B. The County currently has 100 server & client licenses on a server that is capable of supporting 400 licenses.

2.6 Dispatch Facilities

A. The primary dispatch center is located at the 43,000 square-foot EOSCC facility and the backup dispatch is at the Sheriff's Office IT facility.

B. The EOSCC also contains the 4,000 square-foot EOC.

2.6.1 EOSCC Primary Dispatch Center and EOC

A. The EOSCC is located at 3825 Tiger Bay Road in Daytona Beach.

B. The 6,500 square-foot dispatch center is equipped with 30 Harris C3 MaestroIP™ dispatch console positions and the associated electronics.

C. The C3 MaestroIP™ dispatch consoles are at End of Life so to ensure the maintainability of dispatch operations, the thirty (30) Harris C3 MaestroIP™ consoles will be replaced with Harris Symphony consoles prior to commencement of the P25 Project.

D. There are two (2) fire dispatch positions, each equipped with a Zetron Model 25 two-tone encoder interfaced with CAD for dispatch.

E. The two (2) encoders have all the individual station buttons in the two (2) fire dispatch positions.

F. In the second position, or "Pod", there is a third Zetron Model 25 encoder with a limited number of station buttons that is connected to a control station radio that serves as a manual backup FSA system.

G. Supporting electronics equipment is installed in the County's IT equipment room within the EOSCC.

H. The EOC contains approximately 100 desks, each with a telephone and a computer data connection to support the various agencies that respond to the EOC during an emergency.

I. The EOC has a full array of audiovisual capabilities and is equipped with two (2) Harris C3 MaestroIP™ dispatch consoles.

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J. The C3 MaestroIP™ dispatch consoles are at End of Life so to ensure the maintainability of dispatch operations, the two (2) Harris C3 MaestroIP™ consoles will be replaced with Harris Symphony consoles prior to the commencement of the P25 Project.

2.6.2 Backup Dispatch Center

A. The Sheriff's Office IT facility is located at 59 Keyton Drive, Daytona Beach and the backup dispatch facility is collocated within the IT office space.

B. The dispatch console equipment consists of eleven (11) Harris VIP model dispatch software applications running on County-owned computers.

C. Accessories include a footswitch and a headset jack at each operator position.

D. Each VIP console position is equipped with a stand-alone Harris desktop M7100 series control station radio installed in a closed cabinet with the VIP computer.

E. The control stations are connected to a control station antenna combining network in the back equipment room and is connected to an outdoor antenna system.

2.7 Voice Logging Recorder

A. The County currently utilizes two (2) voice logging recorder systems to log telephone and radio communications traffic

B. The primary recorder is an Exacom system located at the EOSCC Sheriff's IT equipment room. The Exacom recorder records sixty-four (64) Intrado VIPER positions with sixty-four (64) 9-1-1 lines, forty-eight (48) trunked voice network interfaces, and sixteen (16) analog channels for a total of one hundred twenty-eight (128) channels.

C. The secondary recorder is a Verint system located at the 59 Keyton Backup Dispatch Center equipment room. The Verint recorder records twenty (20) Intrado VIPER positions with twenty (20) 9-1-1 lines, sixty (60) Admin lines, and twelve (12) analog Crisis Link Lines.

D. Analog radio audio from the EDACS system is provided to the voice logging recorders through the Migration Gateway.

2.8 Communication System Frequencies

A. The EDACS and DeBary P25 PSIC radio systems operate in the 800 MHz frequency band.

B. The County presently holds five (5) 800 MHz FCC licenses for trunking operations, and two (2) licenses for conventional, non-trunked, operations as follows:

a. WNHE867 authorizes a total of thirty (30) frequency pairs for the EDACS System A and System B at each of the following six (6) fixed sites.

i. EOC-A

ii. EOC-B

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iii. EVAC

iv. Port Orange

v. Edgewater

vi. Pierson

b. WPFQ272 authorizes a total of fourteen (14) frequency pairs for the EDACS System A at the following six (6) fixed sites.

i. Orange City

ii. Ormond Beach

iii. New Smyrna Beach

iv. De Leon Springs

v. Deltona

vi. DeLand-FDOT

c. WPFQ272 authorizes an additional sixteen (16) frequency pairs for the EDACS System B at each of the following five (5) fixed sites.

i. Orange City

ii. Ormond Beach

iii. New Smyrna Beach

iv. De Leon Springs

v. Deltona

d. WPFQ272 authorizes an additional three (3) frequency pairs at the Orange City fixed site that include 857/812.9375, 858/813.9375, and 860.9375/815.9375 MHz.

e. WQWE318 authorizes a total of five (5) frequency pairs for the DeBary P25 PSIC System at the DeBary tower site in Seminole County.

f. WQWG235 licenses the current fourteen (14) frequency pairs for System A at the DeBary site when the DeBary site is integrated to the System A simulcast system.

g. WPPW666 authorizes a total of five (5) frequency pairs for the EDACS EVENT system at the EVAC tower site.

h. WQFN278 authorizes the MAFLA mutual aid channel at each of the following fixed sites.

i. Orange City

ii. Edgewater

iii. EVAC

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iv. Pierson

i. WPQC890 authorizes a total of four (4) frequency pairs for National Mutual Aid Channels, 8CALL90, 8TAC92, 8TAC93, and 8TAC94 at each of the following fixed sites.

i. EOC-B

ii. EVAC

iii. Port Orange

iv. Edgewater

v. Pierson

vi. Orange City

2.9 Backhaul Network

A. The County's current microwave backhaul network shall be replaced with a new MPLS-based microwave network.

B. A diagram of the current system can be found in the appendices.

2.10 Paging and Fire Station Alerting

A. The County's current Zetron IP FSA system is used for the alerting of eight (8) fire stations and is not dependent upon the EDACS system other that for the voice messages transmitted following the alerting of the station. Wireline circuits are utilized to alert these stations. Two (2) stations in Orange City use Zetron Model 6204 equipment. Six (6) stations in Deltona use Zetron Model 6 equipment.

B. The County's current Zetron Model 25 FSA system supports fire station alerting for fifty-one (51) stations by broadcasting the analog alerting tones over the Fire 1 and the Fire 2 talk groups on the current EDACS system.

C. The County is studying the replacement of the current Zetron Model 25 FSA system with a network-based IP FSA system that will eliminate the need to broadcast the alerting tones over the P25 voice radio system.

D. If the EDACS system is replaced with a P25 system prior to the implementation of a new network-based IP FSA system, then an interim solution is required to maintain the analog alerting operation of the Zetron Model 25 FSA system.

E. The VHF Fire Paging system provides the secondary method of fire station alerting in the event of failure of the primary EDACS system.

F. The VHF Fire Paging system is interconnected with the current radio and microwave systems and will be upgraded with the EDACS radio system.

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2.11 Interoperability

A. There is good interoperability capability with agencies within the County because they all share the EDACS system.

B. Interoperability capability with surrounding agencies is somewhat limited because of disparate technologies.

C. Interoperability with the Florida Interoperability Network (FIN) network is accomplished by patching FIN to the appropriate talk group on the dispatch consoles.

D. For County agencies operating with other proprietary trunked technologies, and for agencies operating in other frequency bands such as UHF for hospitals or VHF for Forestry, a radio "cross-patch" is initiated either by the Harris C3 MaestroIP™ dispatch consoles or through the FIN system.

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3. SYSTEM IMPLEMENTATION PLAN

A. Contractors shall include a detailed System implementation plan in their proposal.

B. The System implementation plan shall include the complete installation, optimization, and testing of the infrastructure equipment comprised of repeater tower sites, microwave and fiber backhaul networks, base station repeater radios, trunked system controllers and network management systems, dispatch consoles and associated subscriber equipment.

C. All equipment furnished by the Contractor shall meet the requirements of this RFP and the manufacturers' published specifications, comply with all Federal, State, and Local laws, rules, regulations, and ordinances at the time of delivery, and reflect high quality workmanship throughout, and be suitable for the intended purposes delineated herein.

D. The Contractor shall include detailed plans of processes for tracking and controlling the Project in their proposal.

E. The Contractor shall include a high-level Project plan in their proposal for the overall Project schedule, work breakdown structure, project communications, quality assurance, change control procedures, project training, and a transition and cutover plan for each agency.

F. The Project plan shall be a dynamic document that shall be continually updated and evaluated as the Project progresses.

G. Within 60 days after completion of the Detailed Design Review, the Contractor shall provide a detailed Project plan and schedule

H. The County will work with the Contractor to determine the schedule for all radio programming of County and City agencies.

3.1 Project Communications Plan

A. The Contractor shall provide a communications plan in their proposal that includes contact information for the members of the project team and escalation procedures to be followed if there is an issue that may put the Project or a portion of the Project at risk.

B. The County shall require the Contractor’s Project Manager to keep notes of every meeting and to circulate them to the County project team.

C. The Contractor’s Project Manager will request feedback on the previous meeting’s minutes at the beginning of every project meeting and publish any clarifications.

D. The communications plan must show all levels of Project reporting throughout the Project lifecycle.

E. The County requires a regularly scheduled bi-weekly (every two (2) weeks) Project meeting or teleconference starting immediately after the Contract signing.

F. At the County’s discretion, the frequency of the regularly scheduled Project meetings or teleconferences shall increase in frequency to weekly as the pace of the Project escalates.

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G. As required, the County may schedule additional meetings.

H. Items to be included in the communication plan include the following at a minimum.

a. Project team contact information

b. Escalation procedure

c. Scheduled meetings

d. Meeting cycles

e. Meeting agendas

f. Meeting report sample

g. Required attendees by title (engineer, user, executive, etc.)

h. Project status reports

i. Status report sample

j. Status report cycle

k. Content to be provided in the status report

l. Status report recipients

m. Secure web site for document sharing

3.2 Project Schedule

A. Within 30 days after Contract execution, the Contractor shall provide a detailed Project Schedule that commences on the Contract execution date.

B. The Project Schedule shall include important milestones and logical breakpoints during which the County and the Contractor will assess the progress to date, and prepare for the remaining project tasks.

C. The first milestone of the Contractor's schedule shall be Contract execution. All other events shall be referenced in number of days from Contract execution.

D. The Project Schedule shall clearly identify the tasks to be performed by both the County and the Contractor including the following tasks and milestones:

a. Notice to Proceed

b. System Factory Staging completed and equipment shipped to the field

c. Completion of infrastructure installations at the fixed end locations

d. Infrastructure acceptance testing successfully completed

e. Technical, management systems, and user/operator training

f. Coverage testing successfully completed

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g. Test documentation submitted to the County

h. 60-Day Performance Period test successfully completed

i. System infrastructure accepted and warranty begins

j. Completion of the transition of all agencies to the system

k. Decommissioning and disposal of the old equipment

l. Project completion and Final System Acceptance

3.3 Extension of the Project Schedule

A. Installation and satisfactory operation of the system shall be completed within the time period established in the Contract.

B. Requests for Contract time extensions shall be considered as described in the Contract.

3.4 Work Breakdown Structure

A. Within 60 days after completion of the Detailed Design Review, the Contractor shall provide a work breakdown structure that provides a detailed listing of the physical work and tasks to be accomplished by the Contractor and the County consistent with the Contract.

B. The work breakdown structure may be a part of the Project Schedule, but it shall include, at a minimum, the following:

a. Task description

b. Responsibility for completion of work task

c. Date scheduled for completion

3.5 Quality Assurance Plan

A. The Quality Assurance Plan is a physical guideline of the steps taken to demonstrate that system implementation is proceeding in a manner that is consistent with the County expectations and industry standards.

B. Prior to Final System Acceptance, the Contractor shall provide the Quality Assurance Plan.

C. The Quality Assurance Plan shall include a narrative and/or photos of the acceptable final product of each phase of the installation and physical inspection points shall be indicated and include the following as a minimum guideline:

a. The system design review

b. System design documentation

c. Site development and construction

i. Civil work completed

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ii. Tower construction

iii. Equipment shelter foundations

iv. Equipment shelter installation

v. Grounding and bonding

vi. Electrical installation

d. Factory system and equipment staging

e. Equipment inspection and inventory

f. Steps of inspection throughout the implementation process

i. Before installing electronic equipment

ii. After installation of electronic equipment

iii. Before installation of antennas

iv. After installation of antennas

g. As-built documentation

h. Final System Acceptance

D. The County and the Contractor shall have the appropriate representatives inspect and approve the quality of work before moving to the next step and the inspection points shall be a part of the Project Schedule.

3.6 Transition, Cutover, and Fallback Plan

A. The proposal shall include a plan to transition agencies from the existing EDACS systems to the new system and the steps required to complete the cutover.

B. The Contractor shall clearly define their plan to provide a smooth transition/migration of the County users from their current EDACS system to the new P25 communication system, especially considering that both systems may share a common set of 800 MHz frequencies.

C. The Contractor shall provide a detailed transition and cutover plan within 60 days from the Detailed Design Review for County review and approval.

D. The proposal shall also include a plan to transition agencies from the existing Zetron Model 25 FSA RF system, the VHF Paging system, and the RMACS system to the new systems and define the steps required to complete the cutover.

E. The proposal shall also include a plan to transition systems from the existing microwave and fiber backhaul networks and channel banks to the new microwave and fiber IP backhaul networks.

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F. The Contractor shall consider the structural limitations of the towers when planning the transition/migration of microwave backhaul systems and 800 MHz and VHF antenna system loads.

G. During transition, an agency must not have communications on the existing system disrupted and the cutover shall be planned and scheduled in such a manner as to have minimal disruptions to agency operations.

H. The Contractor shall consider the use of gateways, radio patches, timing, training, and/or other methods to minimize disruptions to operations.

I. The cutover plan shall include a fallback plan to transition back to the old systems in the event that serious problems occur during each phase of the cutover phase.

J. The cutover plan shall include well-defined decision points for the County to determine if they are agreeable to the cutover of communications.

K. The County will work closely with the Contractor's Project Manager to develop a comprehensive and successful plan.

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4. COMMUNICATION SYSTEM REQUIREMENTS

4.1 General Overview

A. The Contractor shall propose and implement one 8-site (West side) and one 7-site (East side) linear simulcast, P25 Phase 1 and Phase 2 compliant trunked communications system.

B. In general, the County prefers a highly reliable system design with distributed intelligence that eliminates single points of failure in the network wherever possible.

C. The County prefers commercial off-the-shelf (COTS) hardware and software rather than proprietary radio system equipment.

D. The Contractor shall implement a countywide system comprised of two (2) simulcast cells configured in a similar manner that mirrors the current EDACS system.

E. Each simulcast cell requires geographical redundant control points and core sites.

   a. It is required that each simulcast cell be able to support two (2) or more control points and core sites in the most cost effective manner.

F. The Contractor shall integrate three (3) new tower sites into the simulcast network:

   a. The first site is the Plantation Bay tower site at 1250 Old Dixie Highway, Bunnell, 32174 shared with Flagler County

   b. The second site is the Farmton site that will be located at 3757 Maytown Road, Oak Hill, 32759 in the southern area of the County

   c. The third site is the existing DeBary site at 4901 Wayside Drive, Sanford, FL 32771 which will serve as both a stand-alone 5-channel trunked site and as a simulcast site.

G. The P25 communications system must provide improved radio coverage throughout Volusia County, including improved portable radio coverage within buildings in the defined polygon areas, and improved interoperability with surrounding agencies and technologies.

H. The EVENT system will remain a single-site cell and will be upgraded to P25 Phase 1 and Phase 2 operation, and integrated into the P25 system.

I. The current 5-channel DeBary P25 system is a Region 5 PSIC overlay that will remain a single-site cell and will be integrated into the P25 system.

   a. The current DeBary PSIC frequencies should be combined into the new simulcast antenna systems if frequency spacing permits.

J. The County intends to simulcast their VHF Fire Paging and 800 MHz regional mutual aid communication system (RMACS) channels.

K. The County intends to replace the current dispatch consoles.

   a. Thirty-seven (37) dispatch consoles will be located in the EOSCC, and

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b. One (1) console will be located at 49 Keyton Drive for a total of 38 consoles.

L. The County requires that the Contractor replace all existing radio consoles in a manner that does not affect the daily operation of the dispatch center.

M. Installation of the required cabling shall, likewise, be done in a manner that does not affect the daily operation of the dispatch center.

N. The display monitors at each dispatcher position must be compact LED-type (22 inch or larger) and capable of presenting real time alphanumeric display of pre-configured talk groups, call status, and per-call user identification.

O. The console system must be able to present alias information to the console operator.

P. The new communications system shall provide direct interoperability between participating agencies and shall be capable of interoperable communications at the CAI, and ISSI levels with surrounding P25 systems.

Q. The Contractor shall decommission and completely remove the existing EDACS system equipment upon written notification to proceed from the County.

R. The County intends to implement a new high-reliability, IP-based microwave backhaul network to replace their current network.

S. The County intends to implement a new -48VDC power plant at each of the tower sites for powering of all radio system and backhaul equipment.

T. To ensure a high level of system availability, the system shall be configured with distributed geo-redundant control and network equipment, and subsystems in key areas that affect the delivery of wide-area, trunked radio system communications such that a single point of failure shall not inhibit or otherwise interrupt wide-area communications including dispatch operations.

U. The Contractor shall clearly indicate in their proposal if diversity receive antennas are required to support P25 Phase 2 operation.

V. It is preferable that the proposed P25 system have the capability to share a single user Alias between multiple radios and the Contractor shall describe how this function would be configured and operate.

W. The Contractor's proposed P25 system shall support the State of Florida assigned LID address range of 5,400,000 through 5,499,000 for Volusia County as this will permit Volusia County to user the same LID on multiple P25 networks; the Contractor shall describe how this can be implemented and configured in the P25 radio system and how it will affect radio programming. The preferred programming process shall be simple and straight forward.

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X. The County requires that both simulcast cells appear as one system in the radio profile or template when viewed from the LCD display on the radio and the radio user shall never have to manually touch the radios to switch between simulcast cells.

Y. The radio subscriber or terminal platform must support Long Term Evolution (LTE) 4G at a minimum and WIFI for voice and data communications internal to the radio.

Z. The radio subscriber or terminal platform shall support AT&T's First Network Band 14 as well as other major carriers and the Contractor shall provide a list of brands and carriers supported.

AA. The Contractor shall state the highest data rate supported by the P25 system and describe any methods available on the P25 system to increase data throughput for GPS or other packet data.

BB. The Contractor shall provide complete description of all failover scenarios in their response including in the event of a simulcast system failure or control point or prime site failures.

CC. The Contractor shall describe in detail what happens in the event of a core or prime site failure and the transition time required to full system restoration.

DD. The Contractor shall furnish and install a commercial carrier interface that shall provide authorized smartphone users with a licensed client application to access talk groups on the Phase 1 and Phase 2 P25 communication systems. The desired functionality includes compatibility with IOS, Android and Windows 10 devices, and supports AES256 encryption from end user radios to the broadband device.

EE. The proposed P25 system shall provide seamless interoperability between P25 radio networks via an Inter-Sub-System Interface (ISSI).

a. The ISSI interface shall adhere to the 1022.BACA-B published standards

b. The Contractor shall describe how the proposed P25 network solution can be interfaced to other regional P25 networks now in operation, under development or in procurement planning as required by the ISSI specifications

c. The Contractor shall state how Automatic ISSI Roaming is supported among common and different manufacturer P25 systems

d. The Contractor shall describe whether its automatic roaming implementation requires additional bandwidth.

FF. The Contractor shall discuss whether its proposed system will support text messaging and whether the texts are archived.

4.2 APCO Project 25 Compliance

A. The system architecture shall conform to the objectives and user requirements outlined in the current APCO Project 25 standards (see TIA/EIA-102 family of specifications) in

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terms of digital modulation, spectral efficiency, enhanced audio quality, conventional and trunking modes and signaling, ID methodology, and direct interoperability with equipment from other system and equipment manufacturers.

B. The Contractor shall adhere to the P25 standards for all features that are included in the P25 TIA/EIA 102 specifications, but the County will accept Contractor-specific solutions for those features currently outside of the P25 scope.

C. The Contractor has the full responsibility to demonstrate P25 conformance for those subscriber and network infrastructure features contained in the P25 standards, while clearly delineating those features that have been developed with proprietary solutions.

4.2.1 P25 Compliance Assessment Program

A. Proposals shall include complete and comprehensive detail for all fixed network equipment P25 conformance testing for the systems and equipment being offered to the County.

B. All equipment that deviates from the P25 standards shall be clearly identified in the Contractor's proposal.

4.3 Trunked Simulcast Infrastructure System

A. The proposed design approach shall be modular in nature and provide the flexibility to readily add channel capacity and add tower sites to increase radio coverage.

B. The replacement system shall include replacement of the microwave backhaul network, all base stations and antenna systems, system synchronization, management and control systems, and replacement dispatch consoles.

C. To ensure a high level of system availability, the system shall be configured with distributed, redundant and geo-redundant control and network equipment and subsystems in key areas that affect the delivery of wide-area, trunked radio system communications such that a single point of failure shall not inhibit or otherwise interrupt wide-area communications including the dispatch console operations.

D. The County prefers that all virtualized products make use of VMware.

E. Linear Simulcast technology – As linear modulation is allowed by the P25 standard, the Contractor shall describe the features of its linear simulcast technology and the Contractor shall detail its effect on overlap zones, in-building and outdoor coverage, antenna choice, and audio quality.

4.3.1 Channel Capacity

A. The Contractor shall design the new P25 communications System A with a total of fourteen (14) trunked repeater channels.

B. The Contractor shall design the new P25 communications System B with a total of sixteen (16) trunked repeater channels.

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C. The Contractor shall design the new P25 EVENT communications System C with a total of five (5) trunked repeater channels.

D. The Contractor shall design the DeBary 5-channel P25 PSIC communications System D with a total of five (5) trunked repeater channels.

4.3.2 P25 Phase 1 and Phase 2 Operations

A. The entire P25 system infrastructure shall be designed, licensed, equipped, configured, and implemented to immediately and dynamically support both Phase 1 and Phase 2 transmissions on all base station channels, dispatch consoles, all system talk groups, and all user equipment provided under this RFP.

B. The system shall dynamically determine the most efficient way to process a P25 call without having to dedicate specific channels and talk groups to Phase 1 or Phase 2 radios.

C. The County's long-term goal is for all County system users to operate in the Phase 2 mode.

4.3.3 Trunked ISSI Connections

E. The Contractor shall provide an Inter RF Sub-system Interface (ISSI) that meets P25 standard requirements.

F. The ISSI shall support manual and automatic roaming.

G. The Contractor shall describe in their proposal any operational and functional limitations on automatic roaming when connected to an ISSI from the same or a disparate system manufacturer.

H. The Contractor shall identify in their proposal their specific system implementations where automatic roaming between their system and systems from the same or a disparate system manufacturer have been implemented.

I. The Contractor shall be able to provide automatic roaming with the same or a disparate system manufacturer, at the date of their proposal.

J. The Contractor is required and shall be prepared to demonstrate prior to award to County personnel, their automatic roaming operation where automatic roaming between their system and systems from the same or a disparate system manufacturer have been implemented.

K. The ISSI shall have the ability to support a minimum of six (6) simultaneous connections.

L. Connectivity to the State of Florida Radio System is dependent on direction from the State and state-provided funding.

M. The Contractor shall provide the system with five (5) ISSI connections to each master core to support ISSI connections to the following counties.

a. Flagler County

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b. Putnam County

c. Seminole County

d. Brevard County

e. Lake County

N. The Contractor shall provide in their proposal all hardware, software, and firmware licenses necessary to make operational the five (5) ISSI connections above.

O. The ISSI shall support a minimum of twenty (20) concurrent talk-paths across each connection.

P. The Contractor shall provide, in their proposal, line item pricing for each additional ISSI connection.

Q. The Contractor shall describe in their proposal, in technical and operational detail, the system features and functionalities that are available for users on each system when they are interconnected through an ISSI, including any operational and functional limitations imposed by the ISSI connection.

R. The ISSI shall meet the following minimum functional requirements:

a. Talk group Call

b. Emergency Call

c. Encrypted Voice

d. P25 Phase 1 Vocoder

e. Manual Inter-WACN Roaming

f. Manual Inter-system Roaming

g. Automatic Inter-WACN Roaming

h. Automatic Inter-system Roaming

i. Automatic Intra-system Roaming

j. RFSS Service Capability Polling

k. Transport of PTT-ID

l. Priority Call

m. Emergency Alarm

n. Emergency Alarm Cancellation from one (1) system (Alarm cancellation on interoperability talk groups must be done from one (1) system and filtered to other systems involved so that the alarm only needs to be cleared by one jurisdiction)

o. Group Emergency Alarm

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p. Busy Processing (Busy Queuing and Callback)

q. Subscriber Unit Registration

r. Transport of Authentication Credential

s. Secure Subscriber Unit Registration

t. Subscriber Unit Deregistration

u. Group Affiliation

v. Call Restriction

S. The ISSI may meet the following requirements; please indicate your level of compliance in your response:

a. Selective Call

b. Selective Alert ("Call Alert")

c. P25 Data

d. Short Message / Pre-Programmed Data Message

e. Radio Check

f. Radio Monitor

g. Radio Inhibit/Uninhibit

h. Radio Status Query/Status Update

i. Over-the-Air Rekeying

j. Text Messaging

k. Priority Level Access and Queuing

l. Emergency Preemption (Ruthless Preemption)

m. Dynamic Regrouping

T. The Contractor shall include a listing of the current features supported by their ISSI interface.

U. The Contractor shall include in their proposals some examples of systems where they have connected other manufacturers' P25 systems via ISSI.

V. The County's goal and requirement is that after an initial talk group assignment by the Dispatch Center that the First Responder selects that talk group, and then does not have to further select another talk group when transiting between other vendor P25 network systems.

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4.3.4 P25 Talk Group and User ID Capacity

A. The system shall have the capacity to support, at a minimum, 16,000,000 individual user IDs, without additional hardware.

B. There shall be no licensing costs associated with individual user IDs. This shall include day-to-day users and interoperability users. The Contractor shall affirmatively state in its response that all licensing costs are included in this proposal and that the County may add at no cost up to 16,000,000 user IDs to the system, over the full life of the system, as required to support the County's and its interoperability partners' needs.

C. The system shall be equipped, licensed and configured to support a minimum of 2,000 talk groups and have the capacity to support, at a minimum, 5,000 talk groups without additional hardware.

4.4 Tower Sites and System Infrastructure Equipment

W. The System A communication system base station repeater tower site equipment shall be located at the following tower site facilities:

a. Pierson

b. De Leon Springs

c. DeLand-FDOT

d. Orange City

e. Deltona

f. DeBary

g. Farmton (To be built as part of this RFP)

h. EOC-A

X. The System B communication system base station repeater tower site equipment shall be located at the following tower site facilities:

a. Plantation Bay (Flagler County site to be added as part of this SOW)

b. Ormond Beach

c. EVAC

d. EOC-B

e. Port Orange

f. New Smyrna Beach

g. Edgewater

Y. The following table is a summary of the communications system communications system sites:

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Tower Site	Coordinates	ASR	Structure (ft)	Overall (ft)
Plantation Bay	29-24-11.0 N 081-10-39.0 W	1310365	320	350
Ormond Beach	29-17-07.0 N 081-04-01.4 W	1029742 (Crown)	253	267
EVAC	29-13-36.8 N 081-02-01.4 W	1203757 (New Cnglr)	298	310
Pierson	29-12-56.5 N 081-27-01.1 W	1207957 (Crown)	284	304
EOC-A	29-08-24.3 N 081-08-43.9 W	1265910 (County)	320	340
EOC-B	29-08-13.0 N 081-08-38.3 W	1030518 (Crown)	305	325
Port Orange	29-07-18.0 N 081-01-03.0 W	1029729 (Crown)	284	297
De Leon Springs	29-07-12.7 N 081-19-26.7 W	1040443 (ATC)	285	313
DeLand FDOT	29-01-01.0 N 081-18-09.0 W	1062081 (State of Florida)	267	285
New Smyrna Beach	29-00-59.0 N 080-56-30.0 W	1030513 (Crown)	180	186
Edgewater	28-57-20.9 N 080-53-21.1 W	1203405 (County)	250	264
Orange City	28-56-13.5 N 081-17-32.2 W	1203437 (County)	350	375
Deltona	28-52-20.7 N 081-09-58.5 W	1269078 (County)	300	320
DeBary	28-48-40.2 N 081-20-25.3 W	None	180	200
Farmton Greenfield	28-48-43.95 N 080-57-40.41 W	TBD	320	345

Table 1 - P25 Tower Sites

Z. The coordinates of the Farmton Greenfield site tower in Table 1 above are preliminary and may change pending the final location.

4.5 800 MHz Frequency Plan

AA. The County has a large inventory of 800 MHz-only, P25 capable, trunked user equipment that must be utilized on the new P25 system.

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BB. The Contractor shall utilize the frequency plans listed below developed by the County. These plans are based upon the implementation of existing County 800 MHz frequencies.

Tx	Rx	Tx	Rx
855.2125	810.2125	855.7375	810.7375
856.7375	810.2125	856.7625	811.7625
857.2625	812.2625	857.7375	812.7375
855.9875	810.9875	858.7125	813.7125
858.7625	813.7625	859.4875	814.4875
859.7375	814.7375	860.2625	815.2625
860.7125	815.7125	860.7625	815.7625

Table 2 - System A Frequency Plan

Tx	Rx	Tx	Rx
856.2625	811.2625	857.4875	812.4875
856.9875	811.9875	858.7375	813.7375
857.7625	812.7625	859.2625	814.2625
858.4875	813.4875	859.7625	814.7625
859.7125	814.7125	860.7375	815.7375
860.4875	815.4875	854.3625	809.3625
855.4625	810.4625	856.9375	811.9375
856.4875	811.4875	858.2625	2481.2375

Table 3 - System B Frequency Plan

Tx	Rx	Tx	Rx
856.7125	811.7175	857.2125	812.2125
858.2125	813.2125	859.2125	814.2125
860.2125	815.2125		

Table 4 - EVENT System C Frequency Plan

Tx	Rx	Tx	Rx
853.5125	808.5125	852.8250	807.8250
853.8000	808.8000	853.2000	808.2000
851.7750	806.7750		

Table 5 - DeBary Site PSIC System D Frequency Plan

4.5.1 Intermodulation Analysis

A. Prior to implementation and for each tower site, the Contractor shall perform an intermodulation analysis for all County frequencies deployed at each tower site.

B. The Contractor shall perform an interference analysis for all predicted intermodulation hits up to and including 5th order products.

C. The Contractor shall provide in writing the results of the analysis to the County.

4.6 Network Control Point Equipment and Sites

CC. The communications system network control point equipment shall be mounted in freestanding equipment racks or equipment cabinets, and shall be provided in a

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geo-redundant, fault-tolerant configuration with redundant components including power supplies.

DD. All communications system control point equipment shall be integrated to the Network Control and Management System and provide self-diagnostics and alarms when faults are detected.

EE. The communications system control point equipment shall be located at County facilities as listed in subsections 4.6.1 Master Core Equipment, .4.6.2 Simulcast Control Point System A, 4.6.3 Simulcast Control Point System B.

4.6.1 Master Core Equipment

FF. A geo-redundant master core shall be located at the EOSCC in the I.T. equipment room.

GG. The geo-redundant secondary master core shall be located at the EOC-A Control Point equipment room at 49 Keyton Drive.

HH. The County shall require that master core equipment function in a hot standby mode with transition to the secondary core upon failure of the primary to be less than 30 seconds.

II. Database synchronization shall occur to provide data consistency and immediate update between the databases when switching between the primary and secondary cores. The Contractor shall describe how this is accomplished in their system.

4.6.2 Simulcast Control Point System A

JJ. The primary control point for System A shall be located at the EOC-A Control Point equipment room at 49 Keyton Drive.

KK. The geo-redundant control point for System A shall be located at the Orange City tower site.

4.6.3 Simulcast Control Point System B

A. The primary control point for System B shall be located at the Port Orange Tower site.

B. The geo-redundant control point for System B shall be located at the EOC-B radio tower site.

4.6.4 Receiver Voting Systems

A. The Contractor shall clearly describe how their “voting technology” functions, the voting time interval, and the effect on voice quality.

4.7 System Reliability, Redundancy, and Backup Requirements

4.7.1 Single Point Failure Modes

A. The Contractor shall design their proposed system to prevent the loss of wide-area trunked communications due to any single point failure within the system.

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B. The Contractor shall demonstrate in their proposal that their proposed system design will not suffer a loss of wide-area trunked communications due to any single point failure within the system. The remaining sites shall continue to provide trunked simulcast communications. Fallback to conventional radio operations is not acceptable.

C. The Contractor shall describe how security is maintained if a core or simulcast site fails, and how authentication is maintained. How is the user validated under these circumstances?

4.7.2 Simulcast Site Failure

A. In the event of the failure of one (1) or more simulcast tower sites within a simulcast cell, the remaining simulcast sites within the simulcast cell shall maintain full trunked operation.

4.7.3 Simulcast Base Station Failure

A. Should a single base station (repeater) fail, the site shall continue to operate in the trunked mode and the failed channel shall be removed from the trunked pool of frequencies.

4.7.4 Control Channel Reliability

A. In the event that the control channel of a simulcast cell or single-site fails, the failure shall be detected and any of the remaining channels shall be automatically assigned to transmit the control signaling.

B. The failed channel shall be automatically removed from service and be reported to the network management alarm monitoring computer.

4.7.5 Dispatch Console System Failure

A. The console system shall be equipped with a number of self-diagnostic subsystems that shall continuously monitor and verify the correct operation.

B. Diagnostic capability shall be distributed among independent and redundant subsystems and shall not rely upon one central diagnostic circuit.

C. Should a fault be detected, the supervisory consoles shall be notified via the Network Monitoring and Control System.

D. Redundant equipment shall be automatically activated, and diagnostic information shall be logged.

E. Diagnostic messages displayed shall be presented in an easy to understand format.

F. Diagnostic systems that require the dispatch supervisor to cross-reference an error code to a fault message shall not be acceptable.

G. In the event of the failure of one (1) or more console operator positions, the remaining dispatch console operator positions shall maintain full operation.

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4.7.6 Dispatch Console Fallback

A. When link connectivity is lost to the P25 simulcast network, a link failure message shall prominently appear on all operator and supervisor console displays to notify them that the console system is no longer in contact with the radio infrastructure system.

B. The console system shall maintain connectivity and functionality with local network resources such as conventional interfaces, gateways, and control stations.

C. The operator shall be able to select the desired talk group on a backup control station or portable radio to communicate with field personnel.

D. The Contractor shall include descriptions of failure scenarios and discuss all redundant features that include dual circuitry and network components, switchover circuitry and the outage time to accomplish switchovers.

E. An alarm indicating that the failure and switchover occurred shall be reported at the supervisor consoles.

4.7.7 Infrastructure Power Systems Failure

A. In the event of the failure of commercial power, the trunked system infrastructure and dispatch consoles shall be powered by a suitably sized uninterruptible power source of sufficient capacity to maintain full operation of the equipment during the transition to the backup power generator system.

B. The requirements for the uninterruptible power systems (UPS or DC Power Plant) are defined in Section 11.

4.7.8 Catastrophic System Failure

A. Should a portion or the entire trunked radio system fail to the point that wide-area trunking can no longer be maintained, then the trunking system shall revert to what is commonly known as a “site trunking” or in some cases a "failsoft" mode of operation.

B. Contractors shall fully describe in their proposals their various fall back scenarios in the event of losing wide-area simulcast trunking and for individual site failures.

4.8 Trunked System Functional Requirements

4.8.1 P25 Data Communications

A. The system shall be equipped and licensed to provide P25 data services to support data communications with subscriber equipment for features such as over-the-air-rekeying (OTAR), over-the-air-programming (OTAP), and other features such as text messaging and AVL that require data communications.

B. The Contractor shall provide pricing in Exhibit B for P25 Data in their proposal.

C. Speech Encoding Vocoder technology – The County is aware that P25 radios using different digital protocols may want to communicate with each other. The Contractor

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shall describe how its system handles different vocoder technologies and which vocoder types it supports.

4.8.2 Voice Encryption

A. The system infrastructure shall support Advanced Encryption Standard 256 (AES256) end-to-end digital voice encryption for all dispatch consoles, voice logging recorders, and for properly-equipped user equipment.

B. The Contractor shall provide pricing in Exhibit B for P25 AES256 encryption in their proposal for a total of 100 encrypted talk groups.

C. The Contractor shall identify whether its system will permit a radio using DES encryption to communicate with a radio using AES256 encryption.

4.8.3 Over-the-Air-Rekeying

A. The system shall be capable, configured and operable for Over-The-Air-Rekeying (OTAR) of the AES256 encryption algorithms.

B. The Contractor shall describe their system's capability for OTAR, including any limitations that rekeying subscribers over-the-air has over traditional methods, and describe the process by which the rekeying takes place and the timeframe required to rekey an individual radio and a group of 100 radios.

C. The Contractor's description of this process should include all factors affecting the timeframe required to complete the rekeying of the 100 radio example.

4.8.4 Over-the-Air Programming

A. The County is interested in programming subscriber radio code plugs "Over-the-Air" (OTAP) to reduce the amount of time and effort required in making changes to the radio fleet in the event of system changes or expansions.

B. The Contractor shall describe their system's capability for OTAP (P25, Wi-Fi, LTE), including any limitations that programming of subscribers over-the-air has over traditional methods.

C. The Contractor shall describe the process by which the reprogramming takes place and the timeframe required to fully reprogram an individual radio and a group of 100 radios based upon the expected size of the radio programming.

D. The Contractor shall describe any capability to perform differential reprogramming where only a portion of the radio's programming is changed and the timeframe required to differentially program a small programming change of an individual radio and a group of 100 radios (provide explanation of the small programming change used in calculations).

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E. The Contractor shall provide a complete listing of the programming capabilities of their OTAP offering including the programming of subscriber equipment personalities and flash firmware code plugs.

F. The Contractor shall include in their response how subscriber radios from other manufacturers can be programmed via OTAP.

G. The Contractor shall provide pricing for OTAP in their proposal.

4.8.5 GPS and AVL (Optional)

A. The Contractor shall describe their system's capability to support GPS.

B. The Contractor shall include all required system hardware to provide GPS data as an Application Programming Interface (API) that can be used by manufacturers of CAD, GIS, etc.

C. The Contractor shall provide a complete listing of the capabilities of their GPS offering including the minimum location refresh rate required for a group of 100 users, and the ability to manually "ping" a unit from dispatch to acquire its present location.

D. The Contractor shall include in the proposal the associated licenses to enable each available option for all subscriber radios.

E. The County prefers an in-band GPS capability in which GPS information is sent as part of the actual call data and audio transmission.

F. GPS and AVL shall be performed via P25 standards based data calls and compliant with P25 Tier 2 Location Services.

G. The Contractor shall include optional pricing for enabling proprietary modes to improve GPS/AVL throughput for system and subscribers, such as Enhanced Data, Location-on-PTT, and Location-on-Receive.

H. The County desires an easy-to-use application, which is GIS based, that allows personnel to identify geographic areas on a map of Volusia County and display the location of GPS-enabled radios in that area. Historical data and Presence information would be valuable features of this application.

I. The Contractor shall describe the "Presence" capabilities of its P25 radios and system.

4.8.6 P25 System Features and Services

A. The Contractor's proposed P25 system shall support all P25 specifications including ISSI.

B. The Contractor shall identify any specifications that they do not currently support, and provide the date that the specification will be available.

C. The proposed system shall be able to provide public safety features and services based upon the most current P25 guidelines.

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D. The proposed system shall provide the following functions and services at a minimum:

a. Affiliation
b. Announcement Group Call
c. Broadcast Voice Call
d. Busy Queuing and Call Back
e. Call Alert
f. Call Interrupt
g. Call Restriction
h. Call Routing
i. Channel Marker
j. Continuous Assignment Updating
k. Discreet Listening
l. Dynamic Regrouping
m. Emergency Call
n. AES256 Encryption
o. Group Voice Call
p. Individual Voice Call
q. Misdirected Radio Protection
r. Multiple Algorithms
s. Multiple Key Encryption
t. Multiple Priority Levels
u. Out-of-Range Indicate
v. Over-the-Air Rekeying
w. Priority Call
x. Recent User Priority
y. Preemptive Priority Call
z. Radio Check
aa. Radio Unit Inhibit
bb. Radio Unit Uninhibit
cc. Radio Unit Monitoring

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dd. Registration

ee. Roaming

ff. Silent Emergency

gg. Status Request

hh. Status Update

ii. System Call

jj. Talk Group Call

kk. Talking Party Identification

ll. Talk Prohibit Tone

4.8.7 Interoperability with Legacy and Conventional Systems

LL. The Contractor shall describe in their proposal, in technical and operational detail, how their proposed system will provide the County's P25 users, interoperability with users on legacy and conventional systems.

MM. At a minimum, these interfaces shall include functionality for the following:

a. Fixed Station Interface

b. New control station radios connected to the dispatch console systems to communicate with users on disparate systems

c. Future 2-wire and 4-wire tone-controlled wireline base stations

d. Local PTT/COR/E&M control for local base stations

e. Other 2-wire and 4-wire analog sources

4.8.8 Commercial Carrier Smartphone Interface

A. The Contractor shall furnish and install a commercial carrier interface that shall provide authorized smartphone users with specially equipped cellular smartphone handsets to access talk groups on the P25 communication system.

B. The Contractor shall support the proposed smartphone commercial carrier solution in a redundant, high-availability configuration from both the primary and the redundant system master core control points. The smartphone server shall be redundant and communicate across both cores.

C. The Contractor shall provide in their proposal a comprehensive technical and operational description of their offering.

D. The Contractor-proposed smartphone commercial carrier solution shall be capable of supporting a minimum of 2000 smartphone users.

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E. The Contractor shall provide in Exhibit B a listing of the costs for all required hardware, software and licensing fees for a quantity of one-thousand (1000) smartphone users that would have access to 80 total talk groups consisting of a minimum of 20 encrypted talk groups.

F. The Contractor shall provide in Exhibit B a listing of the costs for additional blocks of 100 users and 10 talk groups.

G. Additionally, the Contractor shall state whether the software licensing is per concurrent user or per individual unit, and whether the license is perpetual in term or not.

H. It is desired that the Contractor-proposed smartphone commercial carrier solution will support real-time video streaming. The Contractor shall provide a detailed description of its video streaming capabilities for its commercial carrier smart phone interface.

4.9 Trunked and Conventional Base Station Repeater Equipment

A. All base station repeater equipment shall be certified to be FCC type accepted and meet all applicable FCC technical standards and the Contractor shall provide the FCC type acceptance numbers in their proposals.

B. All trunked and conventional base stations and repeaters shall be rated for a transmitter power output of 100 watts and be capable of operating at a 100% duty cycle at the full rated transmitter power output.

C. All trunked base stations and repeaters shall be of the same model and power rating.

D. All conventional base stations and repeaters shall be of the same model and power rating.

E. All trunked stations shall meet the performance standards and specifications as specified in TIA-102.CCAB and performance recommendation.

F. The trunked repeater base stations shall be capable of supporting the radio frequency signals and modulation modes defined in the P25 Standard for Phase 1 and for Phase 2 modulations.

G. The trunked repeater base stations shall support linear simulcast modulation modes for Phase 1 and for Phase 2 modulations.

H. All trunked repeaters shall be configured to be powered from the new -48 VDC power system.

I. The Contractor shall provide extensive specifications and documentation for the proposed base station equipment and related systems such as:

   a. Station construction details (enclosure type, chassis type, etc.)

   b. Transmitter specifications

   c. Receiver specifications

   d. Tuning procedures

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e. RF devices such as isolators, filters, duplexers, shielding, transmitter combiners, receiver multi-couplers, tower top amplifiers

f. Station ID devices

g. Power supplies

4.9.1 Precision Frequency Source

A. The precision frequency source shall be redundant, and shall be provided at each simulcast site to stabilize frequency synthesizers in the repeater base stations, and to provide synchronization of simulcast transmission equipment.

B. The precision frequency source shall be a redundant "off-the-air" GPS frequency locked source.

C. The precision frequency source shall be capable of maintaining the proper frequency stability and synchronization of the system upon failure/loss of the primary GPS reference signal receiver.

D. The Contractor shall state in their response the hold time and frequency source that will be utilized when GPS synchronization is lost. The precision frequency source shall be provided with redundant power supplies.

E. The GPS frequency source systems alarms shall be integrated to the Network Control and Management System.

4.10 800 MHz Antenna Systems

A. The Contractor shall furnish and install the antenna systems at each of the tower sites including all antennas and mounts, pigtails, transmission lines, ground kits, surge suppressors, and transmitter combiners.

B. The antenna systems for the two (2) P25 simulcast cells shall include at a minimum, the following antenna system configurations:

a. The implementation of a minimum of two (2) transmit antennas and two (2) transmitter combiner systems at each tower site

b. The implementation of a receive antenna system, tower-top preamp and receiver multicoupler systems at each tower site

C. The antenna systems for the RMACS and the EVENT systems shall include at a minimum, the following antenna systems configuration:

a. The implementation of omni-directional transmit and receive antenna systems at each tower site

b. The implementation of a minimum of one (1) transmit antenna and transmitter combiner systems at each tower site

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c. The implementation of a minimum of one (1) receive antenna system, tower-top preamp and receiver multicoupler systems at each tower site

D. All base station antennas and transmission lines shall be furnished with 7/16-inch DIN connectors wherever possible.

E. The Contractor shall furnish low PIM model transmit and receive antennas wherever possible with DIN connectors.

F. Adapters in any transmission lines are not permitted and will be rejected.

4.10.1 Transmission Lines

A. The Contractor's transmit and receive antenna systems design shall utilize at a minimum, solid-jacketed, 1-5/8-inch transmission lines for transmit and 7/8-inch transmission lines for receive where tower-top preamp systems are used.

B. The transmission lines for the tower-top-preamp test ports shall be solid-jacketed 1/2-inch.

C. All transmission lines and interconnecting jumpers shall be continuous length, 100% shielded, foam polyethylene dielectric, UV resistant, as manufactured by CommScope, or a County-approved equivalent, and sized as required to meet the Contractor's engineering specifications.

D. Connectors shall be properly installed and shall match the appropriate mating connectors.

E. Splices or adapters in any transmission lines are not permitted and will be rejected.

F. Standard stainless bolt-in hangers shall be used and snap-in hangers are not acceptable without County approval.

4.10.2 Transmitter Combiner

A. The Contractor shall provide transmitter combiners at each tower site and any spare ports shall be properly tuned and terminated.

B. Repeater-to-combiner RF interconnect cables shall be ½-inch Superflex minimum or approved equivalent.

C. Combiner-to-bulkhead RF interconnect cables shall be ½-inch LDF minimum or approved equivalent.

D. Low-loss transmitter bandpass filters shall be provided on each combiner output at all sites where the transmit and receive antennas are mounted at the same height and vertical separation cannot be achieved.

E. The Contractor shall submit their proposed combiner plan in their proposal.

F. The proposal shall state the manufacturer and model numbers of the combiners and filters proposed for each site and provide the complete specifications including insertion losses per port.

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4.10.3 Receiver Multicoupler

A. The Contractor shall provide a receiver multicoupler and tower-top preamplifier system for each receive site.

B. The multicoupler system shall consist of a redundant tower-mounted preamp, preselector filter, tower-top amplifier test port, and equipment shelter based receiver distribution system including power supply and associated controls.

C. Receiver-to-multicoupler RF interconnect cables shall be ¼-inch Superflex minimum or approved equivalent.

D. Multicoupler-to-bulkhead RF interconnect cables shall be ½-inch LDF minimum or approved equivalent.

E. The tower-mounted preamplifier shall be redundant, and it shall be possible to switch the "main" or "backup" preamp into service or bypass them altogether from the switching controller located in the shelter.

F. The tower-mounted preamplifier shall provide a failure mode where the preamps are bypassed in the event of a failure of both preamps.

G. The tower-top amplifier test port shall allow the preselector input to be transferred to an internal termination load for testing purposes.

H. An internal coupler and a front panel mounted test port shall be provided to permit injection of test signals between the termination and the preselector filter.

I. The antenna multicoupler systems shall be expandable to accommodate 25% growth beyond the channel requirements of the fully implemented communications system.

J. The receiver multicoupler system shall be integrated to the Network Control and Management System for alarm monitoring purposes.

4.10.4 800 MHz Test Antenna

A. The Contractor shall furnish and install a test antenna system at the Plantation Bay and Farmton tower sites including all antennas and mounts, pigtails, transmission lines, ground kits, and transmission line surge suppressors.

B. The test antenna system shall consist of a low gain fiberglass antenna, dbSpectra DS8A03F36U-N or approved equivalent, solid-jacketed, 1/2-inch LDF transmission line, and a transmission line surge suppressor, PolyPhaser IS-50NX-C2 or approved equivalent.

C. The test antenna system shall be installed on the tower at the same elevation as the P25 receive antenna.

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4.11 Network Control and Management System

NN. The Contractor shall furnish and install a Network Control and Management System (NCMS). The NCMS shall provide system administrators with access to databases for data entry and retrieval, record keeping, adjustment of the system operating parameters, and system usage statistics.

OO. The NCMS shall support multiple users and a minimum of four (4) concurrent sessions including remote access users.

PP. The NCMS user terminals shall be installed at the following County locations:

a. The IT computer room at the EOSCC

b. The EOC-A Control Point equipment room at 49 Keyton Drive, Daytona Beach, Florida

QQ. The NCMS shall provision and monitor the integrity of all major communications system components and subsystems, and routinely poll system devices to determine their status.

RR. This shall include, but not be limited to, the trunked system controller status, system and equipment diagnostics, fault reporting and alarms.

SS. The NCMS shall allow operators to create, change, and delete items such as sites, talk groups, aliases, channels, and updating subscriber units.

TT. The NCMS and user terminals shall be powered from 120 VAC 60Hz and be equipped with a UPS backup with a 30-minute run time minimum.

UU. The NCMS and user terminals shall be equipped with 22-inch LCD display monitors.

4.11.1 Remote Access

A. The system shall provide the County access to the NCMS from remote locations including infrastructure sites on the proposed backhaul network and external unspecified locations.

B. Access shall be possible using a Windows-based computer.

C. The Contractor shall provide in their proposal a detailed description of the remote access capabilities of their proposed system and clearly depict the functionality available via remote access, the method of connectivity proposed, and the security measures provided to prevent unauthorized system access.

4.11.2 NCMS Network Security

A. The Contractor shall provide in their proposal a detailed description of their proposed security measures to protect physical network components (routers/switches, buildings, etc.) and how the network and the information on the network will be kept secure.

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B. The Contractor shall describe its complete security and disaster recovery process that shall include virtualized snapshot, backup and recovery of servers, anti-virus and security updates, and router security updates.

C. The Contractor shall describe the process of isolating software-based malware including the estimated time to recover a server and data.

D. The County shall require that any NCMS Internet-facing servers receive hourly anti-virus updates from the Contractor's proposed supplier.

4.11.3 System Manager Access Levels

A. The NCMS system management application shall have multiple levels of security access. The system management function shall be password protected and keep a log of all login and entries into the system by date, time, and authorized individual.

4.11.4 Database Partitioning

A. The NCMS system management application shall be capable of partitioning the database such that different managers have secure access and control over the units and groups for which they have been authorized.

4.11.5 Communication System Failure Notification and Alerting

A. The NCMS system shall provide the capability for e-mail and text alerts to be sent to designated administrators and personnel when critical failures occur on the communications system.

4.11.6 System Database Management

A. The NCMS system shall maintain a System database of system configuration information, such as talk group configurations and radio ID ranges.

B. The System database shall be maintained to simultaneously store and update system user profiles such as user group access, priority levels, dynamic regrouping plans, authorization codes, call statistics, traffic recordings for each radio, talk group, fleet map and agency, etc.

C. The Contractor shall provide a detailed list of the data and information types kept in its System database.

D. Additionally, whenever a field unit is powered on and is within radio coverage of the communication system, the unit's discrete address and user group selection shall be recorded into the system database.

E. The System database shall permit user defined sorting of calls by units, groups, time of day, duration of call, channel, site, and priority.

F. The System database shall be continuously backed up in real time, and the backup System database shall act as a "fault tolerant" database that is automatically kept current.

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G. Should there be a failure with the System database, the backup System database shall automatically be activated for system access with no drop in service.

H. The System database shall have sufficient capacity to store all system profiles, as well as the capacity to store a minimum of 365 days of system activity for report generation.

4.11.7 Lucity (Central Square Technologies) Database

A. The County is developing a Lucity™ database to track maintenance and inventory changes in the Contractor's core database. The primary purpose of the Lucity™ database is to track radio maintenance activities and document radio inventory at all times. The County's intention is that county and city agencies and radio system vendor will be able to manage their own radio inventories and obtain up-to-date software and hardware maintenance information by accessing the Lucity™ database. The County will locate the Lucity™ database in the DMZ area of its data network.

   a. The Contractor shall make this data available to the County at all times.

B. The Contractor shall describe the process of how the County can access the information in the System database and extract data into the Lucity™ database .

   a. The Lucity™ application is based on Microsoft SQL Server and is an application that is used to manage and maintain assets and manage maintenance activities.

   b. The County currently downloads the SQLdatabase from the Harris Communications System Director (CSD) every night and imports it into Lucity™ .

   The County currently pulls the following data fields from the Harris CSD:

Unique_Id
Unit_Name
Unit_Type
Template_Unique_Id
Home_Network
Home_Node
Home_Group
Home_Agency
Home_Fleet
Home_Subfleet
Dedicated_Line
Operator
Agency
Department
Equipment
Software_Version
Serial_Number
Physical_Id
Asset_Number

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Property_Asset
Description
Last_Modified_By
Last_Modified_At
Node_Unique_Id
Unique_Id
Unit_Name
Unit_Type
Template_Unique_Id
Home_Network
Home_Node
Home_Group
Home_Agency
Home_Fleet
Home_Subfleet
Dedicated_Line
Operator
Agency
Department
Equipment
Software_Version
Serial_Number
Physical_Id
Asset_Number
Property_Asset
Description
Last_Modified_By
Last_Modified_At
Node_Unique_Id

4.11.8 Alias Database Management

A. The NCMS system shall include functionality that provides a single alias database and update process for all system, consoles, and subscribers.

B. It is not acceptable to require the County to maintain separate alias databases for consoles and subscribers and have multiple processes to update the alias database in these components.

C. The Contractor shall describe the alias database functionality and update process in detail in their response.

D. The Alias Database shall be able to associate a single Alias with multiple P25 communication devices.

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4.11.9 System Management Report Generation

A. The NCMS system shall include a monitoring/management terminal, with software that allows for detailed system and summary reports, individual radio reports and other customized radio reports based upon a given set of parameters.

B. System status information shall be accessible from the system management terminals.

C. The system manager application shall be capable of generating system management reports to provide management personnel with pertinent system information and reports to make informed decisions regarding the system capacity and grade of service, and the operational effectiveness of the various components of the communication system.

D. The system shall be capable of archiving a minimum of 365 days of data and reports and shall include at least 12 months of system activity.

E. The Contractor shall provide in their proposal a detailed description of the standard and optional reporting capabilities, including the ability to create ad-hoc reports of their proposed system and include 1-page samples of each report.

F. Describe the reporting system administrative security model that supports database partitioning.

4.11.10 System Ancillary and Site Alarms, and Controls

A. Authorized personnel shall be able to query and retrieve alarm conditions pertaining to the alarm status of the communication systems and equipment.

B. When activated, the alarm system shall provide audible and visual notice on the NCMS computers located at 49 Keyton Drive and the EOSCC IT equipment room.

C. The NCMS system management and monitoring terminals shall be equipped with a minimum of 22-inch display monitors.

D. The NCMS system shall include the ability to alert service personnel via email and text messaging.

4.11.11 Remote Terminal Units

A. The County has DPS Telecom NetGuardian remote terminal units (RTU) at each site. The County intends to keep the NetGuardian RTUs in operation for monitoring of the existing environmental alarms. The County operates a separate network management system for monitoring of the alarms.

B. The Contractor is not required to interface the NetGuardian RTUs into the Contractor's NCMS.

C. The Contractor shall provision the necessary VLAN on the new backhaul network to support the existing NetGuardian RTUs and coordinate with the County to migrate the RTUs to the new backhaul network.

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D. The Contractor shall coordinate with the County for any system alarms from the proposed system requiring an RTU interface at each communications site.

E. At all communication sites, the Contractor shall furnish and install an RTU demarcation punch block at each communications site and cross-connect the local site alarms to the RTU.

F. Any alarm conductors that connect to equipment located outside of the equipment shelter shall be protected by an appropriately-rated surge suppression device, installed as close as reasonably possible, to the location where these conductors enter the equipment room or shelter.

4.12 Conventional and Analog System Interface Gateways

A. The new P25 communication system shall be equipped with interface gateways that will generally perform the functions of the centralized UACs.

B. The gateways shall be collocated with the analog radio equipment at the communication sites and be connected to the new IP-based backhaul network.

C. The Contractor shall furnish and install conventional channel and analog interface gateways to facilitate the connection to the P25 communication system.

D. The conventional channel and analog interface gateways shall be configured to support the system resources currently supported by the UACs as depicted in Appendix B: Universal Audio Card Connections.

E. The County understands that some of the individual resources presently connected to the UACs will change because of the requirements for simulcasting of the VHF Fire Paging and the RMACS radio channels.

F. The Contractor shall be responsible for the provision and implementation of the conventional channel and analog interface gateways.

G. The Contractor shall provide four (4) spare conventional gateway ports at each tower site with analog equipment for future growth.

4.13 Primary FSA 800 MHz Analog Simulcast System

The County will consider two options for replacing the Primary Fire Alerting System over EDACS. Option 1 will be a Simulcast VHF system and Option 2 will be fire alerting over the P25 Phase 2 radio system. The County will select the desired option during negotiation of the Contract.

4.13.1 Simulcast VHF FSA System (Option 1)

A. The Zetron Model 25 analog FSA encoder equipment will not be replaced in this project and the Contractor shall furnish and install a new conventional analog simulcast radio channel to replace the functionality currently supported by the analog EDACS system.

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B. The Zetron Model 25 analog FSA system and the new simulcast 800 MHz radio channel will be the primary method of alerting fire stations.

C. The Zetron Model 25 FSA system broadcasts the paging tones and voice simultaneously over the 800 MHz and VHF radio channels.

D. The Contractor shall furnish and install a new six (6)-site, single channel, analog simulcast 800 MHz FSA system radio channel.

E. The Contractor shall furnish and install continuous duty transmitters with a rated output of 100 watts minimum.

F. The new FSA analog simulcast system shall be transmit-only and a receiver voting system is not required.

G. The Contractor shall integrate the system into the new P25 radio and dispatch console systems, and to the Zetron Paging Encoder system.

H. The Contractor shall connect the new FSA base stations and the associated network and control equipment to the -48VDC battery plant at each site.

I. The Contractor shall work with VCSO Dispatch and County IT to determine the dispatch radio console screen layout and interface for the simulcast FSA system.

4.13.2 FSA over P25 Alternative (Option 2)

A. The Contractor shall be allowed to propose an alternative solution to support the Zetron Model 25 FSA system over the new P25 communication system; however, the Contractor shall explain in full detail how they will guarantee the reliability of broadcasting analog paging signals over a P25 network.

B. The Contractor shall assume full responsibility for the reliability of the FSA system, and shall be responsible for all costs associated with any remedial equipment and/or services that may be required to correct any issues encountered.

4.13.3 Cutover and Programming of FSA Fire Station Radios

A. The Contractor shall furnish all materials and services necessary for the cutover of the Zetron Model 25 FSA operations from the EDACS system to the conventional 800 MHz FSA radio channel and frequency.

B. The Contractor shall furnish all materials and services necessary to reprogram and test the operation of the FSA radio and tone decoder system at each of the fire stations operating on the new conventional frequency.

C. The Contractor shall not be responsible for the repair of defective equipment discovered during the work.

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4.14 RMACS 800 MHz Simulcast System

A. The Contractor shall furnish and install a new analog simulcast 800 MHz Regional Mutual Aid Communication System (RMACS) system.

B. The Contractor shall furnish and install continuous duty transmitters with a rated output of 100 watts minimum.

C. The new analog simulcast system channels shall be configured to provide receiver voting capabilities.

D. The Contractor shall replace the current 8CALL90 channel simulcast equipment and integrate it into the new P25 radio and dispatch console systems.

E. The Contractor shall upgrade the current 8TAC92, 8TAC93, 8TAC94 and MA-FLA channels to simulcast and integrate them into the new P25 radio system.

F. The Contractor shall replace the 800 MHz RMACS antenna system, combiner system and multicoupler system at each site.

G. The Contractor shall connect the new RMACS base stations and the associated network and control equipment to the -48VDC battery plant at each site.

H. The RMACS simulcast system base stations shall be deployed at the following tower sites:

   a. Edgewater

   b. EVAC

   c. Orange City

   d. Pierson

   e. Port Orange

   f. EOC-B (8CALL90 channel only)

I. The Contractor shall work with VCSO Dispatch and County IT to determine the dispatch radio console screen layout and interface for the Simulcast RMACS system.

4.15 Backup or Secondary VHF Fire Paging Simulcast System

VV. The Zetron Model 25 analog FSA system and the VHF simulcast radio channel is the secondary method of alerting fire stations.

WW. The Zetron Model 25 FSA system broadcasts the paging tones and voice simultaneously over the 800 MHz and VHF radio channels.

XX. The Contractor shall furnish and install a VHF analog simulcast system equipment to replace the existing multisite VHF system and integrate into the new P25 radio and dispatch console systems.

YY. The Contractor shall use the County's current VHF frequency 154.3400 MHz.

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ZZ. The Contractor shall furnish and install continuous duty transmitters with a rated output of 100 watts minimum.

AAA. The VHF simulcast system base stations (repeater) shall be deployed at the following tower sites:

a. Edgewater

b. EOC-A

c. Orange City

d. Pierson

e. Port Orange

f. EVAC (This will be a new VHF simulcast paging site)

BBB. The Contractor shall furnish and install a new DB224 or equivalent VHF antenna system with LDF5-50 transmission line at each site. All antennas are omnidirectional except Port Orange that is offset to the East.

CCC. The Contractor shall connect the new VHF base stations and the associated network and control equipment to the -48VDC battery plant at each site.

DDD. The Contractor shall work with VCSO Dispatch Operations and County IT to determine the dispatch radio console screen layout and interface for the new VHF Fire Paging Simulcast system.

4.16 VHF Hazmat Communications System

A. Volusia County Fire Services currently utilizes a VHF Simplex system consisting of 16 ICOM intrinsically safe portable radios with throat microphones, external push to talk, lapel microphones, individual chargers and extra batteries.

B. The Hazmat team desires to eliminate the need to carry two radios on a Hazmat incident and would like to use the P25 network with one Encrypted Hazmat talk group and one non-encrypted Hazmat talk group for interoperation with surrounding Counties.

C. The Contractor shall propose a package solution for Hazmat communications including the latest technology in throat microphones, bone microphones, and ear bud microphones.

4.17 Volusia County Hospital Subscriber Gear

A. The Contractor shall extend subscriber equipment and accessory pricing to all hospitals located in Volusia County for the term of the Contract.

4.18 Voice Logging Recorder System

A. The existing voice logging recorder system shall be upgraded or replaced in order to continue to record E911 and administrative telephone lines, 800 MHz radio talk group audio, conventional radio channel audio, and dispatch position console audio after the transition to the new P25 Phase 2 radio system.

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B. For the purposes of sizing the upgraded or new voice logging recorder system, the Contractor shall utilize the following information:

Source Description	Number of Channels
Select TX and RX combined audio from each operator position at Primary 911 Dispatch	64
Select TX and RX combined audio from each operator position at Backup 911 Dispatch	20
Total P25 Phase 2 (28 TDMA working channels) system trunked voice paths	56
EVENT System (4 working channels) system trunked voice paths	8
Analog Conventional Resources	64
RMACS 800 MHz Simulcast System conventional voice channels	5
Client Licenses and QA Package	25

Table 6 – Voice Logging Recorder System Configuration

4.18.1 Upgrade of the Existing Voice Logging Recorder Systems

A. As part of the Contractor's response to this RFP, the Contractor shall indicate whether it is possible to utilize the existing recording systems to record talk group audio after the transition to the P25 Phase 2 radio system.

B. If the existing voice logging recorder equipment is upgraded or replaced, the upgrade or replacement shall include the capability to decrypt AES256 data and audio.

C. If the existing equipment can be utilized with the new P25 radio system, the Contractor shall propose all necessary equipment, services, and all necessary API interfaces required to integrate the existing equipment.

D. Additionally, the Contractor shall clearly state the limitations of utilizing the existing voice logging equipment with the new P25 system.

E. If the existing recording equipment cannot be utilized to record P25 Phase 2 audio, the Contractor shall indicate this in their response.

4.18.2 Backup Voice Logging Recorder System (Optional Purchase)

A. Regardless of whether it is possible or not to utilize the existing voice logging equipment, the Contractor shall propose a single platform replacement voice logging recorder system.

B. It is anticipated that client work stations for the new voice logging system will be required at the EOSCC primary dispatch and at the 59 Keyton Drive backup dispatch center.

C. The Contractor shall include detailed pricing in Exhibit B – Pricing Sheets for the complete replacement of the existing voice logging recorder systems with a voice logging recorder that is compatible with P25 Phase 2 trunking systems, and able to record trunked

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talk group audio, P25 dispatch console audio, E911 and administrative telephone lines, and conventional radio channel audio.

D. The voice logging recorder shall be redundant with master voice logging recorder installed at the primary 911 dispatch center and backup voice logging recorder installed at the backup 911 dispatch center.

E. The master and backup voice logging recorders shall remain synchronized and appear as a single voice logging recorder to the users.

F. The voice logging system shall be partitioned such that each agency's recorded data is private and cannot be accessed by other agencies.

G. The voice logging recorder shall support AES256 encryption.

4.19 P25 System Security, Backup, and Recovery Operations

A. The Contractor shall describe all security functions in their proposed radio network, particularly all anti-virus and malware protection provided to all P25 software systems.

B. Specific attention shall be paid to address security protection for servers which face the Internet or wireless LTE carrier networks.

C. The Contractor shall include the security processes and procedures necessary for both the Contractor and County personnel to maintain system security from external and internal threats.

D. The Contractor shall describe all server or other component backup and software/hardware recovery procedures necessary for recovery of all critical server or other system equipment and the description shall include any virtualized software backup procedures.

E. The Contractor shall describe how unauthorized users can be kept from obtaining or programming personalities to operate on the County's network.

F. The Contractor shall describe what mechanisms can be used to prevent and identify duplicate addresses on the Contractor's proposed networks.

G. The Contractor shall describe all components of the proposed P25 radio system that could be subject to outside security attacks and the defense remedies that it provides to a customer to protect the system.

H. The Contractor shall describe any network monitoring services it offers to customers including what specific events or conditions the service monitors, and how the user is alerted when abnormalities occur.

4.20 Contractor Reuse of P25 Capable Infrastructure Equipment

A. The Contractor may propose the reuse of components of the County's existing communications system infrastructure that are of current manufacture and can be supported in the same manner as new equipment.

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B. The reuse of any existing equipment shall be done in a manner that does not diminish the operation of the existing EDACS system or the new P25 system, or impede their ability to support critical public safety communications.

C. The Contractor shall provide in their proposal, a detailed description of the following:

   a. The proposed equipment and the components to be reused

   b. The end-of-life and the end of support schedule for the equipment

   c. A description of the loss of any functionality on the new and existing communication systems during transition

   d. The cost savings of equipment reuse verses the cost of new equipment as specified in the Pricing Sheets

D. The County shall approve in writing, the reuse of any and all equipment.

E. The Contractor shall update all firmware and software of the reused equipment to the most current version.

4.20.1 Reused Equipment Hardware Refresh

A. The Contractor shall perform a Technology Update on any reused equipment that has been in service for more than three (3) years.

B. The Contractor shall provide the County with a list of all equipment that requires a Technology Update.

C. The Technology Update shall include the replacement of critical components of the network master core systems that include the following components:

   a. Network core servers

   b. Network core storage systems

   c. Network core routers

   d. Network core switches

   e. Network firewalls

D. The Contractor shall conform to the Technology Update schedule and requirements during the maintenance period, years three (3) through 17 as required in this RFP.

4.20.2 Warranty Requirements

A. The Contractor shall warrant all equipment reused the same as “new”.

B. The Contractor shall warrant that all equipment reused shall conform to the specifications provided within this RFP, and that it shall be free from defects in materials, functionality, and workmanship for a period of at least two (2) years from the date of Final System Acceptance.

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C. The Contractor shall provide warranty support on reused equipment in compliance with the requirements of this RFP for new equipment.

4.20.3 Maintenance Requirements

A. The Contractor shall include the cost to extend the system infrastructure corrective and preventative maintenance, inclusive of the reused equipment, on an annual basis for a period of 15 years following the expiration of the Warranty period.

B. The Contractor shall propose maintenance support on reused equipment in compliance with the requirements of this RFP for new equipment.

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5. 800 MHZ P25 RADIO COVERAGE AND DESIGN REQUIREMENTS

5.1 General Requirements

A. A primary consideration in the development of the P25 standard is to enable a common air interface to facilitate communications, and thus interoperability, between systems and user equipment from disparate manufacturers.

B. Because the user equipment from disparate manufacturers will communicate on the County's new P25 system, the Contractor shall model and depict their predicted radio coverage using the technical parameters specified in this RFP.

C. It is the County's goal to achieve 97% service area reliability (SAR) for portable radios equipped with a 1/2-wave antenna, worn on the belt and operating outdoors, and 95% SAR for portable radios equipped with a 1/2-wave antenna, worn on the belt and operating within the specified buildings with a minimum Delivered Audio Quality (DAQ) of 3.4.

D. All references to coverage reliability in this document refer to SAR.

5.2 Radio Coverage Definition

A. Radio coverage is defined as the ability to successfully complete inbound (field-to-dispatch), outbound (dispatch-to-field), and radio-to-radio communications throughout the designated service area with the required minimum delivered audio quality DAQ 3.4.

B. In the TIA/EIA Technical Service Bulletin TSB-88, the Telecommunications Industry Association (TIA) defines the delivered audio quality that is a subjective numeric rating of the intelligibility of speech as described in the abbreviated DAQ Table 7 below.

Delivered Audio Quality	Subjective Performance Description
DAQ 4.0	Speech easily understood. Occasional Noise/Distortion.
DAQ 3.4	Speech understandable with repetition only rarely required. Some Noise/Distortion.
DAQ 3.0	Speech understandable with slight effort. Occasional repetition required due to Noise/Distortion.

Table 7 - Delivered Audio Quality

5.3 Radio Coverage Requirements

5.3.1 Radio System Service Area

A. The jurisdictional boundaries of Volusia County and the defined Urban Area Polygons (Figure 1) for in-building radio coverage shall define the coverage requirements for the system.

B. The Contractor shall utilize the County's shapefile of the Volusia County boundary for the preparation of all coverage prediction maps submitted by the Contractor. The shape file is located at http://maps.vcgov.org/gis/download/shapes.htm, listed under (Countywide Data) Shapefiles, County Boundary (aka vcbnd or vcbnd400).

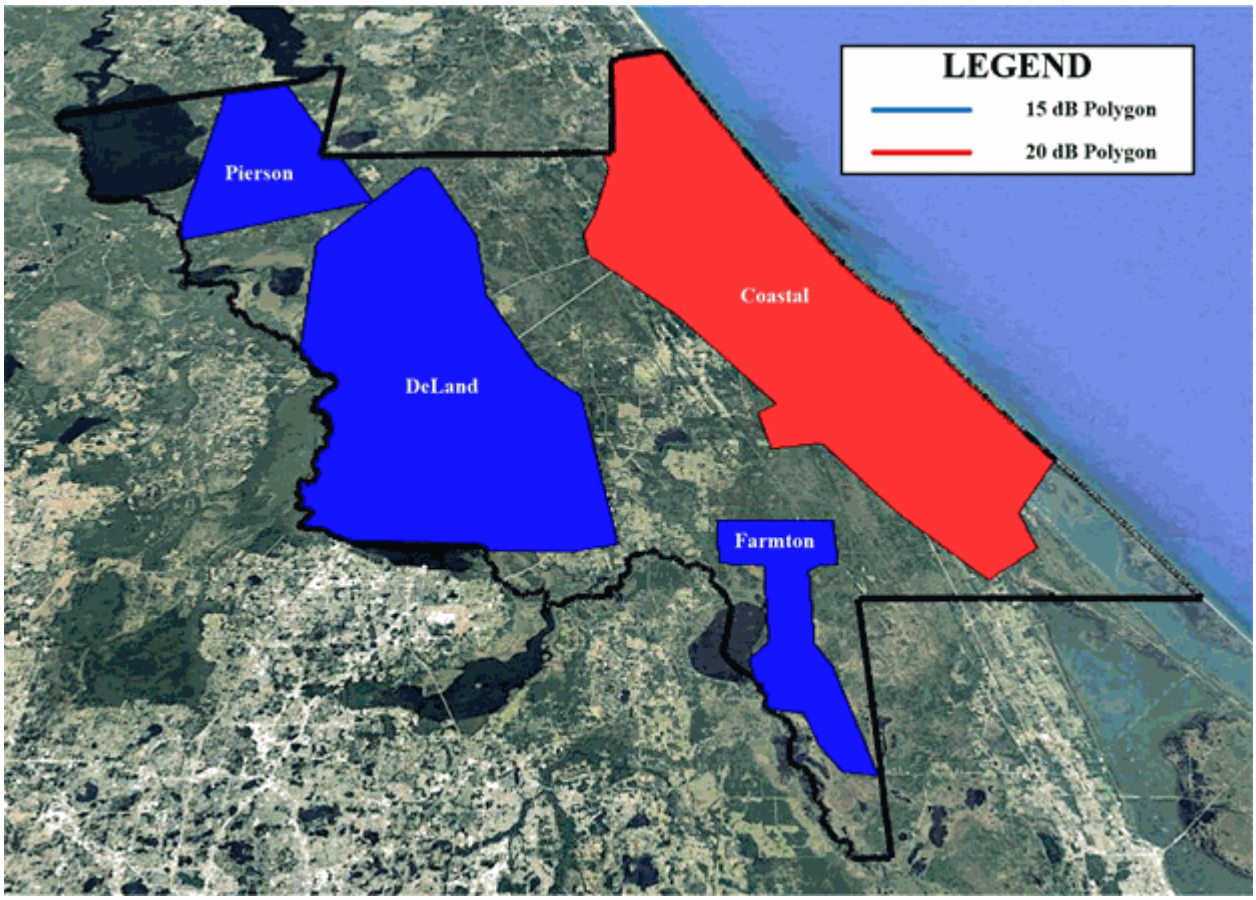

Figure 1 - Urban Area Polygons

5.3.2 Coverage Requirements

A. The Contractor's proposed system design radio coverage goal is as follows:

a. A minimum of 97% SAR for portable outdoor coverage countywide

b. A minimum of 95% SAR for portable in-building coverage utilizing the designated building loss specified for each Urban Area Polygon

5.3.3 Infrastructure System Sites and Antenna Heights

A. The antenna heights contained in Table 8 below were determined by the County and the County's technical consultant during the Needs Assessment phase of the County's project.

B. For system engineering purposes, the Contractor shall utilize the tower sites and the antenna mounting heights to the antenna base from Table 8 below.

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Tower Site	Transmit Hgt-Base AGL (ft)	Receive Hgt-Base AGL (ft)
DeBary	165	165
DeLand FDOT	267	267
De Leon Springs	285	285
Deltona	280	300
Edgewater	250	250
EOC-A	320	320
EOC-B	305	305
EVAC	298	298
Farmton Greenfield	300	320
Plantation Bay	300	320
New Smyrna Beach	180	180
Orange City	350	350
Ormond Beach	253	253
Pierson	284	284
Port Orange	284	284

Table 8 - Tower Site and Antenna Height Parameters

5.3.4 User Equipment Configuration

A. For system engineering purposes, and for the modeling and test verification of radio coverage, the Contractor shall utilize the following user equipment configurations for inbound and outbound communications:

   a. A portable radio with a 1/4-wave antenna, worn on the belt for transmit and receive with the technical parameters in Table 9 below

   b. A portable radio with a 1/2-wave antenna, worn on the belt for transmit and receive with the technical parameters in Table 9 below

   c. A mobile radio with a 1/4-wave antenna mounted in the center of the roof for transmit and receive with the technical parameters in Table 9 below

5.3.5 User Equipment Technical Parameters

A. The user equipment technical parameters specified in this RFP are generic in nature and are not based upon the technical parameters of any specific equipment.

B. The information in Table 9 below depicts the user equipment required technical parameters that the Contractor shall use for the system coverage modeling and the coverage acceptance testing.

C. Portable antenna body loss parameters are inclusive of antenna gain/loss and body shielding loss and the Contractor shall not include any other adjustments.

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P25 Mobile and Portable Radio Parameters for Calculation of Coverage				
P25 Phase 1 LSM Portable	Portable rated receiver sensitivity	-119.0	dBm	5.0% BER
	CPC DAQ 3.4	-108.5	dBm	2.0% BER
	Portable rated transmitter power	34.8	dBm	3-Watts
	Body Loss, 1/4-wave on hip at 3.3' AGL	15.4	dB	
	Adjustment for the loss of a 1/4-wave magnetic mount test antenna referenced to a 1/2-wave dipole	3.0	dB	
	Height adjustment attenuation for test vehicle at 5.0' AGL	1.3	dB	
P25 Phase 2 LSM Portable	Portable rated receiver sensitivity	-119.0	dBm	5.0% BER
	CPC DAQ 3.4	-109.9	dBm	2.4% BER
	Portable rated transmitter power	34.8	dBm	3-Watts
	Body Loss, 1/4-wave on hip at 3.3' AGL	15.4	dB	
	Adjustment for the loss of a 1/4-wave magnetic mount test antenna referenced to a 1/2-wave dipole	3.0	dB	
	Height adjustment attenuation for test vehicle at 5.0' AGL	1.3	dB	
P25 Phase 1 LSM Portable	Portable rated receiver sensitivity	-119.0	dBm	5.0% BER
	CPC DAQ 3.4	-108.5	dBm	2.0% BER
	Portable rated transmitter power	34.8	dBm	3-Watts
	Body Loss, 1/2-wave on hip at 3.3' AGL	10.3	dB	
	Adjustment for the loss of a 1/4-wave magnetic mount test antenna referenced to a 1/2-wave dipole	3.0	dB	
	Height adjustment attenuation for test vehicle at 5.0' AGL	1.3	dB	
P25 Phase 2 LSM Portable	Portable rated receiver sensitivity	-119.0	dBm	5.0% BER
	CPC DAQ 3.4	-109.9	dBm	2.4% BER
	Portable rated transmitter power	34.8	dBm	3-Watts
	Body Loss, 1/2-wave on hip at 3.3' AGL	10.3	dB	
	Adjustment for the loss of a 1/4-wave magnetic mount test antenna referenced to a 1/2-wave dipole	3.0	dB	
	Height adjustment attenuation for test vehicle at 5.0' AGL	1.3	dB	
P25 Phase 1 LSM Mobile	Mobile rated receiver sensitivity	-119.0	dBm	5.0% BER
	CPC DAQ 3.4	-108.5	dBm	2.0% BER
	Mobile rated transmitter power	44.0	dBm	25-Watts
	Adjustment for the loss of a 1/4-wave antenna referenced to a 1/2-wave dipole	3.0	dB	
P25 Phase 2 LSM Mobile	Mobile rated receiver sensitivity	-119.0	dBm	5.0% BER
	CPC DAQ 3.4	-109.9	dBm	2.4% BER
	Mobile rated transmitter power	44.0	dBm	25-Watts
	Adjustment for the loss of a 1/4-wave antenna referenced to a 1/2-wave dipole	3.0	dB	

Table 9 - P25 User Equipment Required Technical Parameters

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5.4 Simulcast Systems Contractor-Guaranteed Service Area Reliability

A. The Contractor shall state in their proposal their Contractor-Guaranteed SAR for Phase 1 FDMA and Phase 2 TDMA, for each line item depicted in Table 10 below.

B. Contractors shall assume a receiver sensitivity specification for mobile and portable equipment of -119.0 dBm for 5% BER and utilize faded CPC DAQ 3.4 outdoor target signal levels as follows:

   a. A signal level of -108.5 dBm for Phase 1 FDMA

   b. A signal level of -109.9 dBm for Phase 2 TDMA

C. Contractors shall utilize the mobile and the portable specifications as stated in Table 9.

Contractor-Guaranteed Percentage of Service Area Reliability for Radio Coverage		
	Phase 1 FDMA %	Phase 2 TDMA %
System A Service Area, Portable, 1/2-Wave on Hip at 3.3' AGL, body loss of 10.3 dB Outdoors		
System B Service Area, Portable, 1/2-Wave on Hip at 3.3' AGL, body loss of 10.3 dB Outdoors		
Coastal Polygon, Portable, 1/2-Wave on Hip at 3.3' AGL, body loss of 10.3 dB in 20 dB loss Buildings		
DeLand Polygon, Portable, 1/2-Wave on Hip at 3.3' AGL, body loss of 10.3 dB in 15 dB loss Buildings		
Pierson Polygon, Portable, 1/2-Wave on Hip at 3.3' AGL, body loss of 10.3 dB in 15 dB loss Buildings		
Farmton Polygon, Portable, 1/2-Wave on Hip at 3.3' AGL, body loss of 10.3 dB in 15 dB loss Buildings		

Table 10 - Contractor-Guaranteed Service Area Reliability for Simulcast Systems

5.5 Simulcast Systems Coverage Maps

A. The Contractor shall provide in their proposal individual coverage maps for the following radio configurations:

   a. P25 Phase 1, Contractor-Guaranteed SAR, Countywide Service Area, for both inbound and outbound communications for a mobile with a 1/4-wave antenna mounted on the roof at 5.0-feet AGL

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b. P25 Phase 2, Contractor-Guaranteed SAR, Countywide Service Area, for both inbound and outbound communications for a mobile with a 1/4-wave antenna mounted on the roof at 5.0-feet AGL

c. P25 Phase 1, Contractor-Guaranteed SAR, Countywide Service Area, outdoors for both inbound and outbound communications for a portable with a 1/2-wave antenna on hip at 3.3-feet AGL

d. P25 Phase 2, Contractor-Guaranteed SAR, Countywide Service Area, outdoors for both inbound and outbound communications for a portable with a 1/2-wave antenna on hip at 3.3-feet AGL

e. P25 Phase 1, Contractor-Guaranteed SAR, Countywide Service Area, within 10 dB loss buildings for both inbound and outbound communications for a portable with a 1/2-wave antenna on hip at 3.3-feet AGL

f. P25 Phase 2, Contractor-Guaranteed SAR, Countywide Service Area, within 10 dB loss buildings for both inbound and outbound communications for a portable with a 1/2-wave antenna on hip at 3.3-feet AGL

g. P25 Phase 1, Contractor-Guaranteed SAR, Coastal Polygon in 20 dB buildings for both inbound and outbound communications for a portable with a 1/2-wave antenna on hip at 3.3-feet AGL

h. P25 Phase 2, Contractor-Guaranteed SAR, Coastal Polygon in 20 dB buildings for both inbound and outbound communications for a portable with a 1/2-wave antenna on hip at 3.3-feet AGL

i. P25 Phase 1, Contractor-Guaranteed SAR, DeLand Polygon in 15 dB buildings for both inbound and outbound communications for a portable with a 1/2-wave antenna on hip at 3.3-feet AGL

j. P25 Phase 2, Contractor-Guaranteed SAR, DeLand Polygon in 15 dB buildings for both inbound and outbound communications for a portable with a 1/2-wave antenna on hip at 3.3-feet AGL

k. P25 Phase 1, Contractor-Guaranteed SAR, Pierson Polygon in 15 dB buildings for both inbound and outbound communications for a portable with a 1/2-wave antenna on hip at 3.3-feet AGL

l. P25 Phase 2, Contractor-Guaranteed SAR, Pierson Polygon in 15 dB buildings for both inbound and outbound communications for a portable with a 1/2-wave antenna on hip at 3.3-feet AGL

m. P25 Phase 1, Contractor-Guaranteed SAR, Farmton Polygon in 15 dB buildings for both inbound and outbound communications for a portable with a 1/2-wave antenna on hip at 3.3-feet AGL

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n. P25 Phase 2, Contractor-Guaranteed SAR, Farmton Polygon in 15 dB buildings for both inbound and outbound communications for a portable with a 1/2-wave antenna on hip at 3.3-feet AGL

o. Any areas that have less than the desired DAQ 3.4 level shall be clearly visible on the coverage maps

p. The Contractor shall consider simulcast time delay interference (TDI) zones where a high BER (less than DAQ 3.4) may be encountered and shall clearly depict these areas on their coverage maps

5.5.1 Simulcast Systems Technical Parameters

A. For the purpose of the evaluation and validation of the Contractor's proposed radio coverage, the Contractor shall furnish the following information for each map and each tower site:

a. Transmit and receive antenna models, gain, beamwidth, azimuth, downtilt, sidearm length, and mounting height referenced to base and center of radiation

b. Transmission line type and length for transmit and receive antenna systems

c. Insertion loss and gain values noted in decibels for all proposed transmit combiners, receiver multicouplers, filters, duplexers, connectors, circulators, lightning arrestors, jumper cables, attenuators, etc.

d. Transmitter power level for all base station transceivers and subscriber units

e. The effective radiated power level for each site

f. Net amplification gain for the tower top amplifier system

g. Receiver sensitivity specifications for all base station transceivers

h. The faded performance margin (Cf/(I+N)) utilized per TSB-88 for the required CPC (channel performance criterion) requirement for DAQ 3.4 and BER

i. The minimum base station RSL for DAQ 3.4 and BER

B. The Contractor shall provide in their proposal a complete schematic diagram for each transmit and receive antenna system per site noting all proposed antennas, transmission lines, tower top amplifiers, receiver multicouplers, transmit combiners, circulators, filters, connectors, etc.

C. The Contractor shall provide in their proposal product data sheets for all proposed antennas, transmission lines, tower top amplifiers, receiver multicouplers, transmit combiners, circulators, filters, connectors, attenuators, etc.

D. The coverage maps included in the proposal shall be provided to the County in 11-inch x 17-inch size, high-resolution in both printed and electronic PDF document format.

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E. Coverage maps shall indicate the County's boundaries, urban area polygons, base site locations, interstate and primary roads, and any areas of non-coverage.

5.6 EVENT System Contractor-Guaranteed Service Area Reliability

A. The Contractor shall state in their proposal their Contractor-Guaranteed SAR for Phase 1 FDMA and Phase 2 TDMA, for each line item depicted in Table 11 below.

B. Contractors shall assume a receiver sensitivity specification for mobile and portable equipment of -119.0 dBm for 5% BER and utilize faded CPC DAQ 3.4 outdoor target signal levels as follows:

a. A signal level of -108.5 dBm for Phase 1 FDMA

b. A signal level of -109.9 dBm for Phase 2 TDMA

C. Contractors shall utilize the portable specifications as stated in Table 9.

Contractor-Guaranteed Percentage of Service Area Reliability for Radio Coverage		
	Phase 1 FDMA %	Phase 2 TDMA %
The area encompassing an 8-mile radius around the EVAC tower site, Portable, 1/2-Wave on Hip at 3.3' AGL, body loss of 10.3 dB Outdoors		

Table 11 - Contractor-Guaranteed Service Area Reliability for the EVENT System

5.7 EVENT System Coverage Maps

A. The Contractor shall provide individual coverage maps in their proposal for the following radio configurations:

a. P25 Phase 1, Contractor-Guaranteed SAR, within the area encompassing an 8-mile radius around the EVAC tower site, outdoors for both inbound and outbound communications for a portable with a 1/2-wave antenna on hip at 3.3-feet AGL

b. P25 Phase 2, Contractor-Guaranteed SAR, within the area encompassing an 8-mile radius around the EVAC tower site, outdoors for both inbound and outbound communications for a portable with a 1/2-wave antenna on hip at 3.3-feet AGL

5.7.1 EVENT System Technical Parameters

A. For the purpose of the evaluation and validation of the Contractor's proposed radio coverage, the Contractor shall furnish the following information in their proposal for each map and each tower site:

a. Transmit and receive antenna models, gain, beamwidth, azimuth, downtilt, sidearm length, and mounting height referenced to base and center of radiation

b. Transmission line type and length for transmit and receive antenna systems

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c. Insertion loss and gain values noted in decibels for all proposed transmit combiners, receiver multicouplers, filters, duplexers, connectors, circulators, lightning arrestors, jumper cables, attenuators, etc.

d. Transmitter power level for all base station transceivers and subscriber units

e. The effective radiated power level for each site

f. Net amplification gain for the tower top amplifier system

g. Receiver sensitivity specifications for all base station transceivers

h. The faded performance margin (Cf/(I+N)) utilized per TSB-88 for the required CPC (channel performance criterion) requirement for DAQ 3.4 and BER

i. The minimum base station RSL for DAQ 3.4 and BER

B. The Contractor shall provide a complete schematic diagram for each transmit and receive antenna system per site noting all proposed antennas, transmission lines, tower top amplifiers, receiver multicouplers, transmit combiners, circulators, filters, connectors, etc.

C. The Contractor shall provide product data sheets for all proposed antennas, transmission lines, tower top amplifiers, receiver multicouplers, transmit combiners, circulators, filters, connectors, attenuators, etc.

D. The coverage maps shall be provided to the County in 11-inch x 17-inch size, high-resolution in both printed and electronic PDF document format.

E. Coverage maps shall indicate the County's boundaries, an eight (8) mile radius circle centered on the EVAC site, base site locations, interstate and primary roads, and any areas of non-coverage.

5.8 DeBary PSIC System Contractor-Guaranteed Service Area Reliability

A. The Contractor shall state in their proposal their Contractor-Guaranteed SAR for Phase 1 FDMA and Phase 2 TDMA, for each line item depicted in Table 12 below.

B. Contractors shall assume a receiver sensitivity specification for mobile and portable equipment of -119.0 dBm for 5% BER and utilize faded CPC DAQ 3.4 outdoor target signal levels as follows:

a. A signal level of -108.5 dBm for Phase 1 FDMA

b. A signal level of -109.9 dBm for Phase 2 TDMA

C. Contractors shall utilize the portable specifications as stated in Table 9.

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Contractor-Guaranteed Percentage of Service Area Reliability for Radio Coverage		
	Phase 1 FDMA %	Phase 2 TDMA %
The area encompassing an 8-mile radius around the DeBary tower site, Portable, 1/2-Wave on Hip at 3.3' AGL, body loss of 10.3 dB Outdoors		

Table 12 - Contractor-Guaranteed Service Area Reliability for the DeBary PSIC System

5.9 DeBary PSIC System Coverage Maps

A. The Contractor shall provide individual coverage maps in their proposal for the following radio configurations:

   a. P25 Phase 1, Contractor-Guaranteed SAR, within the area encompassing an 8-mile radius around the DeBary tower site, outdoors for both inbound and outbound communications for a portable with a 1/2-wave antenna on hip at 3.3-feet AGL

   b. P25 Phase 2, Contractor-Guaranteed SAR, within the area encompassing an 8-mile radius around the DeBary tower site, outdoors for both inbound and outbound communications for a portable with a 1/2-wave antenna on hip at 3.3-feet AGL

5.9.1 DeBary PSIC System Technical Parameters

A. For the purpose of the evaluation and validation of the Contractor's proposed radio coverage, the Contractor shall furnish the following information in their proposal for each map and each tower site:

   a. Transmit and receive antenna models, gain, beamwidth, azimuth, downtilt, sidearm length, and mounting height referenced to base and center of radiation

   b. Transmission line type and length for transmit and receive antenna systems

   c. Insertion loss and gain values noted in decibels for all proposed transmit combiners, receiver multicouplers, filters, duplexers, connectors, circulators, lightning arrestors, jumper cables, attenuators, etc.

   d. Transmitter power level for all base station transceivers and subscriber units

   e. The effective radiated power level for each site

   f. Net amplification gain for the tower top amplifier system

   g. Receiver sensitivity specifications for all base station transceivers

   h. The faded performance margin (Cf/(I+N)) utilized per TSB-88 for the required CPC (channel performance criterion) requirement for DAQ 3.4 and BER

   i. The minimum base station RSL for DAQ 3.4 and BER

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B. The Contractor shall provide a complete schematic diagram for each transmit and receive antenna system per site noting all proposed antennas, transmission lines, tower top amplifiers, receiver multicouplers, transmit combiners, circulators, filters, connectors, etc.

C. The Contractor shall provide product data sheets for all proposed antennas, transmission lines, tower top amplifiers, receiver multicouplers, transmit combiners, circulators, filters, connectors, attenuators, etc.

D. The coverage maps shall be provided to the County in 11-inch x 17-inch size, high-resolution in both printed and electronic PDF document format.

E. Coverage maps shall indicate the County's boundaries, an eight (8) mile radius circle centered on the DeBary site, base site locations, interstate and primary roads, and any areas of non-coverage.

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6. FSA 800 MHZ RADIO COVERAGE AND DESIGN REQUIREMENTS

6.1 General Requirements

A. The Contractor shall model and depict their predicted FSA 800 MHz simulcast radio coverage using the technical parameters specified in this section of the RFP.

B. The Contractor shall state their guaranteed SAR for 800 MHz control station radios equipped per the parameters depicted in this section, based upon a minimum DAQ of 3.4.

6.2 Radio Coverage Definition

A. Radio coverage is defined as the ability to successfully complete outbound communications throughout the designated service area with the required minimum delivered audio quality of DAQ 3.4.

6.3 Radio Coverage Requirements

6.3.1 Radio System Service Area

A. The jurisdictional boundaries of Volusia County shall define the coverage requirements for the FSA system.

C. The Volusia County boundary shapefile specified in section 5.3.1 Radio System Service Area shall be utilized for the preparation of all coverage prediction maps submitted by the Contractor. The shape file is located at http://maps.vcgov.org/gis/download/shapes.htm, listed under (Countywide Data) Shapefiles, County Boundary (aka vcbnd or vcbnd400).

6.3.2 FSA Coverage Requirements

A. The Contractor shall state their guaranteed SAR for tone alerting and voice transmissions to control station radios equipped with tone decoders and operating per the parameters described in this section, with a minimum DAQ of 3.4.

a. A minimum of 97% reliability for control station coverage countywide

6.3.3 Infrastructure System Sites and Antenna Heights

A. For system engineering purposes, the Contractor shall utilize the tower sites and antenna mounting heights to the antenna base from Table 13 below.

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Tower Site	Transmit	Receive
	Hgt-Base AGL (ft)	Hgt-Base AGL (ft)
Edgewater	225	245 INV
EVAC	260	280
Orange City	322	350 INV
Pierson	275	255 INV
Port Orange	255 INV	EDACS Rx MC
EOC-B	300 INV	None

Table 13 - Sites and Antenna Height Parameters for 800 MHz FSA

6.3.4 User Equipment Configuration

A. For system engineering purposes, and for the modeling and test verification of radio coverage, the Contractor shall utilize the following user equipment configuration for outbound communications.

a. A control station radio installed in fire stations countywide and equipped per the parameters described in this section, for reception of tone alerting and DAQ3.4 voice transmissions with the technical parameters depicted in Table 14 below.

6.3.5 User Equipment Technical Parameters

A. The user equipment technical parameters specified in this RFP are generic in nature and are not based upon the technical parameters of any specific equipment.

B. The information in Table 14 below depict the user equipment required technical parameters that the Contractor shall use for the system coverage modeling and the coverage acceptance testing.

800 MHz FSA Control Station Equipment Parameters for Calculation of Coverage				
800 MHz FSA	Receiver rated sensitivity	-119.0	dBm	12 dB SINAD
	CPC DAQ 3.4	-103.0	dBm	DAQ 3.4
	3-element yagi antenna at 15' AGL, Laird Y8063 or equivalent	6.0	dBd	Gain
	50' 1/2-inch LDF and connectors	2.5	dB	Loss
	Adjustment for the loss of a 1/4-wave test antenna referenced to a 1/2-wave dipole	3.0	dB	Add
	Height adjustment for test vehicle at 5.0' AGL	6.5	dB	Add

Table 14 - FSA User Equipment Required Technical Parameters

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6.4 Contractor-Guaranteed Service Area Reliability

A. The Contractor shall state in their proposal the Contractor-Guaranteed SAR for the FSA system as depicted in Table 15 below.

B. Contractors shall assume a receiver sensitivity specification for the control station equipment of -119.0 dBm for 12 dB SINAD and utilize faded CPC DAQ 3.4 target signal level as follows:

   a. A signal level of -103.0 dBm for a 25 kHz bandwidth, 800 MHz analog channel

C. Contractors shall utilize the equipment specifications as stated in Table 14.

800 MHz FSA Radio Coverage Contractor-Guaranteed Percentage of Service Area Reliability	
	SAR %
Talk out to a control station receiver, 6 dBd gain yagi antenna at 15.0' AGL, and 2.5 dB of line loss	

Table 15 - Contractor-Guaranteed FSA Service Area Reliability

6.5 Coverage Maps

A. The Contractor shall provide individual coverage maps in their proposal for the following radio configurations:

   a. 800 MHz FSA, Contractor-Guaranteed SAR, Countywide Service Area, for outbound communications to a control station receiver with a 6 dBd gain yagi antenna mounted on the roof of a fire station at 15.0-feet AGL

   b. Any areas that have less than the desired DAQ 3.4 levels shall be clearly visible on the coverage map

   c. The Contractor shall consider simulcast audio distortion zones where high audio distortion (less than DAQ 3.4) may be encountered and shall clearly depict these areas on their coverage map

6.5.1 Technical Parameters

A. For the purpose of the evaluation and validation of the Contractor's proposed radio coverage, the Contractor shall furnish the following information in their proposal for each map and each tower site:

   a. Transmit and receive antenna models, gain, beamwidth, azimuth, downtilt, sidearm length, and mounting height referenced to base and center of radiation

   b. Transmission line type and length for transmit and receive antenna systems

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c. Insertion loss and gain values noted in decibels for all proposed transmit combiners, receiver multicouplers, filters, duplexers, connectors, circulators, lightning arrestors, jumper cables, attenuators, etc.

d. Transmitter power level for all base station transceivers

e. The effective radiated power level for each site

f. The faded performance margin (Cf/(I+N)) utilized per TSB-88 for the required CPC (channel performance criterion) requirement for a DAQ 3.4

B. The Contractor shall provide a complete schematic diagram for each antenna system per site noting all proposed antennas, transmission lines, transmit combiners, circulators, filters, connectors, etc.

C. The Contractor shall provide product data sheets for all proposed antennas, transmission lines, transmit combiners, circulators, filters, connectors, attenuators, etc.

D. The coverage map shall be provided to the County in 11-inch x 17-inch size, high-resolution in both printed and electronic PDF document format.

E. Coverage map shall indicate the County's boundaries, base site locations, interstate and primary roads, and any areas of non-coverage.

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7. RMACS AND VHF RADIO COVERAGE AND DESIGN REQUIREMENTS

7.1 General Requirements

A. The Contractor shall model and depict their predicted VHF Fire Paging and RMACS 800 MHz radio coverage using the technical parameters specified in this section of the RFP.

B. The Contractor shall state their guaranteed SAR for VHF Fire Paging and 800 MHz mobile radios equipped per the parameters depicted in this section and operating outdoors, based upon a minimum DAQ of 3.0.

7.2 Radio Coverage Definition

A. Radio coverage is defined as the ability to successfully complete inbound, outbound, and radio-to-radio communications throughout the designated service area with the required minimum delivered audio quality of DAQ 3.0.

B. In the TIA/EIA Technical Service Bulletin TSB-88, the Telecommunications Industry Association (TIA) defines the delivered audio quality that is a subjective numeric rating of the intelligibility of speech as described in the abbreviated DAQ Table 16 below.

Delivered Audio Quality	Subjective Performance Description
DAQ 4.0	Speech easily understood. Occasional Noise/Distortion.
DAQ 3.4	Speech understandable with repetition only rarely required. Some Noise/Distortion.
DAQ 3.0	Speech understandable with slight effort. Occasional repetition required due to Noise/Distortion.

Table 16 - Delivered Audio Quality

7.3 Radio Coverage Requirements

7.3.1 Radio System Service Area

A. The jurisdictional boundaries of Volusia County shall define the coverage requirements for these systems.

B. The Volusia County boundary shapefile specified in section 5.3.1 Radio System Service Area shall be utilized for the preparation of all coverage prediction maps submitted by the Contractor. The shape file is located at http://maps.vcgov.org/gis/download/shapes.htm, listed under (Countywide Data) Shapefiles, County Boundary (aka vcbnd or vcbnd400).

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7.3.2 VHF Fire Paging and Fire Station Alerting Coverage Requirements

A. The Contractor shall state their guaranteed SAR for tone alerting and voice transmissions, for VHF Minitor VI pagers operating per the parameters described in this section, worn on the belt, and operating outdoors, with a minimum DAQ of 3.0.

   a. A minimum of 95% reliability for pager outdoor coverage countywide

B. The Contractor shall state their guaranteed SAR for tone alerting and voice transmissions, for Federal Informer VHF Monitor receivers operating per the parameters described in this section, installed at Fire Stations with a minimum DAQ of 3.0.

   a. A minimum of 95% reliability for fire station alerting countywide

7.3.3 800 MHz RMACS Coverage Requirements

A. The Contractor shall state their guaranteed SAR for an 800 MHz mobile radio equipped per the parameters described in this section, with a minimum DAQ of 3.0.

   a. A minimum of 95% reliability for mobile coverage countywide

7.3.4 Infrastructure System Sites and Antenna Heights

A. For system engineering purposes, the Contractor shall utilize the tower sites and antenna mounting heights to the antenna base from Table 17 and Table 18 below.

Tower Site	Transmit Hgt-Base AGL (ft)
Edgewater	250
EOC-A	280
Orange City	350
Pierson	284
Port Orange	110

Table 17 - Sites and Antenna Height Parameters for VHF Paging

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Tower Site	Transmit Hgt-Base AGL (ft)	Receive Hgt-Base AGL (ft)
Edgewater	225	245 INV
EVAC	260	280
Orange City	322	350 INV
Pierson	275	255 INV
Port Orange	255 INV	EDACS Rx MC
EOC-B	300 INV	None

Table 18 - Sites and Antenna Height Parameters for 800 MHz RMACS

7.3.5 User Equipment Configuration

A. For system engineering purposes, and for the modeling and test verification of radio coverage, the Contractor shall utilize the following user equipment configurations for inbound and outbound communications.

a. For VHF Fire Paging - A tone and voice, VHF pager equipped per the parameters described in this section, worn on the belt for reception of tone alerting and DAQ3.0 voice audio with the technical parameters in Table 19 below.

b. For 800 MHz RMACS Channels - An 800 MHz mobile radio with a 1/4-wave antenna mounted in the center of the roof for transmit and receive with the technical parameters in Table 20 below.

7.3.6 User Equipment Technical Parameters

A. The user equipment technical parameters specified in this RFP are generic in nature and are not based upon the technical parameters of any specific equipment.

B. The information in Table 19 and Table 20 below depict the user equipment required technical parameters that the Contractor shall use for the system coverage modeling and the coverage acceptance testing.

C. Portable antenna body loss parameters are inclusive of antenna gain/loss and body shielding loss and the Contractor shall not include any other adjustments.

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VHF Pager and Fire Station Alerting Equipment Parameters for Calculation of Coverage				
VHF Pager	Pager rated receiver alerting sensitivity on body at hip level (4.5 uV/m)	-106.0	dBm	Alerting
	Alerting Sensitivity to 12dB SINAD Adjustment	10.0	dBm	12 dB SINAD
	Receive signal required for DAQ 3.0 voice	-80.0	dBm	Voice
	Adjustment for the loss of a 1/4-wave magnetic mount test antenna referenced to a 1/2-wave dipole	3.0	dB	Add
	Height adjustment attenuation for test vehicle at 5.0' AGL	1.3	dB	Subtract
VHF Fire Station Alerting	Receiver rated sensitivity	-116.0	dBm	12 dB SINAD
	CPC DAQ 3.0	-100.0	dBm	17 dB SINAD
	3-element yagi antenna at 15' AGL, DB230 or similar	7.0	dBd	Gain
	50' 1/4-inch Superflex and connectors	1.5	dB	Loss
	Adjustment for the loss of a 1/4-wave antenna referenced to a 1/2-wave dipole	3.0	dB	Add
	Height adjustment attenuation for test vehicle at 5.0' AGL	7.6	dB	Add

Table 19 - VHF Pager and FSA User Equipment Required Technical Parameters

800 MHz Analog Mobile Equipment Parameters for Calculation of Coverage				
RMACS 800 MHz Mobile	Mobile rated receiver sensitivity	-119.0	dBm	12 dB SINAD
	CPC DAQ 3.0	-105.0	dBm	17 dB SINAD
	Mobile rated transmitter power	44.0	dBm	25-Watts
	Adjustment for the loss of a 1/4-wave antenna referenced to a 1/2-wave dipole	3.0	dB	Add

Table 20 – 800 MHz Analog User Equipment Required Technical Parameters

7.4 Contractor-Guaranteed Service Area Reliability

A. The Contractor shall state in their proposal the Contractor-Guaranteed SAR for the VHF and RMACS systems, for each line item depicted in Table 21and Table 22 below.

B. For the VHF Paging, Contractors shall assume a receiver alerting sensitivity specification of 4.5 uV/m and utilize faded CPC DAQ 3.0 outdoor target signal levels as follows:

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a. A signal level of -80.0 dBm for 12.5 kHz VHF Paging (Minitor VI)

b. A signal level of -100.0 dBm for 12.5 kHz VHF FSA (Federal Informer)

C. For the RMACS, Contractors shall assume a receiver sensitivity specification for mobile and portable equipment of -119.0 dBm for 12 dB SINAD and utilize faded CPC DAQ 3.0 outdoor target signal levels as follows:

a. A signal level of -105.0 dBm for 20 kHz RMACS

D. Contractors shall utilize the equipment specifications as stated in Table 19 and Table 20.

VHF Paging and VHF FSA Radio Coverage Contractor-Guaranteed Percentage of Service Area Reliability	
	SAR %
Talk out to a Minitor VI pager on Hip at 3.3' AGL, Outdoors	
Talk out to a Federal Informer receiver, yagi antenna at 15.0’ AGL, 7dB gain antenna and 1.5 dB line loss	

Table 21 - Contractor-Guaranteed VHF Paging and VHF FSA Service Area Reliability

RMACS Radio Coverage Contractor-Guaranteed Percentage of Service Area Reliability	
	SAR %
Talk out to an 800 MHz Portable, 1/2-Wave on Hip at 3.3' AGL, body loss of 10.3 dB Outdoors	
Talk back from an 800 MHz Portable, 1/2-Wave on Hip at 3.3' AGL, body loss of 10.3 dB Outdoors	
Talk out to an 800 MHz Mobile, ¼-Wave Whip on Roof at 5.0’ AGL, antenna and line loss of 3.0 dB	
Talk back from an 800 MHz Mobile, ¼-Wave Whip on Roof at 5.0’ AGL, antenna and line loss of 3.0 dB	

Table 22 - Contractor-Guaranteed RMACS Service Area Reliability

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7.5 Coverage Maps

A. The Contractor shall provide individual coverage maps in their proposal for the following radio configurations:

a. VHF Paging, Contractor-Guaranteed SAR, Countywide Service Area, outdoors for outbound communications for a Minitor VI on the hip at 3.3-feet AGL

b. VHF FSA, Contractor-Guaranteed SAR, Countywide Service Area, outdoors for outbound communications for a Federal Informer receiver with a 7 dB gain yagi antenna mounted on the roof at 15.0-feet AGL

c. RMACS, Contractor-Guaranteed SAR, Countywide Service Area, outdoors for both inbound and outbound communications for a portable with a 1/2-wave antenna on hip at 3.3-feet AGL

d. RMACS Contractor-Guaranteed SAR, Countywide Service Area, for both inbound and outbound communications for a mobile with a 1/4-wave antenna mounted on the roof at 5.0-feet AGL

e. Any areas that have less than the desired DAQ 3.0 levels shall be clearly visible on the coverage maps

f. The Contractor shall consider simulcast audio distortion zones where high audio distortion (less than DAQ 3.0) may be encountered and shall clearly depict these areas on their coverage maps

7.5.1 Technical Parameters

A. For the purpose of the evaluation and validation of the Contractor's proposed radio coverage, the Contractor shall furnish in their proposal the following information for each map and each tower site:

a. Transmit and receive antenna models, gain, beamwidth, azimuth, downtilt, sidearm length, and mounting height referenced to base and center of radiation

b. Transmission line type and length for transmit and receive antenna systems

c. Insertion loss and gain values noted in decibels for all proposed transmit combiners, receiver multicouplers, filters, duplexers, connectors, circulators, lightning arrestors, jumper cables, attenuators, etc.

d. Transmitter power level for all base station transceivers and subscriber units

e. The effective radiated power level for each site

f. Net amplification gain for the tower top amplifier system

g. Receiver sensitivity specifications for all base station transceivers

h. The faded performance margin (Cf/(I+N)) utilized per TSB-88 for the required CPC (channel performance criterion) requirement for a DAQ 3.0

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B. The Contractor shall provide a complete schematic diagram for each transmit and receive antenna system per site noting all proposed antennas, transmission lines, tower top amplifiers, receiver multicouplers, transmit combiners, circulators, filters, connectors, etc.

C. The Contractor shall provide product data sheets for all proposed antennas, transmission lines, tower top amplifiers, receiver multicouplers, transmit combiners, circulators, filters, connectors, attenuators, etc.

D. The coverage maps shall be provided to the County in 11-inch x 17-inch size, high-resolution in both printed and electronic PDF document format.

E. Coverage maps shall indicate the County's boundaries, base site locations, interstate and primary roads, and any areas of non-coverage.

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8. DISPATCH CONSOLE REQUIREMENTS

A. The Contractor shall thoroughly understand the current dispatch console operations and functionality to maintain the current level of functionality when implementing the new dispatch console system and equipment.

B. The Contractor shall provide full-featured wireline dispatch console operator positions and equipment with AES256 encryption at the primary EOSCC Dispatch Center, the EOC Operations room, and at 49 Keyton Drive in the Radio Services room.

C. The Contractor shall provide new software based dispatch console applications with AES256 encryption on County computers at dispatch console operator positions at the Backup Dispatch Center.

8.1 EOSCC Primary Dispatch Center

A. The Contractor shall replace the existing dispatch console positions and install 38 new dispatch console positions. Thirty-five (35) consoles will be installed in the Dispatch Center, two (2) consoles will be installed in the EOC Operations room, and one (1) console will be installed at 49 Keyton Drive in Radio Services room.

B. The Contractor shall utilize the existing UPS-protected outlets currently powering the current dispatch consoles for the new dispatch consoles.

C. The Contractor shall be responsible for any electrical upgrades required should the electrical configuration of the existing outlets not be suitable for the Contractor's design.

D. The pre-bid site visits will include the EOSCC and the Contractor shall be responsible for ensuring that an adequate number of outlets and circuits are present to support their equipment needs.

E. The Contractor shall install the supporting equipment for the dispatch consoles in the County's IT equipment room at the EOSCC.

F. The Contractor shall furnish and install the appropriate auxiliary and interface components to connect the conventional analog resources to the P25 system.

8.2 Backup Dispatch Center

A. The Contractor shall replace the existing software based dispatch console positions and install eleven (11) new software based dispatch console positions.

   a. The County will provide the required computers as dictated by the selected Contractor's specifications

   b. The Contractor shall provide their requirements and technical specifications for the County-provided computers in their proposals

B. The Contractor shall furnish and install the new software based dispatch console applications onto County-provided computers.

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C. The Contractor shall replace the existing eleven (11) standalone backup control station radios with P25 Phase 2 radios with encryption.

   a. The Contractor shall test and reuse the existing control station antenna combiner system and antennas

8.3 General

A. The County will utilize the existing dispatch furniture at all dispatch locations that are a part of this Project.

B. The LCD display for the dispatch consoles shall be a 22-inch, touch-screen model, and be installed into the existing support structures.

C. Operators shall be able to perform all functions through the graphical user interface (GUI).

D. The GUI shall be designed so that the number of items which will appear on the screen at a given time shall be minimized thereby reducing the potential distractions to the operators.

E. Operators shall not be required to access another screen display in order to perform a radio dispatch function.

F. The console electronics shall use a distributed IP based multi-processor concept and shall employ a physical architecture that consists of servers, routers, LAN/WAN equipment, conventional channel interfaces, instant recall recorder, and dispatch operator positions.

G. The GUI shall be flexible allowing authorized personnel to determine which functions are available at each operator position, which channels are available, how these channels appear on the screen and the names associated with channels, channel options, auxiliary functions, and indicators.

H. The console shall support a minimum of 1024 resource modules, one hundred (100) audio sessions, and the Contractor must identify the number of Simul-select patches supported.

I. Each channel or auxiliary function shall be referenced by alphanumeric characters, not numeric only or cryptic references.

J. For personnel safety and equipment protection, all console equipment shall be grounded to the local building ground system.

K. The Contractor shall coordinate the location of the equipment ground with the County.

L. The Contractor shall provide any other equipment racks, grounding and bonding, and miscellaneous hardware and components required for completion of the dispatch console/backup radio installation.

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M. The County's Division 27 document is a document that governs cabling in IT environments including the EOSCC IT equipment room and the Backup Dispatch Center. Exhibit A.5 - Technology Systems Design and Installation Guidelines (Division 27).

8.4 Dispatch Center Timing/Synchronization

A. The Contractor shall provide a new redundant time synchronization system so that all systems are synchronized to a common time source.

B. The County systems that require connection to the system include the following:

   a. Dispatch console systems

   b. CAD/RMS systems

   c. Voice logging recorder systems

   d. Clocks

C. The Contractor shall work with the County and shall be responsible for interfacing to the new time synchronization system so that all systems are synchronized to a common time source.

D. The Contractor shall be responsible for interfacing the dispatch console system to the County's Computer Aided Dispatch time synchronization system so that all time-sensitive systems are synchronized to a common time source.

E. The Contractor may use the existing wiring and cabling if it is suitable for use with their equipment.

8.5 Console Common Electronics Equipment

A. The common console electronics equipment such as servers, routers, external hard drives, conventional interface units and LAN/WAN equipment shall be installed in equipment racks within the County's IT equipment room at the EOSCC, and within the back equipment room at the Sheriff's Office IT facility.

B. Space shall be provided for front and rear servicing of the equipment.

C. The Contractor shall provide scaled layout drawings in their proposal, for the proposed electronics equipment and associated hardware.

D. The Contractor shall work with the County's personnel to identify the final location for the installation of the console common equipment racks if necessary.

E. Figure 2 below depicts the equipment cabinets installed in the EOSCC IT equipment room.

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Figure 2 - EOSCC County IT Room Cabinets

8.6 Console System Interfaces

A. The dispatch console electronics equipment shall provide interface to the following subsystems:

a. Voice Logging Recorder Interface

b. Conventional Channel Interface

c. Call Director telephone headset audio

8.6.1 Aux I/O Functions

A. Currently there are no Aux I/O connections to the dispatch consoles at either dispatch facility.

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B. The County does not foresee the need for Aux I/O systems at either dispatch facility so the Contractor shall not include this equipment in their proposal unless required by the Contractor to meet other requirements of this RFP.

8.6.2 Conventional Channel Interface

A. At the EOSCC Primary Dispatch Center, the console system shall be connected to conventional channel interfaces or "gateways" that will facilitate the interface of analog resources.

B. The console systems shall support conventional analog interfaces to facilitate communications interoperability with a variety of outside agencies and local interface technologies.

C. At a minimum, the gateways shall support various radio channel interfaces and shall be capable of 2-wire and 4-wire audio and tone and E&M for local control of radio channels, and provide local control for analog resources such as FIN, control station radios, and the VHF Fire Paging repeater.

D. The Conventional Channel Interface shall provide the tone control functionality to enable the "Repeater Disable" and "Repeater Enable" functions.

E. At the EOSCC Primary Dispatch Center, the Contractor shall provide eight (8) additional conventional channel interface ports to facilitate the interface of future analog resources.

8.7 Agency Partitioning

A. The console system shall allow multiple agencies to share a common system while maintaining full control over and functional operation of their respective resources.

8.8 Centralized Fault Management Network

A. The console system shall provide for robust system fault management from a centralized location. Secondary remote fault management from an alternate location shall also be provided.

B. Primary network management consoles shall be provided at two (2) County locations:

a. The IT computer room at the EOSCC

b. The EOC-A Control Point equipment room at 49 Keyton Drive, Daytona Beach, Florida

C. Access to the fault management system shall be protected from unauthorized access without proper credentials and security clearances.

D. The Contractor shall include descriptions in their proposal of failure scenarios and discuss all redundant features and the time to accomplish switchovers.

E. Redundancy and resiliency may be accomplished through IP-based and/or Ethernet-based technology.

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8.9 Loss of Console LAN

A. The Primary and Backup dispatch centers will each be collocated with a geo-redundant master core equipment site.

B. A loss of connectivity to the wide area trunked simulcast system network shall provide a clear indication of a network failure to console operators and supervisors so that they may take appropriate action to implement their backup systems.

8.10 Diagnostics

A. The console system shall be equipped with a number of diagnostic subsystems that shall continuously monitor and verify the correct operation.

B. Diagnostic capability shall be distributed among independent and redundant subsystems and shall not rely on one central diagnostic circuit.

C. Redundant equipment shall be automatically activated, and diagnostic information shall be logged.

D. Diagnostic messages shall be presented in an easy to read format.

E. Diagnostic systems that require a cross-reference of an error code to a fault message shall not be acceptable.

8.11 End-to-End Encryption

A. The console systems shall provide a high level of security by supporting end-to-end AES256 encryption of selected talk groups that are configured for encrypted operation.

8.12 Console Patching

A. The dispatch console system shall be capable of patching multiple P25 trunked and/or conventional channel resources.

B. The dispatch console system shall be capable and equipped to enable the setup and storage of a minimum of twenty-four (24) unique patch scenarios.

C. The dispatch console system shall at a minimum, support twelve (12) active patches from each dispatch operator position.

D. The Contractor shall specify the total number of patches, on a temporary or permanent basis, that may be established from each operator position and the total number of patches supported by the system.

E. The dispatch console system shall provide for the flexible patching of talk groups without the need for “double vocoding” of talk groups.

F. A patching window will identify all defined patches and patches in active operation at any moment.

G. All channel modules shall provide a displayed indication when a talk group or channel is involved in a patch.

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H. The dispatch console patch function shall support the patching of trunked talk groups to conventional channel and analog resources.

I. It is essential that the communication resources to be patched within the system occur with as little delay as possible in bringing the patched system to a transmit ready state.

J. It is desired that an access time of less 250 milliseconds be accomplished for each patch to minimize the loss of words and syllables.

K. The Contractor shall discuss the method to be used to begin setup of the patched system while a primary system voice transmission channel is being setup by the trunked radio system network control.

L. In addition, it is desirable that there be no unnecessary hang time at the end of any transmission after a radio user releases their transmit key.

8.13 Channel Control Requirements

A. Each channel control window shall contain the specific command buttons and indicators required to control the corresponding base station/P25 talk group.

B. Each channel control window shall be supplied with the following minimum functions and features:

a. Name - an alphanumeric name of a channel or talk group

b. Call indicator - flashes when receive activity is present

c. Transmit indicator - illuminated whenever channel is keyed; including keying from a parallel remote control point or parallel console position

d. Repeater Enabled/Repeater Disabled for conventional resources

C. The following control functions shall be provided by on screen command buttons:

a. Transmit - provides independent and direct keying of a channel

b. Mute - mutes the individual channel to a predetermined level without affecting other channels. Once muted, the channel shall remain muted until unmuted by the console operator or it shall automatically unmute if the channel is selected. When deselected, it shall revert back to the muted condition

c. Select - routes the channel audio to selected speaker output and allows the channel to be keyed via the system transmit function or foot pedal. Any previously selected channel returns to unselected status

d. Repeater Disable - Disables the repeat function of conventional tone-controlled conventional base station repeaters such as the NPSPAC Mutual Aid repeaters

e. Repeater Enable - Enables the repeat function of conventional tone-controlled conventional base station repeaters such as the NPSPAC Mutual Aid repeaters

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D. The Contractor shall determine the station control configuration of the County's current equipment, including frequency assignments, conventional paging and signaling, method of control, multiple frequency, and/or multiple receiver stations, etc. and ensure that the proposed dispatch equipment support these existing configurations and capabilities.

8.14 Common Dispatch Console Functions

A. Each of the radio dispatch consoles shall provide all controls that apply to the various channel/talk groups and auxiliary functions for the console.

B. Operator positions shall be PC-based, utilizing equipment that is in current production at the time the system is staged to provide a long equipment support life.

   a. The Contractor proposal shall include this equipment in Exhibit H End of Manufacture/End of Maintenance Support in this RFP.

C. The operator position application shall be Microsoft Windows based.

D. The Contractor shall identify the proposed version of operating system and provide a description of the computer equipment proposed for the Project.

E. Contractors shall include in their response their ability to provide the following features and functions as described in 8.14.1 through 8.14.49.

8.14.1 User Login Accounts

A. Each operator position and supervisory position shall require a valid user login and security password to access the console system and its capabilities.

B. The system shall provide multiple levels of access security for different levels of system usage.

8.14.2 Network Link Failure

A. The console system shall notify the operator and associated supervisory positions of a network link failure between the operator position and the console network control system and between the console network control system and the P25 network control system.

8.14.3 Loss of Wide Area Trunking/Failsoft

A. The console system shall notify the operator and associated supervisory positions of a system failure indicating a loss of wide area trunking and a failsoft condition if applicable.

8.14.4 Supervisory Control

A. The Supervisors' consoles shall provide takeover control to prevent other dispatch consoles from keying repeaters or base stations for each channel supported by parallel consoles.

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B. Supervisory consoles shall be capable of overriding transmissions from other consoles and field units.

8.14.5 Full Duplex

A. The console shall operate in the full duplex mode on properly equipped conventional channel resources and the P25 trunked system so that a dispatcher can simultaneously transmit and receive on duplex RF channels without having to release the transmit function.

B. The console shall operate in the full duplex mode even when headsets are not being used as long as the speakers are not configured to mute during dispatcher PTTs.

8.14.6 Dispatch Console Priority

A. All the P25 trunked channels and all conventional channels shall be properly equipped and capable of supporting console priority.

B. The console shall have wireline priority over a field unit and shall have the capability to preempt the field unit's repeat transmit audio from the system.

8.14.7 Select Speaker

A. Each operator position shall be equipped with one (1) select speaker and shall provide audio from the selected channels/P25 talk groups, with an independent volume control.

B. A volume level display shall be provided for each channel; as well as a select speaker audio level adjustment that ranges from silent to full volume.

8.14.8 Unselect Speaker

A. Each operator position shall be equipped with a minimum of one (1) unselect speaker and shall provide audio from unselected channels/ P25 talk groups, with an independent volume control for the unselect speaker.

B. A volume level display shall be provided for each channel; as well as an unselect speaker audio level adjustment that ranges from silent to full volume.

8.14.9 Unselect Audio Mute

A. A timed unselect muting function shall be provided that reduces the audio level of all unselected channels to a predetermined level for a programmed period of time.

8.14.10 Speaker Volume Controls

A. Volume controls shall be provided for control of each speaker.

8.14.11 Individual Volume Adjust

A. This function shall be provided for each talk group or channel on the console.

B. Associated status indicators shall continuously show whether the channel is in the full or adjustable volume mode.

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C. The volume shall revert to normal level when placed in select status and volume is adjusted by the Select Audio volume control.

8.14.12 Instant Recall Recorder

A. Each console operator position shall be equipped with an Instant Recall recorder that is integrated into the radio system console.

8.14.13 Headset and Jacks

A. Two (2) headset jacks per operator position shall be installed at locations convenient to the operator.

B. The headset jacks shall support both 4-wire and 6-wire configurations and be configured during installation.

C. When a headset is inserted into the jack, the operator shall have the capability of routing selected audio to the headset and/or selected speaker.

D. Audio from the unselected channels shall remain routed to the unselected speaker output.

E. The selected speaker audio shall operate normally with the headset removed from its associated jack or when telephone audio is routed to the headset.

F. Individual headset volume controls for radio and telephone audio shall be provided and shall not affect the volume control setting of the selected speaker.

8.14.14 Microphone

A. A high quality desktop microphone having a uniform frequency response and a minimum front-to-back discrimination of 15 dB shall be provided at each operator position.

B. The microphone shall be resistant to interference, such as transmitting hum from lights and other devices used in the proximity of the console.

C. Final selection of microphone types shall be determined during the preliminary design review.

8.14.15 Footswitch

A. Each console operator position shall be equipped with two (2) individual footswitches.

B. The unit shall have a dual pedal footswitch for push-to-talk (PTT) of the selected channel(s) and for enabling CTCSS monitoring for properly equipped conventional channels.

C. The footswitch shall be heavy duty, designed for public safety use, and shall be designed so as not to skid on a smooth flooring surface.

8.14.16 Transmit PTT

A. A color-coded transmit function to control the PTT function for the selected transmitters and/or talk groups shall be provided on the screen or user interface.

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B. The PTT function shall be capable of being enabled by a PTT button on the headset, a PTT indication on the LCD display, and by the foot switch at the position.

8.14.17 Instant Transmit

A. Each operator position including supervisors shall provide an instant transmit function that will allow the dispatcher to quickly transmit on a conventional channel or talk group resource by depressing the instant transmit "button".

8.14.18 Busy Tone

A. A visible and audible alert shall be initiated at the console if the dispatcher attempts to make a call and all trunked channels are busy.

B. When the channel becomes available, the console shall automatically alert the dispatcher with an audible tone.

C. The console shall retain the channel availability for the dispatcher for a predetermined time to allow the dispatcher time to activate the transmit function for a user group.

8.14.19 Talk Group and ID Alias Display

A. The console system shall display the discrete unit ID, emergency ID, the alias name, and the talk group ID of trunked field units and other dispatch positions on each of the console operator positions.

8.14.20 Intercom

A. An intercom function shall be provided to permit the operators to selectively talk to another console position.

B. In the intercom mode, the screen shall list the user-defined names of all consoles and prompt the operator to select the desired console position.

C. The intercom function shall disconnect the keying signal from the transmit circuit in use so that the operator can use the console microphone circuit to communicate solely with any console or parallel remote control unit similarly equipped.

D. Multiple simultaneous intercom conversations between individual consoles shall be possible.

E. The County desires that these intercom conversations be recorded by the voice logging recorder system including time, operator position, and any other information deemed available by the Contractor such as talk group.

F. The Contractor shall describe in their proposal, in technical and operational detail, their proposed solution for recording console intercom audio.

8.14.21 Console Clock

A. The console shall display time in a twelve or twenty four-hour format (user selectable) and day of the year (HH:MM:SS day) at each operator position.

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B. The console clock shall derive its reference time signal from the master time source.

8.14.22 VU Display

A. The console shall present a visual indication of receive and transmit audio levels.

8.14.23 Keypad

A. The console shall have a screen representation of a keypad for numeric data entry.

8.14.24 Keyed Channel Interlock

A. A means shall be provided to lock out control of a channel from other console positions if that channel is already keyed from another console position.

B. The supervisor position can override this feature.

8.14.25 Channel Name

A. Designated channel control modules shall include a minimum of twelve (12) character alphanumeric display symbols to identify the channel.

8.14.26 Channel Marker

A. Channel Marker provides the ability for an operator to place a periodic marker indicator on a talk channel when speech is not present to notify new arrivals that the dispatch operator is currently busy handling a call on that channel and to standby with new traffic.

8.14.27 Conventional Channel Monitor

A. A monitor function shall be provided to permit the operator to disable the continuous tone controlled squelch system (CTCSS) of any selected conventional base station receiver (if so equipped) in order to permit monitoring of the communications channel prior to making a transmission.

8.14.28 Repeater Disable

A. A means shall be provided to disable the repeat function of conventional tone-controlled conventional base station repeaters.

8.14.29 Repeater Enable

A. A means shall be provided to enable the repeat function of conventional tone-controlled conventional base station repeaters.

8.14.30 Talk group/Channel Select

A. Each talk group or channel shall be capable of independent selection by the dispatcher.

B. The channel window shall provide a visual window indication when the corresponding channel is selected and when it is transmitting.

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8.14.31 Call History Window

A. Each console position shall provide a call history window that allows the operator to review the last twenty (20) calls received at that position.

8.14.32 ID Display Queuing

A. Queuing of at least ten plain English IDs (ID scroll list) on the channel window for standard calls and emergency calls.

8.14.33 Simultaneous Select

A. Controls shall be provided that allow the operator to manually select any combination of console controlled talk groups and base stations for simultaneous transmissions.

B. This mode of operation shall allow the selection of multiple trunked talk groups and/or conventional channels.

C. The combined transmission shall utilize a single trunked channel when involving more than one (1) talk group.

D. The trunked field units shall be able to talk back to the dispatcher directly without having to change the user talk group selector switch.

8.14.34 Multi-Auto Select

A. Pre-programmed groups of conventional radio channels and/or trunked user groups shall automatically be selected by the selection of single command button or keystroke.

B. These groups of channels shall be operator programmable.

8.14.35 Talk Group Call

A. The console system shall support trunked talk group calls on any talk groups programmed in the system with appropriate management approvals.

8.14.36 Selective Call Alert

A. Selected users and all dispatchers shall have the ability to selectively send and receive an alert to and from an individual user on the system regardless of the assigned talk group.

B. The call shall allow an individual to alert another user with a distinctive tone and their individual ID (ID on display radios only).

8.14.37 Private Call

A. A private conversation shall be possible between the console position operator and any properly equipped mobile, portable, or RF control station.

B. This conversation shall not have the ability to be monitored by other units on the system.

C. The County desires that these conversations be recorded by the voice logging recorder system including time, operator position, and any other information deemed available by the Contractor such as talk group and unit ID.

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D. The Contractor shall describe in their proposal, in technical and operational detail, their proposed solution for recording console Private Call audio.

8.14.38 Talk Group/Channel Busy Indicator

A. Dispatch Consoles shall have channel busy indicators to visually indicate that the channel is in use.

8.14.39 Talk Group Merge

A. When operating in this mode, the console shall patch the trunked user talk groups together utilizing only one (1) RF trunked channel.

8.14.40 Talk Group/Channel Cross Patch

A. Shall allow the dispatcher to patch any two (2) or more resources together.

B. The purpose is to allow field units of different conventional radio channels and/or trunked talk groups to intercommunicate directly.

C. If the dispatcher transmits on any talk group or channel included in a patch, then audio shall be heard by all members of the patch.

8.14.41 Talk Group/Channel Audio Cross Mute

A. Dispatch consoles shall include a programmable cross mute feature, which precludes voice communication from a dispatcher's microphone being repeated over loud speakers at other consoles in the dispatch center.

8.14.42 Trunked Announcement Group Calls

A. The console system shall support trunked announcement group calls on any announcement groups programmed into the system, with appropriate management approvals.

8.14.43 Trunked Emergency Calls

A. The console system shall support trunked emergency calls from any user radio programmed in the system with appropriate management approvals.

8.14.44 Emergency Call Alert and Display

A. When a field unit initiates an emergency alert, the console shall provide an audible alert and display the unit ID (alias) of the calling unit in plain English.

8.14.45 Emergency Reset

A. All consoles shall be capable of declaring and receiving emergency alerts from user radios and other operator positions operating on the trunked radio system regardless of the status of the channel control window.

B. Emergency messages shall be indicated by a flashing indicator, an emergency ID character, and an audible alert.

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C. Dispatcher acknowledgment of the message shall silence the audible alert and stop the flashing display.

D. The console system shall be capable of queuing multiple emergency messages in the display stack and the emergency ID character shall continue to flash until all messages have been viewed by the dispatcher.

E. The most recent emergency declaration shall be displayed and the dispatcher shall be able to scroll through the queue to view queued emergencies.

F. The Emergency feature shall be programmable to allow the alert message to be delivered and displayed in predefined ways, including display on the current talk group in use by the person declaring the emergency, and display on a separate pre-defined talk group.

G. The declaring alias shall be displayed on user radios of the same talk group and at the appropriate dispatch operator positions.

8.14.46 Alert Tones

A. The console system shall provide a minimum of three (3) distinct over-the-air tones to be used for alerting purposes.

B. Each alert tone shall be immediately broadcast on the selected talk group, group call or all call, when activated.

C. Tones shall be presented in the headset as side tone audio only, at a reduced volume level to confirm that the tone was generated and sent.

D. The following selections shall be available at a minimum:

a. Alert 1: Steady Alert Tone - shall generate a nominal 1000 Hz steady tone

b. Alert 2: Warbling Tone - shall alternate low and high frequency audio signals

c. Alert 3: Pulsed Alert Tone - shall initiate an automatic sequence, consisting of a nominal 1000 Hz tone, for a period of two (2) seconds

8.14.47 Paging Encoder

A. The console system shall include paging encoder functionality for manual paging and to allow for the configuration of preprogrammed single button function paging.

B. The console system shall include a multi-format paging/signaling encoder that is capable of encoding industry standard two-tone sequential and DTMF signaling formats.

C. The Contractor shall state in their proposal if the paging encoder is standard equipment or if it as a cost option.

8.14.48 Preprogrammed Single Button Function Paging

A. Each console shall be capable of supporting a quantity of pre-programmed single-button paging functions.

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B. The Contractor shall state in their response, the maximum number of pre-programmed buttons per operator position that their console system will support.

8.14.49 Status Messaging

A. Each of the console operator positions and supervisory positions shall be equipped with the ability to receive and display status messaging from user radios.

B. A minimum of one hundred twenty-five (125) different pre-defined messages shall be supported.

C. Typically, text messages will be used to indicate status reports and updates from field units.

D. The ID of the sender shall be displayed in a dedicated status-messaging window on the GUI.

E. The window shall display the message sent, along with the ID and a time stamp.

F. The window shall scroll messages & place the most recent message at the top of the list.

G. Upon receipt of a message, an audible alert shall notify the operator that a new message has arrived and needs to be viewed.

H. Text messages shall include a message requesting to speak with the console operator.

I. The operator shall be able to respond with a group call for a group alias and with an individual call for an individual alias.

J. Text messages shall be archived by the system so that they can be easily reviewed at any time for management or emergency purposes.

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9. USER EQUIPMENT REQUIREMENTS

A. All Contractor provided user equipment shall be P25 Phase 1 and Phase 2 equipped and be fully operational in both the 700 and 800 MHz frequency bands.

B. All Contractor provided multiband user equipment shall be P25 Phase 1 and Phase 2 equipped, be fully operational in both the 700 and 800 MHz frequency bands, and capable or equipped as required for operation in VHF and UHF public safety bands.

C. For public safety portable user equipment, the County requires that Contractor propose only rugged, high-quality, high-tier subscriber equipment models with top and front color displays.

D. For non-public safety, local government users, the County requires that Contractor propose high-quality, mid and lower-tier subscriber equipment that is commensurate with local government communications.

E. The Contractor is expected to offer a range of end user subscriber radio equipment and accessories, to include a variety of options, providing a performance range from the highest quality, highest duty rating, and high performance robust components down to less featured, less mission critical equipment for local government users.

F. The Contractor shall include only equipment that is of current design and manufacture and FCC Type Accepted.

G. All proposed subscriber equipment shall incorporate electronic, alphanumeric displays to provide visual indication of system availability, channel/talk group selection, incoming user ID, call alerts, and operational status such as scan and channel busy.

H. All proposed subscriber equipment shall be capable and equipped to operate in analog, P25 Phase 1 and Phase 2 digital trunked, and P25 Phase 1 digital conventional modes.

I. The determination of which mode the radio operates in shall be an automatic function of the channel or talk group selected by the user.

J. Direct, radio-to-radio, communications (talk-around) capability is required and this capability shall be available using both analog and P25 Phase 1 digital modulations.

K. All Terminal Equipment shall provide voice playback. The Contractor shall describe the length of audio playback and how this feature is used on the radio.

L. Portable High and Mid-Tier public safety radios shall have visual displays on the top of the radios capable of displaying talk group and channel information.

M. The County prefers a single portable radio system architecture to minimize the number of devices that First Responders have to carry.

N. With the requirement to access AT&T FirstNet (AT&T Band 14), LTE access to other wireless carriers, and WIFI in additional to P25 communication capability, the County

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prefers a multi-system software radio architecture for portable radios capable of addressing multiple communication requirements.

9.1 MIL-STD and IP Requirements

A. All proposed subscriber equipment shall incorporate heavy-duty construction, weather-sealed enclosures and weather-sealed controls to meet MIL-STD-810 C, D, E, F, and G for water, shock, vibration, dust, humidity, and high/low temperature performance, and the Contractor shall provide these specifications, the test method and procedure referenced with their response.

B. All proposed subscriber equipment shall be capable of operation without significant degradation when subjected to shock, humidity and vibration.

C. All proposed mobile radio equipment shall meet or exceed Ingress Protection (IP) IP54 for dust and water intrusion.

D. All proposed public safety portable radio equipment including microphone accessories shall meet or exceed IP68 for dust and water intrusion.

E. All proposed local government portable radio equipment including microphone accessories shall meet or exceed IP54 for dust and water intrusion.

9.2 Features and Functions

A. All mobile, portable, and control station equipment shall be equipped with “Call Alert” for the selective alerting of individual users and/or user groups.

   a. The Call Alert feature lets a dispatch console or certain radios leave a “page” at an unattended radio or dispatch console

   b. Upon returning to the radio or dispatch console, the called user is notified that someone tried to call them

   c. A Call Alert can be used to trigger an activity such as a making a vehicle’s horn to sound and its lights to flash

B. Emergency Call

   a. The public safety subscriber radios used on the current system have an easily identifiable “Emergency” button, recessed to prevent accidental initiation

   b. When users find themselves in a dangerous situation, they can very quickly use that button to alert dispatchers and other users in their talk group of the situation

C. Encryption

   a. Specific talk groups and user groups may utilize encryption and the new communications system shall support the capability to utilize end-to-end encryption within user talk groups

D. Loss of Trunking Indication

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a. The Contractor shall describe the capabilities of the user equipment radios to provide an indication to the user that the trunked system is no longer trunking and or has reverted to one of its failure modes.

b. It is preferred that users have the ability to silence the failure indication tone

E. Time-Out-Timer

a. A transmitter time out timer shall be provided to limit key down time

F. Priority Scan/Monitoring

a. This feature makes it possible for a radio user to scan talk groups in their system, and to mark up to two (2) conventional channels or talk groups in their scan list as "Priority"

b. A non-priority conversation will be interrupted by Priority 1 or Priority 2 talk group activity

c. A priority channel or talk group is monitored more often than other channels, and will continue to be monitored if listening to another channel or talk group of lesser priority is captured

G. Non-Priority Scan

a. This feature makes it possible for a radio user to scan between multiple systems, talk groups, or conventional channels

H. "Man-Down" Function

a. This functionality will initiate an emergency alarm on the system, in the event that a radio (and presumably its operator) has been in a static horizontal position for a certain amount of time

b. This functionality allows for dispatchers and other members of the talk group to be notified that a user is in need of assistance, even if the user has been incapacitated and is unable to initiate the emergency on their own

I. Multi-Band Capability

a. The 700 MHz band and the 800 MHz band are considered as a single band for the purposes of this section

b. This functionality provides the capability for a single radio to operate on more than one radio frequency band, such as 700/800 MHz, VHF, and UHF

c. This would eliminate the need for users who need to operate on multiple systems in different frequency bands to carry multiple radios

d. The Contractor shall propose subscriber radio option with this functionality

J. GPS Location Operation

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a. This functionality provides the capability to remotely monitor the location of radio units

b. When combined with the "Man Down" functionality, this becomes a very powerful tool for quickly coming to the aid of fallen users in need of assistance

c. The new system shall include the option of this capability within the radio subscribers

d. In addition, it is desired by the County that the GPS antenna be integrated within the subscriber radio or its antenna and that an additional external GPS unit and antenna not be required for this functionality

e. The Contractor shall describe its method or methods of providing GPS information.

i. Does the Contractor support in-band GPS?

ii. Does the Contractor support Tier 2 location services, which are part of the P25 standards?

iii. How are these methods supported in the Contractor's P25 system and what products do they interface to?

K. Digital Filtering/Noise Cancellation

a. Subscriber radios for the new system shall incorporate software/hardware noise reduction capability to improve user safety by ensuring that transmissions are clearly understood

b. There have been occurrences where subscriber radios have experienced receiver desense in environments where the signal level from the desired radio system is marginal and there are high levels of out-of-band signals from commercial carrier or other systems.

i. The Contractor shall provide detailed technical information on their equipment's ability to reduce harmful receiver interference and desense through the use of switched preselector and band pass filters, low-noise amplifiers and AGC, and strong signal intermodulation performance

c. The County reserves the right to test all Contractor-proposed radio's ability to eliminate noise in real public safety situations prior to approving them for purchase

L. Intelligent Radio Display

a. Intelligent radio display feature enables the control of audio level, lighting, and tone alerts of the radio

b. For example, a user in bright sunlight or high-noise environments need to be able to increase the lighting or audio level, or if the user is conducting ongoing, covert surveillance, they need to be able to create a profile that provides lower lighting with subdued alert tones and audio

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c. The Contractor shall state if their proposed subscriber radios support this capability

M. Alphanumeric Texting

a. This functionality provides the capability for dispatchers to send text messages, in place of voice transmissions

b. This feature would be very helpful in situations where public safety officers need detailed information such as location addresses or suspect descriptions

c. Rather than relying on memory or the need to write down the information, the user can go back and read the information stored in the radio

d. The new system and the available subscriber radios shall be capable of supporting this capability

9.3 GPS Specifications

A. Accuracy specifications are for long-term tracking, 95th percentile values, > 5 satellites visible at a nominal signal strength of -130 dBm.

a. TTFF Cold Start < 1 minute

b. TTFF Hot Start < 10 seconds

c. Horizontal Accuracy < 10 meters

9.4 Mobile Radio General Requirements

A. The mobile radio shall operate from a nominal 13.8 Volt DC primary power source, and shall be equipped with suitable reverse polarity protection to avoid damage if the radio or battery were to be incorrectly installed.

B. The mobile radio shall be protected against voltages above 14 VDC and operate at voltages as low as 11 VDC without emitting any spurious emission or loss of programming.

C. Mobile radios shall have a transmitter output power of 30 watts minimum, and furnished to operate on all channels in the 700/800 MHz bands.

D. All existing mobile equipment removals shall be part of this procurement.

E. All new mobile equipment installations, cabling, brackets, etc. shall be part of this procurement.

F. The Contractor shall assume that all mobile removals and installations will be performed at County facilities.

9.5 Mobile Radio Configurations and Options

A. The mobile subscriber equipment shall be a universal mount (front/rear) radio.

B. Mobile equipment shall be available for motorcycle, watercraft, and aircraft applications.

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C. Open-air mobile units and all external headsets, microphones, and speakers shall be weatherproofed and suitable for outdoor installation.

D. A remote mounting kit and universal mounting kit shall be provided for designated units.

E. The mounting kit shall include control cable, power cable, external control head and microphone, external speaker, and all mounting brackets and interconnecting cable shall be supplied.

F. When front mounted, the control unit shall become an integral part of the radio set housing.

G. The speaker may be internal or external where required and shall be environmentally weatherproof in its design and operation.

H. All mobile radios shall be equipped with a palm-type heavy-duty microphone.

I. Different microphone options as described below shall be provided to specially designated radio:

   a. Heavy-duty palm microphone

   b. A hand-held control head microphone with the capability of selecting talk groups and channels, adjustment of volume, and activation of the emergency function

   c. A noise canceling microphone for use in a high-noise environment

J. Unless otherwise specified, the Contractor shall provide a roof mounted 3 dB gain, heavy-duty mobile antenna for each mobile.

K. The mobile antennas shall mount in a 3/4-inch hole and be of all brass construction with O-ring seals.

L. Designated mobile radio units shall be equipped with an external speaker mounted in the vehicle.

M. Mobile radios equipped with an external speaker shall provide a minimum audio power output of 10 watts at no greater than 3.0% audio distortion.

N. Dual Control Heads: designated mobile radios shall offer dual control heads for a select units and shall be interfaced as required with the current vehicle intercom and/or headset systems.

O. Contractor shall provide per unit pricing for public safety and local government mobile user equipment and accessories based upon the general tier descriptions and feature-sets listed below:

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Radio Features for Mobile Radio Equipment	Low-Tier	Mid-Tier	High-Tier
VHF/UHF/700/800 MHz Capable			X
700/800 MHz Capable and Equipped	X	X	X
Group/Channel Selector, 16 Position	X	X	X
Volume Control	X	X	X
Minimum Channel Capacity	512	1000	3000
Dual Control Heads		X	X
Scan Control with Priority Scan	X	X	X
GPS	X	X	X
Wi-Fi 802.11 b/g/n		X	X
LTE Option		X	X
Alphanumeric Display Backlit	X	X	X
Full Keypad with Backlit Keys		X	X
Emergency Button	X	X	X
Over-The-Air-Programming (OTAP)	X	X	X
AES256 Voice Encryption		X	X
Multi-Key Encryption (64 minimum)		X	X
Over-The-Air Rekeying (OTAR)		X	X

Table 23 - Mobile Radio Features

9.6 Portable Radio General Requirements

A. The radio set shall be small, lightweight, and rugged and shall be capable of withstanding severe operating conditions.

B. The portable housing shall be constructed of high impact resistant material and shall be sealed and gasketed to protect internally mounted circuitry against dust, foreign particles, moisture, and splashing water.

C. Opening the battery compartment shall not break the seal to the radio circuitry.

D. All proposed portable subscriber radios shall be less than 24 ounces in total weight with attached standard battery, not including external accessories.

E. The portable radio shall fit comfortably in the hand and permit one hand operation.

F. Controls shall be top-mounted rotary controls with positive stops for volume and channel mode selection.

G. Control placement must be sufficient to allow operation wearing gloves as typically used by the fire service.

H. A sealed transmitter "push-to-talk" (PTT) switch shall be provided on the side of the unit, and an emergency switch shall be provided for user-defined quantities of radios.

I. Transmitter RF power output shall be a minimum of 3.0 watts.

J. All proposed portable radios shall be equipped with a personal, desktop-style single battery charger, a spare battery of the same type and duty cycle rating as the primary battery provided with the radio, and a standard belt clip.

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K. Portable radios not operating in a vehicular charger or adapter, shall provide no less than 500 milliwatts of audio output power at no greater than 1.5% audio distortion.

L. All proposed portable radios shall be equipped standard with a 1/2-wavelength whip style antenna operational across the 700-800 MHz frequency bands per current FCC requirements.

M. The Contractor shall describe the capabilities of the proposed portable radios to provide an indication to the user that the trunked system is operating in a mode that is not normal; it is preferred that users have the ability to silence the failure indication tone.

N. The Contractor shall provide a matrix showing all models of portable radios available and shall include the dimensions and weight of each model.

O. The Contractor shall provide per unit pricing for public safety subscriber equipment and accessories based upon the general tier descriptions and feature-sets listed below:

Radio Features for Portable Radio Equipment	Low-Tier	Mid-Tier	High-Tier
700/800 MHz Capable and Equipped	X	X	X
VHF/UHF/700/800 MHz Capable			X
P25 Phase 1 and Phase 2 Equipped	X	X	X
Top-Mounted Group/Channel Selector, 16 Position	X	X	X
Top-Mounted Volume Control	X	X	X
Top and Front Mounted Color Displays		X	X
Minimum Channel Capacity	512	1000	3000
3,100 mAh Li-Ion Battery		X	X
2,400 mAh Li-Ion Battery	X		
Vehicular Portable Charger	X	X	X
Speaker Mic (w/o Antenna)	X	X	X
Speaker Mic Antenna		X	X
GPS	X	X	X
Wi-Fi 802.11 b/g/n		X	X
LTE Option		X	X
Scan Control with Priority Scan		X	X
Alphanumeric Display Backlit		X	X
Full Keypad with Backlit Keys	X	X	X
Emergency Button	X	X	X
Over-The-Air-Programming (OTAP)	X	X	X
AES256 Voice Encryption		X	X
Multi-Key Encryption (48 minimum)		X	X
Over-The-Air Rekeying (OTAR)		X	X
Intrinsically Safe Option		X	X

Table 24 - Portable Radio Features

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9.7 Portable Radio Configurations and Options

A. The Contractor shall propose at a minimum Lithium-ion (Li-Ion) "smart" rechargeable batteries, which shall be quickly and easily removed from the radio.

   a. The proposed "smart" battery technology shall be capable of monitoring and reporting its condition to the operator

   b. Battery life for portable radios shall be based on a 10% transmit, 10% receive, 80% stand-by duty cycle, measured in accordance with EIA RS-316 at 250 milliwatts of audio output, shall be at least twelve (12) hours

   c. Batteries shall be capable of full recharge in one (1) hour or less

   d. Batteries provided shall be capable of withstanding a 3-foot drop test to concrete without damaging battery performance or visibly cracking the battery housing

   e. The Contractor shall provide in the proposal a list of time parameters for each type of battery and capacity available for each type of portable radio

B. External accessory connections shall be provided as an integral part of the radio, for the connection of various types of remote speaker/earplug/microphone/ antenna combinations.

C. A flexible antenna shall be provided and shall connect to the appropriate connector on the radio or speaker-microphone.

   a. Antennas mounted on the radios shall be 1/2-wave whip type

D. A belt-mounted carrying case shall be provided.

E. Speaker-Microphones

   a. Speaker microphones (without antennas) shall be water resistant and utilize coiled cords

   b. Speaker microphones shall use noise cancelling technology

   c. It shall be possible for an operator to remove the speaker microphone from a portable radio without the use of tools, and then operate the radio in normal fashion

F. Single-unit Charger.

   a. The portable radio shall operate in the receive and transmit modes while being charged in the single unit charger

   b. The charger shall operate from a 120 VAC, 60Hz single-phase source

G. Multi-unit Charger.

   a. The portable radio shall operate in the receive and transmit modes while being charged in the multi-unit charger

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b. A multi-unit fast charger shall provide proper charging of batteries whether in or out of the portable radios

c. The charger shall operate from a 120 VAC, 60Hz single-phase source

d. The multi-unit fast charger shall be capable of charging a minimum of six (6) batteries simultaneously, and have a battery status indicator for each battery position

H. Vehicular Charger

a. The portable radio shall be capable of operating in both the receive and transmit modes while being charged in the vehicular charger

b. The vehicular charger shall be capable of charging a battery whether on or off the respective radio (without the need for a spacer or adapter) and operate from a nominal 13.8 VDC vehicular source

c. The vehicular charger shall be designed in a manner that will allow full view of the portable radio alphanumeric display

I. Intrinsically Safe

a. UL will approve portable radios and accessory equipment to ANSI/TIA-4950 which has replaced the FM3610_88 classification rating

b. The Contractor shall furnish intrinsically safe portable radios, batteries and accessories that shall be approved to the TIA-4950 Standard for use in Division 1, Class I, Groups C, D, Class II, Group E, F, G and Class III hazardous classified locations. This will be required for Hazmat operations in particular.

9.8 Control Station Radio Configurations and Options

A. Control stations shall be provided that operate from 120 VAC, 60Hz primary power.

B. All radio equipment shall be FCC type accepted under Part 90 of the FCC Rules and Regulations.

C. Control stations shall have a transmitter rated output power of 30 watts minimum, and furnished to operate on all channels in the 700/800 MHz bands.

D. Control stations radios shall be P25 Phase 1 and Phase 2 capable and equipped.

E. All public safety control stations radios shall be capable of AES256, multi-key encryption.

F. Control stations shall be configured and supplied with a speaker and desk-stand type microphone with a PTT transmit switch.

G. The following requirements shall apply for control station radio installations where a dedicated antenna and transmission line is required:

a. The new control stations may utilize the existing indoor and outdoor antenna systems only if specified in this RFP

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b. For new installation locations, the control station antenna system shall use an Antenex Y8063 yagi model or equivalent

c. For pricing purposes, the Contractor shall assume 100 feet of 1/2-inch foam LDF transmission line length for a typical control station installation

d. All installation hardware, mounts and masts, transmission line surge suppressors, ground kits, entry port boots, grounding conductors, etc. shall be provided by the Contractor

H. The following requirements shall apply for multiple control station radio installations where a shared combining and antenna system is required:

a. The new control stations may utilize the existing indoor and outdoor antenna systems only if specified in this RFP

b. For the installation of multiple control stations, the Contractor shall propose a control station combining system with dual antennas (individual antennas for transmit and receive)

c. The control station antenna system shall use a dbSpectra DS7A06F36D-N model dual antenna or equivalent

d. For pricing purposes, the Contractor shall assume two (2) 100-foot runs of 1/2-inch foam LDF transmission line length for each control station combiner system

e. All installation hardware, mounts and masts, transmission line surge suppressors, ground kits, entry port boots, grounding conductors, etc. shall be provided by the Contractor

I. Digital Remote Control Unit

a. Digital remote control units where required shall be compact desktop style units for the remote operation of the control stations

b. The remote control unit shall be capable of controlling all conventional and trunked features of the control station radio such as modes, talk groups, channels, emergency, and typical mobile radio control head functions

J. Alerting Capabilities.

a. Where required, control stations shall be equipped to provide a switched output that may be connected to signaling and control equipment typically used for fire station alerting

b. Activation of the switched output shall be controlled by the transmission of a Call Alert message

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9.9 Fleet Mapping and Subscriber Equipment Programming

A. The Contractor, with input from the County, shall be responsible for development and programing the fleet map assignments for the entire system infrastructure.

B. The Contractor shall be responsible for developing the fleet mapping for all County system agencies and include all mutual aid and interoperability talk groups.

C. The Contractor shall be responsible for the final subscriber equipment templates and programming of the subscriber equipment.

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10. FAA AND FCC FILINGS AND AUTHORIZATIONS

10.1 FAA Study and Determination

A. The Contractor shall be responsible for filing and obtaining any and all FAA studies, FAA determinations, and site surveys prior to construction, and for the notification of the FAA upon the commencement and the completion of construction by the filing of the appropriate forms and submittals.

B. This requirement includes any and all studies required for the addition or modification of system antennas and frequencies for all new and existing tower structures.

10.2 FCC Application, Coordination, and Licensing

A. The County will be responsible for the development of the 800 MHz frequency plan and for the initial coordination and licensing of the frequencies.

B. The County will obtain the FCC licenses for all sites and frequencies using the antenna heights and a default set of technical parameters for antennas, emissions, transmitter power, and effective radiated power.

C. The Contractor shall be responsible for any and all modifications to the County licenses including frequency coordination, engineering documentation, submittals, FCC applications and filings, waivers, etc. for the licensing of the Contractor's final communication system design.

D. The Contractor shall be responsible for any and all frequencies and licensing work that is not included in the County's frequency plan detailed in Tables 2 through 5 as required in this RFP.

E. The Contractor shall be responsible for any and all fees levied by the frequency coordinators.

10.3 FCC Antenna Structure Registration

A. The Contractor shall be responsible for all work, studies, and costs for obtaining or modification of all FCC Antenna Structure Registrations required for antenna structures provided and any existing towers modified in this Project.

10.4 Environmental, Tribal, Historical, MPE, EME/NIR, and Other Studies

A. The Contractor shall be responsible for obtaining all FCC, NEPA, SHPA and any other environmental studies and notifications, and any other requirements needed to obtain the FCC Antenna Structure Registration for tower sites provided by the Contractor in this project.

B. The Contractor shall be responsible for obtaining any and all required environmental, tribal, historical, maximum permissible exposure, electromagnetic exposure, non-ionizing radiation, or any antenna structures provided and any existing towers modified in this Project.

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C. The Contractor shall be responsible for any and all payments to these organizations including historical organizations and Indian tribes.

10.5 AM Detuning

A. If applicable, the Contractor shall be responsible for all work, studies, and costs for obtaining any and all AM detuning services for tower structures provided or modified in this Project including the assessment and correction of pattern distortion where wireless antenna structures (towers) can unintentionally interfere with an AM broadcast station's antenna pattern.

10.6 Receiver Desense and Degradation

A. The County requires that tower-top amplifier preselector filters be furnished and installed and that transmitter bandpass filters be furnished and installed for the new 800 MHz antenna systems where vertical separation cannot be achieved on the supporting structure.

B. The County requires that no 800 MHz receiver installed at any site by the Contractor shall be desensed by more than 1.0 dB due to the presence of 800 MHz signals when all of the 800 MHz transmitters installed at the site are keyed simultaneously.

C. The Contractor shall provide calculations in their proposal showing that appropriate filtering equipment has been provided in their proposal.

D. The Contractor shall perform this testing during the acceptance testing and demonstrate to the County that the installations at all 800 MHz tower sites are in compliance.

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11. UPS POWER SYSTEMS FOR COMMUNICATION SITES

A. All new communication systems equipment at each tower site shall be powered exclusively by a -48VDC power plant system.

B. The Contractor shall furnish and install all new 120/240VAC circuits, rectifier systems, batteries, and distribution equipment as required based upon the Contractor's equipment power consumption and the reserve loads specified in this RFP.

C. The Contractor shall furnish and install the appropriately sized 240 VAC circuits including all breakers, wiring, conduit, and receptacles to provide at least two (2) circuits to each rectifier rack at each tower site.

D. The Contractor shall be responsible for any renovation work at existing communication facilities that may be required to support the implementation of their proposed communications system.

E. The Contractor shall be solely responsible for the assessment of the communication system facilities, and for the development of the scope of work and the costs associated with these renovations.

F. The renovation work may include the relocation of existing equipment, racks, antenna systems, and other components installed at the sites.

G. The Contractor shall furnish all plans and specifications, and all materials and labor necessary to complete the installation of the DC power plant systems at the specified communication sites.

11.1 DC Power Plant Systems Requirements

A. The County communication tower sites shall utilize -48VDC power plant systems to power all new conventional and P25 trunked communication system, control equipment, and network connectivity equipment as opposed to 120/240 VAC UPS systems.

B. All base stations and repeaters shall be powered by the -48VDC power plant system.

C. All ancillary site equipment including tower-top preamps and receiver multicouplers, GPS reference oscillators, etc. shall be powered by the -48VDC power plant system.

D. The Contractor shall provide all batteries, battery mounting or racking facilities, float-type battery chargers/rectifiers, low voltage disconnect, and DC load centers.

E. The DC power systems shall be designed based upon the following parameters:

a. N + 1 (For redundancy)

b. Rectifiers shall operate in ambient temperatures of 0º C to +50º C

c. -48 VDC output

d. Load shedding:

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i. A minimum of eight (8) hours run time for the network equipment including microwave, MPLS, site alarms, site switches, routers, etc., required for site connectivity. The Contractor shall include site GPS or other equipment to the 8-hour run time requirement if loss of power to the equipment creates a substantial delay once power is restored the site.

ii. A minimum of two (2) hours run time for the base station transceivers and supporting equipment.

e. When sizing the system, the Contractor shall consider the required full load run time for the equipment provided in this Project, plus a growth factor equivalent to a 50% increase in load.

f. Battery chargers/rectifiers shall provide sufficient current capability to simultaneously charge a discharged battery bank to full capacity in a 24-hour period

g. Automatic low-voltage disconnects shall be provided for the radio and microwave equipment to remove the load from the battery plant at the point when the battery voltage reaches a preset dropout voltage level

F. The battery chargers/rectifiers shall be rack-mounted in an EIA 19-inch rack.

G. The battery chargers/rectifiers shall be provided with AC circuit breakers, DC circuit breakers, minimum 2% accuracy DC voltmeter and DC ammeter, current limiting and high voltage shutdown circuitry, continuous float and equalizing voltage adjustment, and 24-hour equalizing timer and these features may be integral to the chargers/rectifiers or provided in separate rack mount assemblies.

H. Battery chargers/rectifiers shall be capable of battery eliminator operation and power switching and disconnect capability such that the rectifiers, batteries, and commercial power sources may be separately isolated in a manner whereby each component may be serviced safely.

I. The switching and disconnect capability shall be designed such that radio communications system operation is not impaired or interrupted during any repair or maintenance action.

J. The chargers/rectifiers shall have the following minimum alarm points:

a. Battery charger low voltage

b. Battery charger high voltage

c. Battery charger no charge

11.2 Communication Shelter Floor Loading

A. The Contractor shall collect equipment shelter model/information during the pre-bid site walks.

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B. The Contractor shall consider the equipment shelter floor load limitations in the design of the battery support structure.

C. The battery support structure shall be engineered to distribute its weight based on each shelter floor load limitations without damaging the floor.

D. Based upon the assumption that the shelter floor is in good condition, the Contractor shall be responsible for any necessary improvements for the battery support structure.

11.3 Batteries

A. Modular stationary batteries shall be sealed maintenance-free type with sufficient ampere-hour capacity to support the run time requirements and the battery life expectancy shall be at least twenty (20) years in normal float-type service.

B. Battery capacity ratings shall be adjusted by a factor of 1.25 to compensate for battery capacity degradation over their 20-year life.

C. No venting facilities or special battery rooms shall be required for normal operating conditions.

D. Batteries shall be EnerSys PowerSafe DDm series, or engineer-approved equivalent.

E. Secure mounting facilities shall be incorporated in the design of the battery bank.

11.4 DC Power Distribution

A. A rack-mounted DC load center with circuit breakers shall be provided with the battery power system to provide a protected DC distribution to all -48VDC powered communications equipment, and the Contractor shall furnish and install a minimum of five (5) spare DC circuit breakers of the same type supplied on the panel for future use.

B. The DC-power circuit breakers shall be configured in a manner to preserve system redundancy and be clearly labeled for easy identification with permanent marker.

C. A separate (not in the DC distribution panel) DC load breaker shall be provided to disconnect the battery from the -48VDC rectifier system and the DC battery disconnect shall be equipped with alarm relay contacts and connected to the system alarm system.

11.5 Power Inverters

A. Communication control and other network equipment that cannot be powered directly from the DC power plant shall be powered by redundant power inverters with -48 VDC input power and 120 VAC output power.

B. The inverters shall have a capacity rating of at least twice that of the connected equipment loads.

C. The inverter shall, at a minimum, be based upon the following parameters:

a. Pure sine wave output (THD <2%) to operate higher-end electronic equipment

b. Selectable bypass/inverter mode

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c. Local and remote management and control

d. Dry contact terminal

e. Input over/under voltage protection

f. Internal over temperature protection

g. Input reverse polarity protection

h. Output overload protection

i. Output short circuit protection

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12. COMMUNICATION SITE DEVELOPMENT

A. The Contractor shall have total Turnkey responsibility for site development and for the site implementation to assure a single point of contact for all communications.

B. The Contractor shall furnish all design and engineering services, and install the communication sites, towers, foundations, communications shelters, emergency power standby generators, grounding and bonding systems, and other necessary hardware and components in accordance with the requirements of this RFP.

C. The Contractor shall be responsible for the provisions and cost of factory staging and testing, warehousing, insurance, storage and the security of supplied goods and equipment prior to and during the construction phases of the Project.

12.1 Existing County Tower Sites

A. The County's existing tower sites consist of the following sites:

a. DeBary

b. DeLand FDOT

c. De Leon Springs

d. Deltona

e. Edgewater

f. EOC-A

g. EOC-B

h. EVAC

i. New Smyrna Beach

j. Orange City

k. Ormond Beach

l. Pierson

m. Port Orange

B. The Contractor shall be responsible for all design and engineering services, including the suitability of the existing communication sites, towers and tower foundations, communications shelters, grounding and bonding systems, including all necessary hardware and components in accordance with the requirements of this RFP.

12.1.1 Tower Structural Analysis and Modification

A. Some of the towers utilized for the County's existing radio system are heavily loaded. Therefore, it is important that the Contractor minimize tower antenna loading, where possible, to support the new P25 radio system.

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B. The Contractor will perform a structural analysis for each communication tower where changes are made to antennas and transmission lines.

C. The new antenna system design will be used by Contractor to perform the structural analysis.

D. If the Contractor changes the antenna configuration after the County has accepted the system design, and such that a new analysis is required, the Contractor shall be responsible for the cost of the resulting analysis and any required modifications.

E. Except as defined in Item D above, the County shall be responsible for the costs associated with the structural design, fabrication, and implementation of all structural modifications and reinforcements that may be required for each tower structure.

12.2 Construction Site Management and Safety Plan

A. The Contractor shall prepare a preliminary construction site management plan and include it in their proposal.

   a. The construction site management plan shall depict the planned areas of construction including the staging areas for storage trailers, heavy equipment, cranes, tower steel and materials, and spoils

   b. The plan shall include the management of traffic for the delivery of tower steel, water, concrete, equipment shelter, generator, and other materials

B. The County will continuously occupy some of the sites and buildings during the entire construction period.

   a. Public access, property, health and safety considerations shall exceed all other considerations and the construction will require that the Contractor schedule and plan the work accordingly

   b. Construction work shall at all times be subject to alteration and revision if necessary for public health and safety considerations

C. The Contractor shall be responsible for any site modification required to accommodate the equipment proposed for the Project.

D. The Contractor shall secure the construction site at all times and may utilize temporary security and safety fencing as needed.

E. The Contractor shall be responsible for the restoration of any part of the site impacted, other than what is approved as a permanent improvement to the site.

12.3 Construction Drawings and Permitting Documentation

A. The Contractor shall be responsible for preparing construction drawings and site development documents for a complete and fully operable installation which is in compliance with this RFP and with the latest version of the National Electrical Code (or local electrical code, if applicable), local building codes, environmental laws, zoning and

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planning regulations or ordinances, land use restrictions, Federal Aviation Administration and Federal Communications Commission rules and regulations, State or County regulations governing road access and entry, OSHA guidelines and all other applicable local, State or Federal codes, regulations, laws and/or ordinances.

B. Modification or relocation of existing site equipment, structures or materials shall require prior approval by the County's Project Manager.

C. The Contractor shall provide preliminary construction drawings depicting the proposed construction within thirty (30) business days following execution of the contract.

D. The construction drawings shall be approved by the County prior to commencement of work.

E. Drawings shall illustrate, at a minimum, but not limited to:

   a. The location of the land parcel and the boundaries, utility easement, access road, the cleared area and the fenced compound

   b. Site features including fencing, access points, impervious areas, appropriate storm water features, storage facilities and staging areas, and security features

   c. The location of the tower and the equipment to be installed relative to any existing adjacent structures and property lines

   d. Soil boring test results

   e. Mechanical and structural details and specifications of tower foundations

   f. Electrical grounding systems

F. The Contractor shall be responsible for all permits, inspections, fees, documentation, filings, etc. associated with permitting and the construction of the communication site and work.

G. The Contractor shall prepare all specifications, plans, documents, and required forms, submittals, and exhibits required to obtain the necessary approval and permits from all regulatory agencies.

12.4 As-Built Drawings and Documentation

A. The Contractor shall keep up-to-date, marked-up prints of the Project construction drawings.

B. Markings indicating changes to the drawings shall be red or green and clearly visible.

C. The Contractor shall furnish four (4) original sets of "As-Built" drawings and one (1) soft copy in Adobe PDF format to the County's Project Manager at the completion of the Project.

D. The Contractor shall also provide Project drawings on a USB thumb drive in editable format, i.e., AutoCAD or Visio.

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E. Electrical breakers must be clearly marked using permanent labels.

12.5 Construction Materials

A. Materials specified by the Contractor shall be new and of first quality as defined in industry standards.

B. The Contractor shall not make substitutes unless prior approval has been obtained from the County Project Manager.

C. The Contractor shall be required to assume full responsibility for the specification of materials and equipment employed in construction of the Project and agrees to make no claims against the County for damages to such materials and equipment except for that which is solely caused by the County, their employees or agents.

D. The Contractor shall be responsible for managing the storage of all materials purchased and turned over to him/her by the County and shall receive all delivered items by suppliers at the job site or at a staging area to be furnished by the Contractor.

12.6 Workmanship

A. All workmanship shall conform to normal and accepted standards for the telecommunications industry and will be thoroughly examined by the County and/or their representatives at various stages during Project implementation and before Final System Acceptance.

B. The Contractor shall directly supervise all construction and installation of site structures and equipment including electrical wiring, towers structures and foundations, tower and site grounding and bonding systems, tower lighting systems, antenna mounts, etc.

12.7 Construction Work Coordination

A. The Contractor shall be solely responsible for the work performed by any subcontractor(s) and shall coordinate the work to ensure that interference between electrical conduits, cable support trays, grounding wire, structural members, and other work shall be avoided so that the Project is completed within budget and on schedule.

B. The Contractor shall coordinate their work schedule for site activities with the County to ensure that there is no interference to concurrent communications operations at the sites of work.

12.8 Clearing of Land

A. The Contractor shall be responsible for grubbing and the clearing of all brush, trees, organic matter, top soil, and any other obstructions including asphalt and concrete at the communication site and access road.

12.9 Communication Site Cleanup and Debris Removal

A. The Contractor shall be responsible for, and shall oversee the cleanup and the daily removal of all rubbish and construction debris from the work site.

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B. The Contractor shall supply a dumpster or similar trash storage/removal device where a substantial amount of construction debris is generated.

C. Upon completion of all work, the entire construction site area shall be left clean and free of trash, debris, mud, dirt, dust, scrap materials, and excess materials.

12.10 Sanitary Facilities

A. The Contractor shall be responsible for providing sanitary facilities at each work site for the duration of the Project.

12.11 Plantation Bay Communication Site Development Tasks

A. The County will furnish and install the communication shelter at the Plantation Bay tower site.

12.12 Farmton Communication Site Development Tasks

A. The Contractor shall furnish all equipment and services for the Turnkey development of the communications site as described in this section.

B. The Contractor shall certify that they are able to construct a Turnkey tower site to County specifications, on the land parcel specified in the Farmton area by the County, and that all costs to do so are included in their proposal, including permitting costs, to the extent that the land is zoned for the tower, a permit can be obtained for its construction, and there are no inaccuracies or discrepancies with actual conditions with the geotechnical report provided by the County. Should there be any cost not included in the proposal, it will be the Contractor's responsibility.

C. The Contractor shall furnish all equipment and services to develop the new "greenfield" communications site in the southern region of Volusia County.

D. The Contractor shall perform the following services:

a. Prepare site construction drawings showing the layout of all new and existing site components

b. Conduct site walks to collect pertinent information from the sites such as the location of Telco, power, existing facilities, etc.

c. Prepare zoning drawings that can be used to describe the proposed site installation in sufficient detail

d. Prepare record drawings of the site showing the as-built information

e. Perform construction staking around the site to establish reference points for proposed construction

E. The Contractor shall furnish all equipment and services at a minimum, to clear, develop and construct the following items at the communications site:

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a. Grub the communications site to within 50-feet of the fenced communication site compound

b. Construct a security gate with ASR signage at the road entrance to the site

F. The County will provide the Contractor with an access road to the tower site.

G. The Contractor shall furnish all equipment and services for the development of a communications system compound including, at a minimum, the following:

a. Construct a 100-foot x 100-foot fenced communications site compound

b. Furnish and install a 320-foot self-supporting communications tower and foundation piers

c. Furnish and install the foundation for a County-provided 12-foot X 20-foot prefab concrete communication shelter

d. Relocate and install the County-provided prefab concrete communication shelter

e. Furnish and install a Caterpillar brand, diesel fueled backup power generator system with outdoor enclosure, foundation, transfer switch, and belly tank

f. Furnish and install two (2) spare 2-inch conduits from the inside of the generator enclosure to the equipment shelter near the transfer switch that shall be capped and labeled on each end

g. Furnish and install a grounding system for the compound including tower, shelter, fencing, electrical service, backup generator, and any other compound equipment

h. Furnish and install an H-frame electric meter pedestal that supports six (6) utility meters each with 120/240VAC 200-Amp service to the County shelter and five (5) future tenants

i. Furnish and install all equipment required for the installation of the underground electrical utility service with pad-mounted transformer if required

12.13 Tower Structure General Requirements

A. The Contractor shall be responsible for providing the tower structures and foundations, and for furnishing and installing all associated hardware, lighting and safety systems and appurtenances.

B. All work shall be performed in accordance with good engineering practices and comply with all local, State and Federal codes, rules and ordinances.

C. The Contractor is required to adhere to local electrical code and building regulations.

D. The tower shall be a self-supporting model constructed with solid legs, and solid cross members.

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E. The fabrication and installation of the tower shall include all hardware, brackets, fasteners, climbing and safety systems, ancillary devices such as LED tower lighting systems, and engineering and installation services required to complete the Project.

F. The Contractor shall be responsible for ensuring that the tower meets all design criteria, labor services, guarantees and installation requirements contained in the Contractor's specifications, or in national or industry standards to which such specification refers.

G. The work to be performed shall include site preparation, grading, foundation installation, tower erection including climbing ladders and safety climb system, LED tower lighting systems, transmission line ladders and transmission bridges, lightning rods, grounding system and ground bus bars, and the touch-up of any scrapes or damage to the protective galvanizing.

H. All exothermic welds and any touch up repairs to galvanized components shall be coated using a cold galvanizing compound spray that contains a minimum of 93% zinc such as Rust-Oleum Cold Galvanizing Compound.

12.14 Reference Standards

A. All materials, design, and construction procedures shall be in accordance with the latest versions of the applicable industry standards, specifications:

a. American National Standard for Telecommunications:

i. T1.334-2002, Electrical Protection of Communications Towers and Associated Structures

ii. T1.313-2003, Electrical Protection for Telecommunications Central Offices and Similar Type Facilities

iii. T1.333.2001, Grounding and Bonding of Telecommunications Equipment

iv. ANSI-J-STD-607-A-2002, Commercial Building Grounding and Bonding Requirements or Telecommunications

b. ANSI/NFPA 780-2004, Standard for the Installation of Lightning Protection Systems

c. ASTM Standard A123, A153, B695

d. Harris AE/LZT 123 4618/1 Rev. F, Jun-17 Installation Manual

e. Motorola Standards and Guidelines for Communication Sites commonly known as "R56" version 68P81089E50-C of April 2017

f. Federal Aviation Administration Advisory Circular AC 70/7460-1L

g. EIA/TIA-222, latest revision, Structural Standard for Antenna Supporting Structures and Antennas, Telecommunications Industry Association (TIA)

h. NFPA 70: National Electric Code (NEC) - Latest Edition

i. NEMA - National Electrical Manufacturer's Association

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j. TIA-1019-A: Standard for Installation, Alteration and Maintenance of Antenna Supporting Structures and Antennas, Telecommunications Industry Association (TIA)

k. Building Codes for State of Florida and Volusia County, Florida

l. OSHA - Occupational Safety and Health Standards

i. 29 CFR Part 1010 - Occupational Safety and Health Standards

ii. 29 CFR § 1910.27 - Ladders

iii. 29 CFR Part 1926 - Safety and Health Regulations for Construction

B. The standards listed herein are meant to serve as a guide and shall be superseded by any and all current applicable industry standards and/or local codes at the time of the installation.

12.15 Geotechnical Exploration

A. The County has performed a geotechnical exploration of the Farmton site and the report has been provided in Appendix E: Farmton Tower Site Soil Boring.

12.16 Tower Foundation Construction and Design

A. Contractors shall base their proposed pricing for the foundation design upon the County-provided geotechnical report by Bechtol Engineering in Appendix E: Farmton Tower Site Soil Boring.

B. The County prefers pad and pier tower foundations.

12.16.1 Concrete Materials Testing

A. A concrete materials test shall be performed for each of the tower foundations.

B. This test shall include slump testing of the concrete materials and unconfined compressive strength testing of concrete cylinders molded at the time of the concrete pour.

C. Cylinders shall be provided for each foundation pier, and shall be tested at seven (7) and twenty-eight (28) days after the concrete pour.

D. A report of test results for slump testing and unconfined compressive strength testing shall be provided to the County immediately following each test.

12.16.2 Design Plans and Submittals

A. The required design documentation shall be approved, signed, dated, and sealed by a registered Professional Engineer (structural) qualified and licensed to practice in the State of Florida.

B. At no later than fifteen (15) calendar days prior to foundation excavations for the tower, the Contractor shall deliver signed and sealed copies of all required tower structure and foundation design documentation.

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C. Four (4) paper copies and one (1) soft copy in Adobe PDF format shall be provided to the County's Project Manager; these submittals are in addition to any documentation submittals that may be required for the permitting process.

D. The Contractor shall prepare and submit for County approval, all plans, specifications, foundation drawings and scale drawings of the tower depicting its overall height, the number and height of sections, the width of each section and antenna loading and their specified heights.

E. The Contractor shall submit for County approval, a profile view of the tower containing structural details, tower loads, and engineering notes.

F. Any documentation for the tower requested by the County for planning approvals shall be supplied in a timely manner.

G. In accordance with TIA-222, complete plans, assembly drawings, or other documentation shall be supplied showing the necessary marking and details for the proper assembly and installation of the components, including the member sizes, design yield strength of the structural members and the grade of structural bolts required.

H. Foundation reactions, when provided, shall be based upon factored loads.

I. The tower plans shall detail attachment height, antenna quantity, antenna model or type, mount quantity, mount type and line size that was included in the structural analysis.

J. Alternatively, the total effective projected area representative of all of the antennas and mounts at each elevation may be provided along with the associated line sizes.

K. The tower plans shall detail the following data for the site specified used in the structural analysis:

   a. Exposure Category C shall be used

   b. Tower and shelter shall be Risk Category III-IV structures

   c. Foundation reactions for the loading combinations considered

   d. Soil design parameters or source of data

L. Upon completion of tower construction, the Contractor shall deliver to the County, four (4) complete original copies of the tower and foundation as-built documentation, and a soft copy in Adobe PDF format, and in both DWF and DWG file formats.

M. All tower drawings shall become property of Volusia County when the tower is accepted.

12.17 Manufacturers' Certification and Support

A. All tower materials, hardware, and accessories shown on the plans and drawings shall be certified in writing by the tower manufacturer as being suitable for the purposes shown.

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B. The manufacturer's certification shall include the following statement: "The tower and foundation designs meet or exceed all requirements of the Volusia County RFP No. – 19-P-153JRD and the latest version of TIA-222."

C. The Contractor shall provide a letter from OEMs which guarantees manufacturer's support after the Warranty Period, and in the case of any conditions or problems which cannot be remedied by the Contractor, or in case the Contractor defaults on its warranty and/or maintenance agreements and obligations.

D. Subsystems are defined as various tower components including the FAA-approved tower lighting system.

E. The Contractor shall provide a written guarantee that all proprietary components and repair parts shall be available for a period of at least 10 years from the date of Project final completion.

12.18 Construction Notifications

A. The County shall be notified when the inspection of the various construction phases of the tower and foundation are required.

B. For the foundation, the Contractor shall notify the County as to construction status at the following times:

   a. Ten (10) days prior to start of excavation - notify as to the start date of construction and estimated completion date of construction

   b. The day of the completion of the reinforcement steel

   c. The day of the concrete pour

C. For the tower structure, the Contractor shall notify the County as to construction status at the following times:

   a. Ten (10) days prior to start of tower installation - notify as to the start date of construction and estimated completion date of construction

   b. The day the tower reaches the greatest height

   c. The day tower installation is completed

12.19 Materials

A. All equipment and materials, except with the expressed written permission of the County, shall be new and unused, meet telecommunications industry standards, and, where applicable, be registered with and approved by the Federal Communications Commission and the Federal Aviation Administration.

B. The County reserves the right to reject and require the return, at the Contractor's expense, of any and all components that are defective or fail to comply with the specification.

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C. Such rejects and/or returns will not invalidate the remainder of the contract. Rejections of materials for cause shall not provide an extension of time to the Contractor.

D. All materials shall conform to the provisions of TIA-222 where applicable, with respect to physical properties, manufacture, workmanship, and factory finishes.

12.20 Corrosion Protection

A. All fabricated tower assemblies and parts shall be hot-dipped galvanized after fabrication in accordance with the requirements of ASTM Standard A123.

B. All hardware and other attachments, including antenna mounts, climbing steps, transmission line support systems, etc. shall be galvanized per ASTM Standard A153 and B695 or constructed of inherently corrosion resistant materials suitable for such applications.

C. Other types of zinc coating or plating are not acceptable.

D. The Contractor shall furnish written certification that all installed tower components have been assembled and hot dipped galvanized in accordance with the minimum requirements outlined in the specifications herein.

12.21 Loads and Stresses

A. The design of the tower shall take into account dead and live loads induced by the structure itself and all appurtenances, and all stress applied to the tower and its appurtenances by wind forces.

B. The minimum safety factors listed in TIA-222 shall apply under the most severe combination of dead load plus live loading.

C. The tower design shall allow no tower member to be stressed more than 90%.

12.22 Appurtenances

A. Appurtenances shall include, but not be limited to, the following:

a. Tower-mounted equipment

b. Antennas and antenna mounts and hardware

c. Antenna platforms

d. Microwave antennas and radomes

e. Transmission lines and waveguides

f. Climbing ladders and safety climb system

g. Tower lighting systems

h. Transmission line ladders

i. Lightning rod

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12.23 Lightning Rod

A. The tower shall be equipped with a top-mounted lightning rod or "air terminal" system.

B. The lightning rod shall be installed to a height greater than the tallest appurtenance.

C. The lightning rod shall be bonded to tower steel.

12.24 Spline Ball Ionizer System

A. The tower shall be equipped with a top-mounted Spline Ball Ionizer (SBI) system for tower lightning protection at two levels on the tower.

B. The Spline ball systems shall be installed per the manufacturer's recommendations at the top of the tower structure and at the 150 foot level.

12.25 Antenna System and Transmission Line Loading

A. The towers shall be designed to support, at a minimum, the antenna systems, hardware and transmission lines in the following table.

320-foot Farmton Site						
Qty	**Model**	**Height (feet)**	**Mount**	**Line Type**	**Azimuth**	**Use**
1	Lightning Rod	320	Top			
3	BMR12	320 (Base)	6-foot Side Arm	(3) 1-5/8-inch LDF	Omni	P25 RX/Future
1	DB224	320 (Base)	6-foot Side Arm	7/8-inch LDF	Omni	VHF
2	4-FT², 70LBS	320 (Base)	6-foot Side Arm	(2) 1-1/4-inch LDF	Omni	Future
1	DB-806	320 (Base)	Pipe Mount	1/2-inch LDF	NA	800 MHz Test
1	TTA	315	To Tower	1/2-inch LDF	NA	P25 RX
3	BMR12	300 (Base)	6-foot Side Arm	(3) 1-5/8-inch LDF	Omni	P25 TX/Future
1	DB224	300 (Base)	6-foot Side Arm	7/8-inch LDF	Omni	VHF
2	4-FT², 70LBS	285 (Base)	6-foot Side Arm	(2) 1-1/4-inch LDF	Omni	Future
1	VHLP6-6W	285 (CL)	Pipe Mount	EWP52	TBD	Future
3	4-FT², 70LBS	260 (Base)	6-foot Side Arm	(3) 1-1/4-inch LDF	Omni	Future
1	DB224	260 (Base)	6-foot Side Arm	7/8-inch LDF	Omni	VHF Spare
1	Carrier Heavy	250 (CL)				Future
1	Carrier Heavy	235 (CL)				Future
1	VHLP6-6W	225 (CL)	Pipe Mount	EWP52	TBD	Future
1	VHLP6-6W	220 (CL)	Pipe Mount	EWP52	TBD	Future
1	VHLP4-6W	215 (CL)	Pipe Mount	EWP52	TBD	Future
1	VHLP6-6W	210 (CL)	Pipe Mount	EWP52	TBD	MW to Brevard ISSI
1	VHLP4-6W	200 (CL)	Pipe Mount	EWP52	TBD	Future
1	Carrier Heavy	185 (CL)				Future
1	HPX8-59	155 (CL)	Pipe Mount	EWP52	TBD	MW to Deltona
1	HPX8-59	145 (CL)	Pipe Mount	EWP52	TBD	MW to Edgewater

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2	4-FT², 70LBS	140 (Base)	6-foot Side Arm	(2) 7/8-inch LDF	Omni	Future
1	DB224	140 (Base)	6-foot Side Arm	7/8-inch LDF	Omni	VHF
1	Carrier Heavy	130 (CL)				Future
1	VHLP4-6W	120 (CL)	Pipe Mount	EWP52	TBD	Future
1	VHLP6-6W	115 (CL)	Pipe Mount	EWP52	TBD	Future
1	VHLP4-6W	110 (CL)	Pipe Mount	EWP52	TBD	Future

Table 25 - Farmton Tower Loading

12.26 Antenna Mounting Hardware

A. The Contractor shall engineer and supply 6-foot side arm brackets except where noted to support land mobile antennas mounted to the tower.

B. The side arm brackets shall include an integral vertical antenna mounting mast to permit proper installation of antennas.

12.27 Wind Speed Rating

A. The tower structure and foundations shall be designed and constructed to support the specified loads in accordance with the latest versions of EIA/TIA-222, the Florida Building Code, Volusia County's building or Florida Building Code, whichever more stringent, based upon a 150 mph ultimate wind speed.

B. Exposure Category C and Risk Category III shall be used for all structures.

12.28 Tower Twist, Sway, and Displacement

A. The towers shall be designed that when fully loaded the twist and sway limits at the microwave antenna mounting positions do not exceed their 10 dB degradation points under conditions of 60 mph service wind speeds as recommended by TIA-222 for the antennas specified in the antenna loading tables.

12.29 Transmission Line Support System

A. Cable ladders for transmission lines shall be installed to minimize tower face wind loading and shall not interfere with the climbing ladder or safety system.

B. A cable support system shall be designed to accommodate all proposed transmission lines plus a 100% growth factor.

C. Standard bolt-in hangers shall be used; snap-in hangers are not acceptable.

D. The cable support systems shall be of galvanized steel construction, and shall have mounting hardware of stainless steel or galvanized steel construction.

E. No drilling of the tower legs or cross bracing shall be required to install the cable support device.

F. The ladder structures shall be spaced at maximum 3-foot intervals to enable hangers to be installed at 3-foot intervals.

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G. Holes shall be provided in the tower support members, tower hanger adapter plates, or separate ladder structures to allow installation of bolt-in cable hangers.

H. The 3/8-inch and 3/4-inch mounting holes shall be precision punched or drilled and sufficiently separated to accommodate the bolt-in hangers.

12.30 Waveguide Bridge System

A. The Contractor shall design, furnish and install an efficient waveguide bridge system between the new tower and the new equipment shelter that protects the lines from falling debris, and will support 2-times the port capacity of the entry port panel including all proposed transmission lines and waveguides.

B. A grating type of waveguide bridge is required.

C. Galvanized steel construction shall be used for the waveguide bridge and its ancillary components.

D. The waveguide bridge system shall be designed to the same wind speed rating of the equipment shelter.

E. Microflect waveguide cushions, hangers, and crosses are the preferred method of attachment to the waveguide bridge.

F. The waveguide bridge shall be designed to support devices to properly attach the transmission lines at the intervals specified.

G. The waveguide bridge facility shall be installed so that it is self-supporting with its own foundations and not rigidly attached to the tower or equipment shelters.

H. The waveguide bridge shall be electrically isolated from the tower and the equipment building structures.

I. The waveguide bridge and support structures shall be bonded and grounded per the requirements of this RFP.

12.31 Climbing Ladder

A. The towers shall be provided with a climbing ladder, safety cable, hard hat and climbing belt.

B. The climbing ladder shall be attached to tower legs in a manner that would not interfere with the installation or maintenance of antennas, or installation of additional transmission lines on the cable ladder.

C. Similarly, the placement of cable ladder structures shall not interfere with the climbing facility.

D. It shall be possible to lockout the climbing facility to preclude unauthorized use.

E. The climbing facilities shall meet all OSHA requirements.

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12.32 Tower Lighting and Controls

12.32.1 Lighting

A. The Contractor shall provide an LED dual lighting system with the towers or an alternate system if specified by the FAA.

B. The lighting system shall be manufactured by Flash Technology, Vanguard Dual FAA L-864/L-865.

C. The lighting system shall conform to all FAA, NEC, local, and FCC Regulations, and shall further conform to the latest version of the FAA publication AC 70/7460.

D. The lighting system shall consist of two (2) top-mounted beacons placed in a manner that allows unobstructed view by aircraft through 360 degrees.

E. The beacons shall be attached directly to the tower structure.

F. The lighting system shall consist of medium intensity white beacons for daytime lighting and red obstruction lighting for nighttime operation.

G. The lighting system shall be a “No EMI or RF” interference, LED model.

H. The tower lighting system shall be powered from -48VDC or a -48VDC to 120VAC power inverter.

12.32.2 Tower Lighting Controls

A. Activation of the lighting systems shall be via a light sensitive, photoelectric type switch and controller that will activate the lights at dusk (or other cloud-darkened condition) and extinguish the lights at sunrise.

B. The controller shall automatically switch from red lights at sunrise to strobe lights and back to red lights when the sky darkens.

C. The tower lighting controller shall be housed inside the communications shelter.

12.32.3 Tower Lighting Wiring

A. Wiring for the tower lighting shall be provided and installed in conformance with the lighting manufacturer's specifications and in accordance with local electrical codes.

B. All cable ties used on the tower shall be stainless steel or weather resistant black acetal.

C. Standard white or black cable ties made of nylon or polypropylene shall not be used.

12.32.4 Tower Lighting System Failure Alarm

A. At a minimum, the lighting control system shall be equipped to provide individual, form "C" dry contact closure alarm indications of lighting failure:

   a. Tower light system failure

   b. White strobe failure

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c. Lights on Nighttime

d. Power failure

e. LED red beacon burnout

f. Sidelight failure

B. Upon failure of the lighting system, the alarm condition shall be reported to the County's existing NetGuardian site alarm system.

C. The Contractor shall coordinate the configuration and connection points of the alarm inputs/outputs with the County Project manager.

12.33 Power Isolation Transformers

A. The Contractor shall provide an isolation transformer in the event that the electrical service meter or sub-feed panel is located more than 50-feet from the communications equipment shelter's main disconnect.

B. The isolation transformer shall be properly sized and rated to support the equipment shelter electrical service, and shall be located outside the communications shelter as close to the shelters main disconnect as possible.

12.34 Standby Generator Requirements

A. Generators shall be Underwriters Laboratories Inc. (UL) rated, UL 2200 compliant.

B. Plans and specifications for standby power generators shall be furnished by the Contractor at all sites to be constructed pursuant to this RFP.

C. Generators shall be mounted on a concrete foundation in accordance with the manufacturers' specifications and local building codes for weather proofing, shock and vibration mounting, ventilation, cooling, fuel supply, and electrical and grounding connections.

D. It shall be the responsibility of the Contractor to provide plans and specifications in their proposal to install and test a complete and operational standby power generator and automatic transfer switch to be supplied pursuant to this RFP.

12.34.1 Type of Generator

A. All new gensets shall be Caterpillar brand.

B. The generator set equipment shall be a diesel fueled 60 kVA Caterpillar model and include the genset, controller, fuel tank, enclosure, and transfer switch.

C. The generators shall be driven by an engine that is liquid-cooled.

D. The engine shall operate at 1800 RPM and be equipped with shutdown devices for overspeed, high coolant temperature, and low oil pressure.

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E. The generator shall be provided with an outdoor enclosure, foundation, transfer switch and all accessories and equipment needed for the proper operation of the unit.

   a. These shall include, but not be limited to, cabinet housing, starting batteries, battery racks, battery chargers, battery cables, cooling systems, residential grade exhaust silencers with exhaust pipes and rain caps, automatic load transfer controls, electrical surge protection, automatic frequency regulators, vibration isolators, fuel lines, fuel regulator, fuel filter, fuel storage tank, conduits, junction boxes, wiring, instrument panels, remote alarm panels mounted inside equipment shelters, mounting bases, and fuel leakage detectors.

F. The generator shall be provided with an engine oil heater.

12.34.2 Generator Ratings

A. The output power rating of the generator shall be capable of delivering electrical power output to support the electrical equipment and shelter loads.

B. Unless otherwise specified, all generators shall be rated for a minimum of 60 kVA Standby output power.

12.34.3 Alternator

A. The alternator enclosure shall meet at a minimum, IP23 requirements for objects larger than 12 mm and dripping water at an angle of ± 60 degrees.

B. The alternator shall be capable of providing the specified power capacity at no less than a 0.8 power factor.

C. The output shall be 60Hz and commensurate with site requirements.

D. The alternator shall be directly connected to the engine flywheel housing and driven through a flexible coupling to ensure permanent alignment; gear driven alternators are not acceptable.

E. The alternator shall be a 105ºC rise model, single-bearing, self-aligning, four-pole, synchronous type and direct drive centrifugal blower for proper cooling and minimum noise, with a temperature compensated voltage regulator and a Permanent Magnet (PM) exciter system. No brushes will be allowed.

F. The voltage regulator shall provide no load to full load regulation of rated voltage within ± .25 % during steady-state conditions.

G. Frequency regulation shall be by an electronic isochronous governor (± 0.5%) from steady-state no load to steady-state rated load.

12.34.4 Installation

A. The Contractor shall provide and install all the electrical wiring necessary to connect the standby emergency power generator, automatic transfer panel, dry contact closure type alarm monitoring points, and equipment shelter electrical loads.

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B. All wiring shall meet or exceed manufacturer specifications for designated load requirements of the equipment to be supported.

C. All wiring shall be run in conduit and meet applicable NEC and local codes.

D. All electrical materials and work shall be inspected and approved by the building inspector with jurisdiction at the site of installation.

E. AC line circuit breakers, commensurate to the electrical interface required at each site, shall be provided.

12.34.5 Documentation

A. The following documentation shall be supplied to the County for each generator set and transfer switch supplied:

a. Specification and data sheets for the exact type and model generator and transfer switch supplied pursuant to this procurement, including all options and accessories

b. Manufacturer's certification and results of the factory testing

c. Manufacturer's warranty documents

d. Manufacturer's installation instructions

e. Shop drawings showing plan and elevation views of the equipment

f. Interconnection wiring diagrams showing all external connections required; with field wiring terminals marked in a consistent point-to-point manner

g. Operator and maintenance manuals that outline routine maintenance and troubleshooting procedures

h. Transfer switch manual and wiring diagram

B. The above documentation shall be included in each copy of the as-built documentation delivered to the County’s Project Manager.

12.34.6 Generator Warranty

A. A no-deductible warranty that provides for onsite service by a factory authorized service contractor shall be provided at a minimum, for the full Warranty Period of the communication system.

12.34.7 Generator Startup Service

A. A factory authorized service representative shall provide initial startup service and shall conduct acceptance testing at each site at which the equipment is installed.

B. Factory and field test records shall be furnished to County in both printed and electronic format.

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12.34.8 Generator Instrumentation, Control and Alarms

A. A control box local to the generator set shall be provided containing the start, run, and stop switches for manual operation, and remote control terminals for connection to the automatic load transfer control panel.

B. At a minimum, the generator controls shall include the following functions:

   a. Run/Auto/Stop Control

   b. Speed and Voltage Adjust

   c. Engine Cycle Crank

   d. 12 VDC operation

   e. The panel shall have an environmental sealed front face

   f. The panel shall display text alarm/event descriptions

C. At a minimum, the generator set shall include the following instrumentation:

   a. RPM

   b. DC volts

   c. Operating hours

   d. Oil pressure (psi, kPa or bar)

   e. Coolant temperature

   f. Volts (L-L & L-N), frequency (Hz)

   g. Amps (per phase & average)

   h. ekW, kVA, kVAR, kW-hr, % kW, PF

D. The generators shall shut down and lock out upon:

   a. Low oil pressure

   b. High coolant temperature

   c. Overspeed

   d. Emergency stop

   e. Failure to start (overcrank)

   f. Low coolant temperature

   g. Low coolant level

E. Alarm contacts shall be provided to allow transmission of status on fault alarms for any of the above conditions, plus:

   a. Control switch not in auto position

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b. Generator set is running, and when the generator is on-line under load conditions

c. Low oil pressure pre-warning

d. High coolant temperature pre-warning

e. Low engine temperature

f. Low battery voltage

g. High battery voltage

h. Low coolant

i. Low fuel, when the tank is less than 1/4 full

F. These alarm contacts shall be wired into and shall be reported by the alarm system being supplied pursuant to this procurement.

G. Form "C" alarm contacts shall be provided and connected to the alarm system to report loss of AC power, low battery voltage, high battery voltage, and power on.

12.34.9 Fuel Supply

A. The generator set shall utilize diesel as a fuel source.

B. The Contractor shall provide a sub-base "belly" fuel tank and all fuel system piping and regulation equipment sized as required for proper fuel flow to the engine.

C. Proposed fuel systems shall meet all applicable codes, standards, and requirements for such systems.

D. Proposed fuel systems shall include an FPS Series automated fuel management system that is properly-sized for the generator.

E. The tank shall be sized to provide a minimum of 72 hours of continuous operation at 50% rated generator output and shall not be less than 300-gallon capacity.

F. The generator and tank shall be installed and anchored in a manner that will prevent it from moving in a flood or storm surge condition.

G. Tank installation and all connections and plumbing to connect the fuel system to the engine shall comply with applicable codes and regulations, and shall comply with NFPA-37 (Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines) standard.

H. The fuel tank shall be easily accessible for refueling.

I. A fuel level sensing device shall provide a dry contact closure-type alarm monitoring point for the fuel tanks to issue an alarm when the tank is less than 1/4 full.

J. The Contractor shall fill the fuel tank prior to and after conducting the acceptance tests.

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K. The Contractor shall only use ultra-low-sulfur diesel (ULSD) fuel (no red dyed fuel) to initially fill the fuel tanks.

12.34.10 Weather Proof Enclosure

A. The generator shall be provided with the manufacturer's recommended outdoor weatherproof enclosure.

B. Enclosures shall be corrosion resistant appropriate for a coastal environment; powder-coated aluminum is preferred.

12.34.11 Exhaust System

A. An exhaust system with a "residential" type muffler shall be provided and sized as recommended by the manufacturer.

B. The Contractor shall mount the muffler so that its weight is not supported by the engine.

C. A flexible exhaust connection shall be provided as required for connection between the engine's exhaust manifold and the exhaust line, in compliance with applicable codes and regulations.

D. The Contractor shall mount and install all exhaust components as recommended by the manufacturer and as required to comply with all applicable codes and regulations.

E. All components shall be properly sized to ensure proper operation without excessive backpressure when installed.

F. The installation shall allow for pipe expansion and contraction.

12.34.12 Battery and Charger

A. A lead acid starting battery rated for the engine type to be supplied shall be furnished and installed with the generator set.

B. The battery shall be float charged by an appropriate sized voltage regulated charger which is powered by 120 VAC.

C. Float, taper, and equalize charge settings shall be provided.

12.34.13 Cooling System

A. A water-cooled engine is required.

B. The radiator shall be filled with a mixture of water and coolant in accordance with the engine manufacturer's recommendations.

C. A thermostatically controlled water jacket coolant heater shall be provided and installed in accordance with the manufacturer's recommendations.

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12.35 Manual and Automatic Transfer Switches

12.35.1 Manual Transfer Switch

A. The County will install a manual transfer switch to switch from a mobile trailer generator to the site generator. Cutler-Hammer Model # DT224UGK 240VAC 2 Pole Double throw safety switch 200 Amp.

B. The County will install a gooseneck connector on the outside of the shelter for portable generator hookup. Model # 0160603 made by Crouse-Hines.

12.35.2 Automatic Transfer Switch

A. A Caterpillar-brand automatic load transfer switch shall be provided to transfer the load between commercial power and the standby emergency power generator.

B. The automatic transfer switch shall be sized for proper operation in accordance with the transferred loads.

C. The transfer switch shall be completely factory assembled and shall contain electronic controls designed for surge voltage isolation, with voltage sensors on all phases of both input power sources.

D. Permanently attached manual control handles shall also be installed on the transfer switch.

E. The switch shall provide positive mechanical and electrical interlocking and mechanically held contacts.

F. Quick-make and quick-break contact mechanisms shall be provided for manual transfer under load.

G. The transfer switch shall be installed in a key locking, UL listed, NEMA cabinet to be mounted on an outside wall of the equipment shelter.

H. The switch shall be fully wired and integrated with the engine generator set in accordance with local electrical and fire codes.

I. All transfer switches and accessories shall be U.L. listed and labeled, tested per U.L. Standard 1008 and CSA Approved.

12.35.3 Transfer Switch Specifications

A. Transfer switches shall be rated to carry 100% of the rated current in the enclosure.

B. Transfer switches shall be double-throw, electrically and mechanically interlocked and mechanically held in both positions.

C. Main switch contacts shall be high-pressure silver alloy.

D. Each contact pole of the main transfer device shall be capable of handling both inductive and non-inductive loads and allow for inrush currents of 20 times the continuous rating.

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E. Contact assemblies shall have arc chutes for positive arc extinguishment.

F. Arc chutes shall have insulating covers to prevent interphase flashover.

G. Form "C" contacts shall be provided in each position of the transfer device for alarm reporting purposes.

   a. The contacts shall be connected to the alarm system for reporting transfer switch position (Source 1 or Source 2)

H. The transfer switch shall be rated for continuous operation in ambient temperature ranges of -40 to +50 degrees Celsius.

I. Transfer Switch # J3ADTSA20230FGXC,11BE,18RX,72EE,125A J Frame:

   a. Series 3ADTS Automatic Delayed Transition Switch 2 Pole with solid neutral 230 Amps, 240 V Group G Type 1 Enclosure

   b. Accessories: 11BE Feature Bundle includes Engine Exerciser/Event Log/RS485 enable/common contact

   c. 18RX-REX (Relay Expansion Module) with Norman and Emergency available 18G

   d. 72EE Quad – Ethernet Module with AES – 128-bit Encryption

12.35.4 Automatic Controls

A. Transfer switch control shall be designed for a high level of immunity to power line surges and transients.

B. The device shall be tested in accordance with IEEE Standard 587-1980 (or latest revision).

C. Controls shall have optically isolated logic inputs, and isolation transformers for AC inputs.

D. Relays shall be installed on all outputs.

E. Under-voltage sensors shall simultaneously monitor all phases of the standby power source and the commercial power source.

F. Pick up and drop out voltage settings shall be adjustable.

G. Voltage sensors shall allow for adjustment to sense partial loss of voltage on any phase.

H. Time delayed automatic start up, and transfer to, the emergency power generator system for any of the following conditions:

   a. Commercial power failure

   b. Under-voltage condition for any and all phases

   c. Overvoltage condition for any and all phases

   d. Over/under frequency condition for any and all phases

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I. Controls shall be provided with over-voltage sensors, adjustable from 100-130% of nominal input voltage to monitor the source.

J. An adjustable time delay shall be provided.

K. Automatic controls shall signal the engine-generator to start upon signal from normal source sensors.

L. A time delay start, variable from at least zero to 5 seconds, shall be provided to avoid nuisance start-ups.

M. Battery voltage starting contacts shall be gold, dry type contacts that have been factory-wired to a field wiring terminal block.

N. The switch shall transfer when the emergency source reaches the set point voltage and frequency.

O. A time delay shall be provided for transfer, which is variable from zero to 120 seconds.

P. Protection shall be provided for low and high generator voltage and over/under generator frequency.

Q. Appropriate sensors shall be provided to ensure that load is not transferred, or that load is disconnected, when these parameters are out of (adjustable) limits.

R. The switch shall re-transfer the load to commercial power after a time delay.

   a. This time delay shall be variable (adjustable) from zero to 30 minutes to avoid short engine run times.

   b. The re-transfer time delay shall be immediately bypassed if the emergency generator fails.

S. The generator shall continue to run after re-transfer in an unloaded condition (engine cool-down) for an adjustable period of approximately five (5) minutes after transfer to commercial power, and then automatically shut down.

T. Power for transfer operation shall be from the source to which the load is being transferred.

U. Diagnostic indicators shall be provided to allow the last successful step in the sequence of control functions to be pinpointed.

V. The present status of the control functions shall also be indicated. These functions, at a minimum, shall include:

   a. Source 1 OK

   b. Start generator set

   c. Source 2 OK

   d. Transfer timing

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e. Transfer complete

f. Retransfer timing

g. Retransfer complete

h. Timing for stop

12.35.5 Front Panel Control Devices

A. A key operated selector switch shall be provided which will provide the following functions:

a. Test - to simulate commercial power loss to allow testing of the generator set with or without transfer of the load

b. Normal - leaves the switch in its normal operating position

c. Retransfer - a momentary position, which will provide an override of the retransfer time delay and cause immediate return to the commercial power source (if available)

12.35.6 Exerciser Clock

A. An exerciser timer shall be provided to periodically operate the generator without user presence or intervention to maintain the reliability of the unit.

B. The timer shall be a user-programmable 168-hour (seven days) clock timer adjustable to day of week, time of day, and duration of exercise period.

C. The timer shall incorporate a selector switch to choose whether the engine-generator exercises with load or without load.

12.36 Fencing

A. The Contractor shall furnish and install an 8-foot high, commercial grade chain-link fence topped with concertina razor wire above the 8-foot level.

B. The fence mesh shall be 6 Gauge x 2" chain link galvanized fence fabric,

C. The fence shall be constructed with a two-section, 12-foot wide gate for vehicular access near the base of the tower to facilitate the installation of new antenna systems.

D. Line posts, rails and braces shall be galvanized steel and shall conform to the requirements of ASTM F1083 and ASTM F1043.

E. Fence posts and top rails shall be HF40.

F. The fence posts shall be spaced no more than 10-feet apart and shall be set in concrete which shall be of a commercial grade with a minimum 28-day compressive strength of 2500 psi.

G. For guyed tower installations, the same fencing shall be provided around all guy anchor points.

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H. The Contractor shall provide a multi-lock system at each site gate.

I. The multi-lock system shall be Stymielock or approved equivalent and shall support at a minimum six (6) different padlocks.

J. The Contractor shall provide a combination padlock for each site gate.

K. The locks on the shelter doors shall be Trilogy DL 3000 electronic door locks.

12.37 Site Landscaping

A. The Contractor shall be responsible for landscape grading, seeding, and mulching of the disturbed soil.

B. If planning authorities require foliage screening or other plantings at the tower sites, the Contractor shall arrange for professional planting of the required species and quantities of trees or shrubs.

C. The Contractor shall restore the site to its original condition following construction and installation activities.

12.38 Weed Barrier

A. The Contractor shall furnish and install weed prevention material covering the newly fenced area around the base of the new tower.

B. The weed prevention material shall be 6 mm plastic sheet.

C. For guyed tower installations, the same weed barrier shall be provided around all guy anchor points.

12.39 Compound Gravel

A. The Contractor shall furnish and install number 57 limestone, four (4) to six (6) inches deep throughout the newly fenced area and extending three (3) feet outside of the fence.

B. For guyed tower installations, the same compound gravel shall be provided around all guy anchor points.

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13. GROUNDING, BONDING AND SURGE SUPPRESSION

A. Contractor shall furnish and install the required grounding and bonding conductors, and make connections to grounding system at each communications site.

B. All grounding and bonding conductors shall be as straight as possible with a minimum number of bends.

C. The minimum bending radius of any grounding/bonding conductor shall be one foot.

D. The Contractor shall not make connections between dissimilar metals unless a material specifically approved for use with the dissimilar metals separates the conductors.

E. The Contractor shall place star or split lock washers under the head of the screws, bolts, or nuts and not between the conductive surfaces of the lug and the metal surface to be bonded.

F. The Contractor shall not use self-tapping sheet metal screws for attaching grounding conductors to any surface.

G. The Contractor shall utilize exothermic welding process such as Cadweld for all exterior and underground connections and shall utilize #2/0 AWG stranded tinned bare copper wire.

H. All ground rods and conductors shall be bonded using an exothermic welding process such as Cadweld.

I. Surface preparation recommendations of the manufacturer of the exothermic welding process to be used shall be followed.

J. All ground connections that are not exothermically welded shall use two-hole long barrel compression lugs.

13.1 Existing Communication Sites

A. For sites with existing structures and buildings, the Contractor shall make their best effort to locate a suitable, low-impedance ground point for interconnection of the protective grounding and bonding system and, at the County's option, the County shall review and approve the Contractor's grounding plan.

B. The connection point shall be the main building electrical service ground, building structural steel, and the tower ground system.

C. At any site where building structural members are used for grounds, connections to those main structural steel members shall be made with exothermic "Cadweld", Burndy press, or equivalent type connectors.

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13.2 New Communication Sites

A. All communications towers, equipment shelters, and communication sites shall be provided with a protective grounding and bonding system for the protection of equipment and personnel.

B. All sites shall have a single point external and internal ground system installed to provide the greatest possible protection against lightning strikes and power faults.

13.3 External Ground System

A. The external ground system shall consist of an equipment shelter ground ring, a tower ground ring, and a single well casing that shall be bonded together at a minimum of two points.

B. Site planning shall require that the main electrical service be brought into the shelter at a location as close to the transmission line entry port as practical.

C. All ground rods shall have a minimum length of 60 feet and a minimum diameter of 3/4-inches.

D. All ground rods shall be connected together using compression fittings (not threaded).

E. The ground rods shall be located no closer than 20 feet and no farther apart than 60 feet.

F. All ground rods shall be interconnected including the AC electrical service and telephone ground rods.

G. The minimum requirements for the quantity of ground rods installed shall be based upon the following:

   a. At least one (1) ground rod at each corner of all equipment shelters shall be installed

   b. Towers shall have a minimum of three (3) equally spaced ground rods connected to the tower ground ring

   c. The top of ground rods shall be 30-inches below finished grade

H. Inspection wells with removable lids shall be installed at the following junction points:

   a. Shelter to tower ground ring bond

   b. Shelter electrical utility ground location bond

   c. Inspection boxes shall be large enough to allow ground test readings to be taken with a clamp-on ground tester around the rod

13.4 Well Casing Ground Rod Enhancement

A. The County has implemented enhancements at some tower sites in an effort to minimize the potential for damaging lightning strikes that include the installation of a 2-inch, Schedule 40 galvanized steel pipe driven to a depth of 100 feet below grade level.

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B. The sites have a single point external ground system installed and the well casing ground is installed at a point near the intersection of the equipment shelter and tower structure ground ring systems.

C. The Contractor shall furnish and install one (1) well casing ground rod system consisting of a 2-inch, Schedule 40 galvanized steel pipe driven to bed rock or a maximum depth of 100 feet below grade level and bond it to the external ground system using #2/0 AWG stranded tinned bare copper wire and Cadweld connections as illustrated in Figure 3.

Figure 3 - Well casing ground rod system

D. All pipe threads are to be clean and coated liberally with PENETROX E.

13.5 Communication Shelter Internal Ground System

A. The shelter shall include an internal perimeter ground bus consisting of a #2 AWG tinned bare solid copper conductor, running along the perimeter of the room on each interior wall, at a maximum of 6-inches below the ceiling.

   a. The perimeter bus shall not form a continuous loop around the room and shall have an opening of 4-inches on the opposite side of the room from the interior master ground bus bar

   b. Insulated mounting standoffs shall be installed with a maximum separation of 2-feet to accommodate bends and to avoid sag

   c. Standoffs shall provide 1 to 2 inches of clearance from the wall

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d. Any splices of the interior perimeter ground shall be made with irreversible crimp connections

B. The Contractor shall bond all exposed noncurrent carrying metal parts of fixed equipment which could become energized to the internal perimeter ground bus.

C. At a minimum, the Contractor shall bond the following connections to the internal perimeter ground using green insulated #6 AWG stranded copper wire:

a. Electrical conduits, ventilation louvers and metal ductwork, transmission line pressurization equipment

b. Metal doors shall be bonded to the door frames using 1-inch wide braided copper flexible straps, and door frames shall be bonded to the internal perimeter ground bus

c. All metal racks and cabinets, including tower lighting cabinets, generator transfer switch cabinet, power and breaker panel cabinets, metal conduits, Telco/alarm panel demarcation block cabinet, metal HVAC lead-lag controller cabinets, cable trays, file and storage cabinets, metal desks and other exposed metal surface shall be bonded to the internal perimeter ground bus

D. The Contractor shall bond the cable tray sections together using green insulated #6 AWG stranded copper wire jumpers and two-hole long barrel compression lugs and bond the cable tray to the master interior ground bar.

E. All ground connections that are not exothermically welded shall use two-hole long barrel compression lugs.

F. Except for grounding of groups of electrical conduits, the Contractor shall not “daisy-chain” grounding and bonding jumpers.

G. The Contractor shall not make connections between dissimilar metals unless a material specifically approved for use with the dissimilar metals separates the conductors.

H. The Contractor shall place star or split lock washers under the head of the screws, bolts, or nuts and not between the conductive surfaces of the lug and the metal surface to be bonded.

I. The Contractor shall not use self-tapping sheet metal screws for attaching grounding conductors to any surface.

J. The Contractor shall remove paint from any painted surface before making ground connections and apply the appropriate antioxidant compound to the connection.

13.6 Ground System Resistance

A. All ground rods shall be interconnected to form a common ground grid system with a resistance of 5 ohms or less.

B. The Contractor shall be required to modify the grounding system to achieve a ground resistance of 5 ohms or less without chemicals.

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C. Ground test results shall be provided to the County once installation is complete.

13.7 Communications Shelter Ground Ring

A. A ground ring consisting of a #2/0 AWG stranded tinned bare copper wire shall be installed in a trench at a minimum depth of 30-inches below final grade at a maximum distance of 3-feet from the foundation of the equipment shelter where the equipment is installed.

B. All exterior and underground connections shall utilize the exothermic welding process such as Cadweld.

C. The ground ring shall be supplemented with copper clad steel ground rods.

13.8 Tower Ground Ring and Radial Ground System

A. The new communication towers shall be installed with a tower ground ring consisting of #2/0 AWG stranded tinned bare copper wire installed in a trench at a minimum depth of 30-inches below final grade at a maximum distance of 3-feet from the tower foundations.

B. The ground rings shall be supplemented with copper clad steel ground rods and all ground rods shall be interconnected and bonded together to form a common ground grid system.

C. The tower ground ring shall be supplemented by the addition of three (3) ground radials (minimum) that extend out in three (3) directions, spaced at approximately 120 degrees apart, from the tower base each with ground rod to a minimum distance of 80-feet, site conditions permitting.

D. The tower shall have a minimum of three (3) ground radials with copper clad steel ground rods spaced at least one (1) rod length apart along the radial.

E. The minimum requirements for the tower ground ring shall be based upon the following:

   a. The tower shall have a minimum of three (3) equally spaced ground rods connected to the tower ground ring

   b. The top of the ground rods shall be 12-inches below grade and an inspection well shall be installed at each ground rod

   c. All inspection wells shall be sufficient in diameter to allow for the use of a clamp-on ground tester

F. Inspection wells with removable lids shall also be installed at the tower ground ring to the shelter ground ring connection point(s). The inspection wells shall be sufficient in diameter to allow for the use of a clamp-on ground tester.

G. Each tower grounding tab shall be bonded to the tower ground ring by a #2/0 AWG stranded tinned bare copper conductor and be enclosed in non-metallic flex conduit.

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H. All grounding connections shall be made as straight as possible with a minimum number of bends.

I. The minimum bending radius of any ground wire shall be one foot.

13.9 Tower Grounding Tab

A. The tower base shall be equipped with grounding tabs for exothermically welding the tower base grounding conductor to the tower.

B. The grounding tabs shall be installed during the manufacture of the tower and prior to the galvanization process, and measure approximately 4-inch x 4-inch x 1/2-inch thick.

C. The tabs shall be attached to the tower base at a height of approximately 3-feet above the foundation.

13.10 Transmission Line Ground Bus Bars

A. The Contractor shall furnish and install a transmission line ground bus bar at the base of each transmission line ladder of the tower where the transmission lines sweep to the transmission line bridge.

B. The ground bars shall be a minimum size of 1/4-inch x 4-inch x 24-inch and shall be of tinned copper.

C. The ground bus bars shall be insulated from the tower steel and be equipped with an exothermically bonded #2/0 AWG stranded tinned bare copper pigtail which shall be exothermally bonded to the tower ring ground system.

D. The Contractor shall install the ground bus bars at a height just below each horizontal transmission line bridge to enable the termination of transmission line ground kits.

13.11 Transmission Line Waveguide Bridge Sections and Support Posts

A. The Contractor shall exothermically bond all transmission line bridge system support posts to the tower ground ring with #2/0 AWG stranded tinned bare copper wire.

B. Transmission bridge sections shall be exothermically bonded together and to the support posts with #2 AWG solid tinned bare copper wire.

13.12 Transmission Line and Waveguide Grounding, Bonding and Surge Protection

A. The Contractor shall follow good engineering and installation practices when performing the installation of equipment and lightning protection for the antenna systems.

B. The Contractor shall ground all provided transmission lines and waveguides with Andrew Corporation model ground kits with field attachable 2-hole crimp-on lugs, or approved equivalent.

C. The Contractor shall install the crimp-on lugs using the factory-recommended crimping device.

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D. The Contractor shall route all ground kits by the most direct path to the nearest grounding system conductor.

E. The Contractor shall separately attach and bond the transmission line and waveguide grounding kits to the tower using tower manufacturer approved methods, typically a mechanical clamp.

F. The Contractor shall install ground kits on each transmission line as follows:

   a. At the top near the antenna

   b. At intervals along the transmission line of no greater than seventy-five (75) feet

   c. At the tower transmission line ground bus bar near the point of transition from the tower to the cable bridge

   d. At the exterior ground bus bar at the cable entry port of the equipment shelter

G. The Contractor shall use Andrew Corporation Connector/Splice Weatherproofing Kit, or approved equivalent, for weatherproofing for transmission lines, waveguides and connectors.

H. The Contractor shall carefully wrap the cut in the jacket of the lines made for grounding with rubber weather proofing tape.

I. The Contractor shall cover the rubber tape with Scotch brand #88 all-weather vinyl electrical tape, or approved equivalent, per the manufacturer's instructions.

J. The Contractor shall wrap all ground kits connections at the transmission lines with overlapping layers of black outdoor electrical tape and protected with Scotchkote or equivalent outdoor treatment approved by the County.

K. A coaxial surge suppressor such as the Polyphaser series or equivalent shall be mounted and grounded at the entry port panel for each transmission line per the manufacturer's instructions.

L. All Contractor-provided outdoor antennas for control stations shall be equipped with a Polyphaser series surge suppressor or equivalent.

M. The Contractor shall cut the transmission lines to proper length for connection to the surge protection equipment.

13.13 Metallic Objects within the Site Compound

A. All exterior bonding/grounding conductors above grade shall be enclosed in non-metallic flex conduit wherever possible to protect the conductors from damage.

B. Any metallic object within the fenced compound or within five (5) feet of the fenced compound shall be bonded to the ground system.

C. If any object outside the compound is bonded to the ground system, any object within (5) feet of that object shall also be bonded.

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D. All bonds shall be made with #2/0 AWG stranded tinned bare copper wire, exothermically bonded to the ground system, and exothermically bonded to the object where practical.

E. At a minimum, the bond to the object shall be a two-hole lug connection.

F. The following items, if applicable, shall be bonded to the exterior ground system:

a. Fence posts and gate posts

b. Concrete foundations rebar

c. Transmission bridge support posts, metallic piping, and fencing

d. All railings, hand rails, and other metallic structures

e. Light posts or external light fixtures

f. Any other grounding systems present at the site

g. Skid or metal frame of the equipment shelter

h. Electrical and Telco service equipment and any other metallic shields, conduits, etc.

i. HVAC unit cabinets

j. Storage tanks within the compound whether above or below ground

13.14 Fence Grounding

A. The security fence shall be bonded to the shelter/tower grounding system.

B. Ground attachments to the fence posts shall be exothermic and located at each corner and gate post, and fence posts at intervals not to exceed 40-feet along the perimeter.

C. At each corner and gate post, a #2 AWG solid tinned bare copper wire shall be bonded to the razor wire and to the fence mesh at three (3) locations using split bolts.

D. At each grounded perimeter fence post, a #2 AWG solid tinned bare copper wire shall be bonded to the razor wire and to the fence mesh at three (3) locations using split bolts

E. The mesh shall be bonded to the copper wire at the top, center, and bottom of the fence and the copper conductor bonded to the exterior ground system.

F. For all walk through and vehicle gates, a #2/0 AWG stranded tinned bare copper wire shall be installed between the gate posts at a minimum depth of thirty (30) inches below grade level.

G. For all walk through and swinging vehicle gates, a #2/0 AWG stranded welding cable with black insulation shall be exothermically welded and installed between the gates and the gateposts.

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13.15 Control Station Antenna System Grounding

A. All Contractor-provided outdoor antennas for control stations shall be grounded as follows:

   a. It is preferred that the control station antenna system be bonded to building steel and connected back to the building ground system at the power service entrance

   b. At a minimum, the antenna mast and transmission line ground kit shall be grounded to a 5/8-inch X 8-foot copper clad steel ground rod driven to a depth of 12-inch below finished grade with #2 AWG solid tinned copper wire attached to the rod using exothermic welding

13.16 Lightning and Surge Suppression

A. It is the County's goal to reduce system damage and failure due to strikes or induced currents.

B. At a minimum, the Contractor shall comply with the surge protection practices depicted in this section.

C. All metallic conductors entering the equipment shelter shall be protected with the appropriate surge protection devices.

D. Surge suppressors shall be installed and bonded to the interior ground system as near as possible to the point of entry to the equipment shelter.

E. Surge suppressors shall be installed for the following:

   a. Commercial electrical service

   b. Tower lighting system - photo cell and lighting conductors

   c. Telephone, control, data conductors, fuel gauge conductors, etc. shall be protected with suitable surge protection devices

F. Any and all metallic conduits entering the equipment shelter shall be bonded to the interior grounding system.

13.16.1 Type 1 Primary IEEE Category C AC Power SPD

A. The primary AC power surge protection shall be an ANSI C62.41, Category C rated, UL1449 3rd Edition, Type 1, AC power Surge Protection Device (SPD) as required by this RFP.

B. The SPD shall be Advanced Protection Technologies (APT), Model TE01XAS15E1XD-W2, or approved equivalent.

C. The SPDs shall include large, 50kA Metal Oxide Varistors (MOVs), exceeding 32 mm in diameter.

D. The MOVs shall be configured to provide 100kA minimum protection for L-N and 50kA protection for L-G.

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a. Each MOV shall include a thermal safety disconnector(s)

E. The SPD Short Circuit Current Rating (SCCR) shall equal or exceed 100 kA or the available short circuit current, whichever is higher.

F. The Contractor shall ground the SPD using a green insulated #2 AWG stranded copper jumper bonded to the SPD and connected to the exterior shelter ground ring.

G. The Contractor shall install the devices in such a manner as to ensure that no connector wire lengths exceed 10-inches and to permit the replacement of protectors in a safe, convenient, and quick manner.

H. The Type 1 SPD shall be installed on the line side of the Main AC Disconnect.

I. For substitute product approval, the Contractor shall submit a certified, signed and sealed statement from a Florida Registered Professional Engineer that the device meets or exceeds all requirements of this section.

J. The SPD shall use field replaceable, modular technology.

K. Every MOV's operational status shall be monitored via visual indicator.

L. SPD shall include one (1) set of Normally Open/Normally Closed Form "C" dry contacts for remote monitoring.

M. The Contractor shall provide a spare MOV module with each Primary AC Power SPD.

13.16.2 Type 1 Secondary IEEE Category C AC Power SPD

A. The secondary AC power surge protection shall be an ANSI C62.41, Category C rated, UL1449 3rd Edition, Type 1, AC power SPD as required by this RFP.

B. The SPD shall be Advanced Protection Technologies (APT), Model TE01XDS104XA-W2, or approved equivalent.

C. The SPDs shall include directly connected MOVs exceeding 32 mm in diameter from L-N and L-G.

a. Each MOV shall include a thermal safety disconnector(s).

D. The SPD SCCR shall equal or exceed 100 kA or the available short circuit current, whichever is higher.

E. The Contractor shall ground the SPD using a green insulated #2 AWG jumper bonded to the SPD and connected to the interior perimeter split halo ground.

F. The Contractor shall install the devices in such a manner as to ensure that no connector wire lengths exceed 10-inch and to permit replacement of protectors in a safe, convenient, and quick manner.

G. The Type 1 SPD shall be installed on a 40-amp breaker on an open space in the load distribution center.

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H. For substitute product approval, the Contractor shall submit a certified, signed and sealed statement from a Florida Registered Professional Engineer that the device meets or exceeds all requirements of this section.

I. The SPD shall use field replaceable, modular technology.

J. Every MOV's operational status shall be monitored via visual indicator.

K. The SPD shall include one (1) set of Normally Open/Normally Closed Form "C" contacts for remote monitoring.

L. The Contractor shall provide a spare MOV module with each Primary AC Power SPD.

13.16.3 Tower Lighting Controller SPD

A. The tower lighting SPD system shall be based on ANSI/IEEE C62.41 and UL 1449 3rd Edition.

B. The SPD system shall provide a single common reference to ground to protected tower light circuits.

C. Low voltage and photocell SPDs shall be UL 497B Listed.

D. The SPDs shall be Advanced Protection Technologies (APT) TWL Series model or a County-approved equivalent, with the appropriately rated SPD devices selected for the protection of the specific tower light controller.

E. If the SPD unit is modular, then either the entire unit or each module may satisfy these criteria:

a. All 120 - 500 V (AC or DC) surge protection shall be Type 1 SPDs

b. All 12 - 24 V (AC or DC) surge protection shall be Type 2 SPDs, at a minimum

F. The Contractor shall mechanically connect the tower light controller SPD to the equipment shelter split halo copper ground.

G. The SPD shall be configured to protect all tower light lines (all markers, strobes, beacons, and photoelectric control device) entering the tower light controller.

H. The SPDs shall be installed in such a manner as to ensure that the ground connector wire length does not exceed 10-inches, and permits replacement of these protectors in a safe, convenient manner.

13.16.4 Low-Voltage and Copper Line Surge Suppression

A. All Telco leased line circuits, outdoor microwave Ethernet conductors, alarm conductors, fuel gauge and generator control circuits, security cameras, and all other copper conductors that enter an electronic equipment room or equipment shelter shall be equipped with electrical surge suppression devices utilizing the appropriate surge suppression device, Transtector series, Northern Technologies TMC-50, or equivalent.

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B. These arrestors shall be installed as close as practicable to the point of entry to the facility.

C. Surge suppression devices used on Telco leased circuits shall consist of both primary at the Telco demarcation and secondary at the point of cross-connection to communications equipment.

   a. Primary surge suppression devices shall use silicon avalanche diode technology, and shall be bonded to the equipment shelter/room ground system.

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14. BACKHAUL NETWORK

14.1 Primary Network Backhaul System

A. The Contractor shall furnish and install a new microwave radio system with a minimum of 155 Mbps capacity radios to all sites.

B. The backhaul network shall be designed to incorporate MPLS.

C. The backhaul network and MPLS system shall be capable and configured to support the County's current T1 circuits that support the EDACS analog and E&M circuits.

D. The County has a preference for microwave radio equipment from Microwave Networks Inc. (MNI) of Stafford, Texas.

E. The Contractor's backhaul design shall not incorporate leased lines of any type.

F. The Contractor shall design and implement a robust and redundant design that optimizes backhaul reliability and redundancy.

G. The microwave system shall utilize IP technology and FCC licensed 30 MHz channels on all paths.

H. The microwave system shall utilize adaptive code modulation to increase the network reliability.

I. The proposed microwave system shall consist of all indoor mounted radio equipment unless stated otherwise.

J. The new digital microwave communications network shall provide network connectivity support to include the following:

   a. Loop protected connectivity between all P25 transmit/receive communication tower sites and the network core locations

   b. A minimum of two microwave loops shall be provided in the design

   c. Utilize existing fiber optic connections between EOC-A and EOC-B and the primary and backup dispatch centers

   d. Provide native Ethernet and TDM protocols to support the County's legacy T1 circuits and channel banks linking the current EDACS system

K. Two additional structures may be used as part of the microwave system design:

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Tower Site	Coordinates	ASR	Structure (ft)	Overall (ft)
CR304	29-20-42.6 N 081-18-25.6 W	TBD (Flagler County)	350	379
EOC-B	29-08-13.0 N 081-08-38.3 W	1030518 (Crown)	305	325

Table 26 - Additional Tower Structures

L. The following conceptual design (Figure 4) has been provided; however, the Contractor may propose a design that provides greater reliability and availability that meets the following criteria:

   a. Minimizes path lengths and considers effects of rain fades

   b. Considers the effect of a loss of one or more paths on the two simulcast systems

   c. Considers structural capacity of the towers (see Section 12.1.1)

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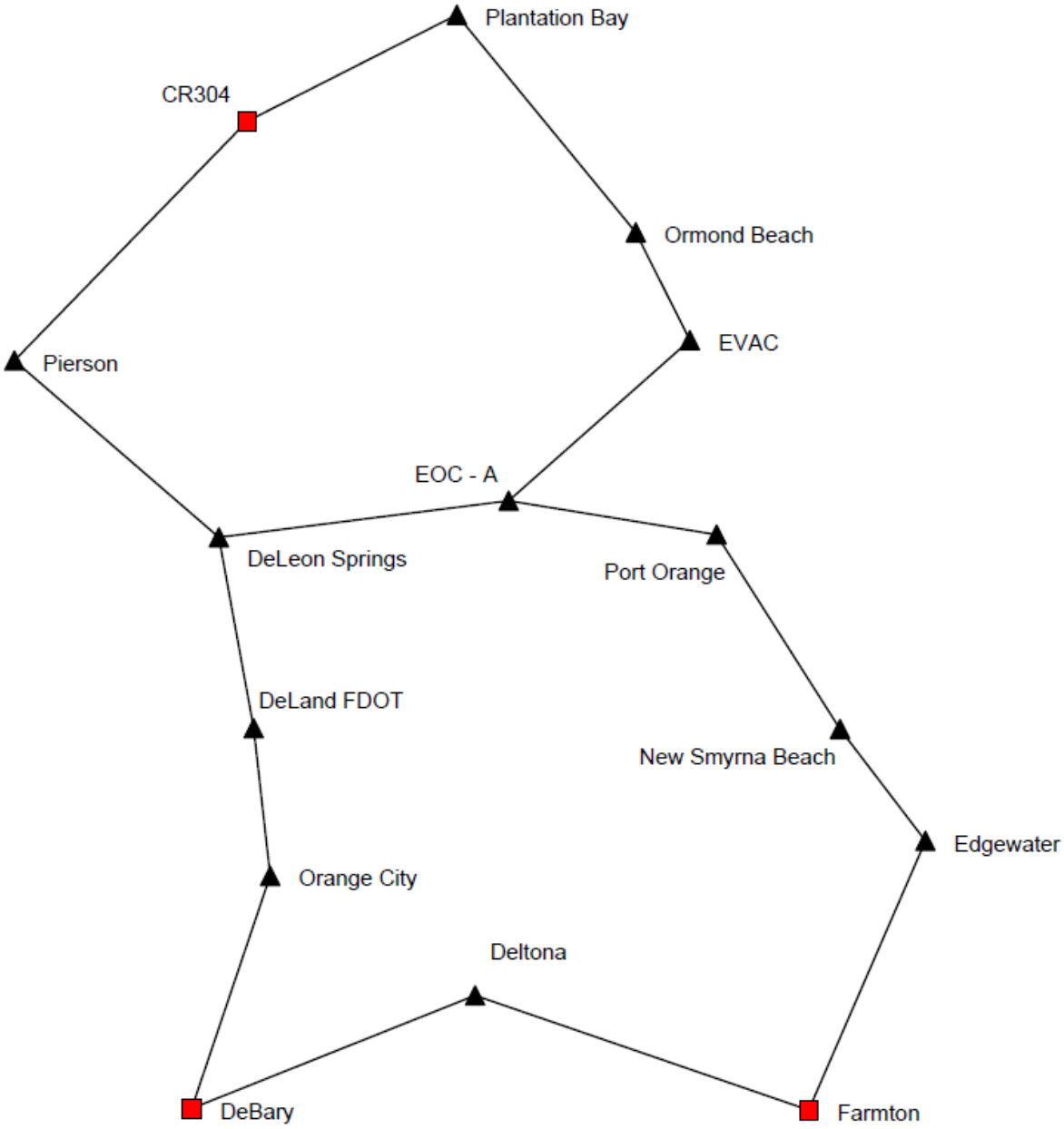

Figure 4 - P25 System Microwave Design Overview

M. The equipment shall be designed and manufactured for continuous duty operation in a fixed station application and, with proper maintenance, have an expected operational and maintenance service life of at least twenty (20) years.

N. All equipment and hardware including wiring, connectors, cabling, fuses, circuit breakers, brackets, fasteners, power supplies, surge suppressors, converters or conditioners, and other items that are necessary to provide a complete and fully functioning microwave network shall be furnished by Contractor.

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O. The manufacturer of the proposed equipment and the designer of the microwave system shall have at least ten (10) years of experience in designing and providing microwave equipment for critical communications system users such as public safety.

P. The Contractor shall design the system using a technology which will not suffer any degradation due to adverse weather conditions throughout all seasons of the year for any length of time no matter how short the duration.

Q. The Contractor shall include in the proposal a full and complete materials list and full and complete set of specifications describing the system as proposed.

14.2 Microwave Relay Site CR304

A. The Flagler County tower site CR304 will be utilized as a microwave relay site to close the microwave loop between the Plantation Bay site and the Pierson tower sites.

B. The microwave radios and supporting equipment will be installed in the Flagler County equipment shelter and the microwave antennas and waveguide will be installed on the Flagler County's tower at locations commensurate with the Contractors microwave system design.

C. The Contractor shall furnish and install a single microwave equipment rack containing the two (2) microwave radios, a dehydrator system, and a -48VDC battery power plant.

   a. The Contractor shall indicate in their proposal if their design requires more than one equipment rack

D. The Contractor shall bolt the equipment rack to the floor and bond the equipment rack to the existing shelter interior ground system.

E. The Contractor shall furnish and install the two (2) microwave antennas and waveguides.

F. The Contractor shall furnish and install three (3) 120VAC, 20A circuits to the existing electrical panels to provide two (2) circuits for the -48VDC rectifiers and one (1) circuit for the dehydrator.

14.3 Farmton to Brevard County ISSI Link

A. The County will implement a non-MHSB, 6 GHz microwave spur link to the Brevard County Scottsmoor tower site to support an ISSI connection between Volusia and Brevard Counties.

   a. The Brevard County Scottsmoor tower site is located in Mims, Florida, approximately 7.7 miles from the new Farmton site

   b. The 250-foot Scottsmoor tower site is ASR 1289099

B. The Contractor shall furnish and install both ends of the new microwave link.

C. The Contractor shall furnish and install a new microwave radio spur with a minimum of 45 Mbps capacity radios to a Brevard County communication site.

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D. The Counties have a preference for Proteus model microwave radio equipment from Microwave Networks Inc. (MNI) of Stafford, Texas.

E. The Contractor shall integrate the microwave radio network management functions into the County's loop microwave management system.

F. The microwave link shall utilize IP technology and FCC licensed 10 MHz channels.

G. The microwave link shall utilize adaptive code modulation to increase the network reliability.

H. Each end of the proposed microwave link shall consist of all indoor mounted radio equipment, a 6-foot microwave antenna, and 200-feet of elliptical waveguide.

I. For the Farmton site, the Contractor shall install the equipment along with the loop microwave equipment connecting to the new dehydrator and -48VDC power system.

J. For the Brevard Scottsmoor site, the Contractor shall furnish and install the following:

   a. A new 8-foot equipment rack bonded to the site's existing interior ground system

   b. A new -48VDC power system with 8-hr run time batteries connected to the site's existing electrical receptacles

   c. A new dehydrator and manifold

   d. A punch block for the termination of microwave local site alarms

14.4 Performance Objectives

A. The Contractor shall design all microwave paths for a minimum annual one-way, per-path availability of 99.999% or better for 10-6 BER at 128 QAM or better.

B. All microwave paths shall utilize licensed 30 MHz channels and provide a minimum throughput of 155 Mbps unless stated otherwise.

C. All microwave paths shall utilize adaptive code modulation.

D. Contractor shall utilize monitored hot standby radios for all spur paths unless otherwise specified.

E. It is recognized that the mathematical models to predict availability vary within the industry; consequently, the Contractor shall fully support its system design with the procedures, equations, and theories used to compute availability.

F. The proposed microwave system equipment shall be capable of providing the following protection options:

   a. Loop protection

   b. Non-protected

   c. Monitored hot standby

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d. Monitored hot standby space diversity

e. Split transmitter space diversity

f. Errorless Receive Switching - all receiver switching, including diversity path selection, shall be errorless

g. Adaptive code modulation with licenses up to 512 QAM minimum

G. The Contractor shall specify the mean time between failures (MTBF) of their proposed equipment.

14.5 Microwave Equipment Requirements

A. The Contractor shall propose monitored hot-standby (MHSB) transmitters and receivers for all spur paths unless otherwise specified.

B. The antenna input to MHSB receivers shall be via an asymmetrical minimum loss splitter favoring the "A" receiver to maximize fade margin.

C. The receiver outputs shall switch in an "errorless" manner.

D. The MHSB transmitters shall switch in a manner to provide proper termination and isolation to the standby transmitter.

E. The Contractor shall include provisions for testing and alignment of the standby units without disturbing the active units.

F. The transmitters and receivers shall be sensed and switched separately and both transmitters and receivers shall meet all requirements of these specifications when in the active mode (threshold of the "B" receiver excepted due to asymmetrical splitting).

G. The Contractor shall include in the proposal a description of the switchover operation during equipment failures.

14.5.1 Monitoring and Test Points

A. The microwave radio equipment shall contain readily identifiable test points and built-in metering to determine proper equipment operation and perform alignments and adjustments.

B. The system shall be capable of reporting alarm conditions as they occur and in plain language.

C. The Contractor shall provide alarm status monitoring terminals at the following locations:

a. 49 Keyton Drive facility

b. The IT Computer Room at the EOSCC

D. The Contractor shall equip each alarm status monitoring terminals with 22-inch LCD display monitors.

E. The Contractor shall provide the ability for remote monitoring of the system.

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14.6 DC Power Plant

A. The Contractor shall power the new microwave radio system equipment from the sites' -48VDC power plant system.

B. The equipment shall provide alarm outputs for use with the Network Control and Monitoring System and status indications for local observation.

14.7 Physical Path Surveys

A. Contractor shall physically survey all paths associated with the proposed microwave network.

B. Contractor shall document the location of antenna towers, building structures, significant trees, and other landmarks or improvements associated with the microwave paths.

C. Contractor shall provide all personnel, transportation, lodging, subsistence, surveying instruments, maps, etc., necessary to perform the work.

D. Survey activities shall include the determination of the following:

a. Critical obstructions on-path and potential obstructions off-path

b. Reflection points/unblocked reflections

c. Expected tree growth along paths

d. Site geographic coordinates

e. Site elevations

f. Recommended antenna heights based on survey data and performance objectives

E. The report shall include the following documentation:

a. Data determined by the survey activities

b. Antenna tower locations accurately depicted on 8-1/2-inch by 11-inch sections of USGS 1:24,000 topographic maps; proposed path azimuths shall be depicted relative to True North

c. Profile graphs for each path surveyed. Path profiles shall be constructed using terrain data from USGS 1:24,000 topographic maps and modified as necessary with field survey data

d. Path profiles shall consider radio refractive index and depict critical obstructions, reflection points, target height above obstructions, antenna centerlines, and line of sight

e. Site plot plans depicting structures, landmarks, tower orientation, and improvements

f. Proposed path azimuths shall be depicted relative to True North

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g. The plot plans are not meant to serve as construction drawings but should present the site features with reasonable accuracy

h. Recommendations relative to the viability of the proposed microwave paths, reliability considerations, and/or alternate routings, and any suggestions that Contractor deems appropriate to the Project

i. Site geographic coordinates referenced to NAD 83 and identified with notation NAD 83

j. Photos depicting the view of the path from each end

F. The Contractor shall coordinate with the County and its technical consultant in advance of its field activities.

G. Should it be obvious to the Contractor, during the field survey activity, that a particular path is not viable, the Contractor shall immediately advise the County and their technical consultant in writing.

14.8 Microwave Frequencies and Licensing

A. The paths for the digital microwave network shall utilize licensed Federal Communications Commission (FCC) Part 101 frequencies assigned for full-period service.

B. All new microwave frequencies shall be 30 MHz channel bandwidth.

C. The Contractor shall submit the results of the required path engineering analysis and the applications for FCC authorization to the County for review prior to filing with the FCC.

D. The Contractor shall be responsible for all costs associated with microwave frequency coordination.

14.9 Microwave Antenna Systems

A. The Contractor shall propose all new antennas, transmission line waveguides, mounting apparatus, and installation hardware for the digital microwave system.

B. The Contractor shall propose solid parabolic dish antennas and jacketed copper elliptical waveguides appropriate for the proposed frequency band.

C. The antenna system VSWR shall be commensurate with the return loss specification of the Contractor's microwave radio antenna.

D. The Contractor shall furnish appropriate mountings as required for support of the microwave antennas.

E. The Contractor shall provide the necessary equipment, hardware, labor, and procedures to securely attach the microwave antennas to the supporting structure.

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14.9.1 Microwave Antennas

A. Antennas shall be CommScope or engineer-approved equivalent, and sized according to the system design.

B. Each antenna shall be of solid construction with pressurized feeds and long-life radomes, and rated for a minimum survival wind speed of 155 mph.

C. Each antenna shall be equipped with two (2) side strut braces, for maximum wind speed survival.

14.9.2 Elliptical Waveguide Lines

A. The Contractor shall employ jacketed copper elliptical waveguide in continuous lengths for all waveguide transmission line runs and install in accordance with manufacturer's specifications; **NO splices are permitted**.

B. Flex waveguide shall not be used outdoors and the copper elliptical waveguide shall be properly supported and terminated directly to the antenna.

C. Waveguide shall be Andrew EW series as manufactured by CommScope, Inc. or engineer-approved equivalent.

14.9.3 Pressurization Equipment

A. The Contractor shall connect the new pressurized waveguides to the existing communication site dehydrator system.

B. The Contractor shall furnish and install all manifolds, gauges, and lines required to connect the new waveguides to the existing systems.

C. The Contractor shall provide a new dry air pressurization system for pressurization of microwave antenna feeds and elliptical waveguides at the new CR304, Plantation Bay, and Farmton communication sites.

   a. The pressurization system shall be an Andrew MT-050 series dehydrator with ML series Line Monitor as manufactured by CommScope, Inc. or engineer-approved equivalent.

D. The Contractor shall provide all required fittings, regulators and pressurization lines, gauges, distribution manifolds, and installation hardware to connect to the dehydrator systems.

E. The Contractor shall provide separate pressure metering for each waveguide pressurized.

F. The Contractor shall furnish and install pressure alarm connections to each site's existing NetGuardian monitoring and alarm system.

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14.10 Interruption of Network Backhaul Connectivity for Existing Systems

A. It is mandatory that the existing communication systems, applications and services currently supported by the existing microwave backhaul network be maintained uninterrupted during the upgrade of the microwave radio system.

B. The Contractor shall provide a detailed plan in their proposal to support all existing systems that utilize the current backhaul network.

C. The Contractor shall provide any and all necessary hardware, temporary leased lines and equipment as needed to maintain these networks.

14.11 Microwave Equipment Installation

A. The microwave system installation shall include all of the equipment formally specified for the new digital microwave system and all other equipment, hardware, and procedures required for a complete operating system.

B. The Contractor shall install the microwave radio equipment in accordance with the technical parameters of the FCC license authorizations and all applicable requirements of Part 101 of FCC Rules and Regulations.

C. The Contractor shall provide the necessary wiring, cabling, and conduits necessary for connection of the microwave station equipment to power and ground.

D. The Contractor shall firmly bolt equipment racks in place.

E. As necessary, the Contractor shall provide, route and terminate all cables to the demarcation blocks within the equipment shelter.

14.11.1 Antennas and Transmission Lines

A. The Contractor shall mechanically and electrically align the microwave antennas for proper operation.

B. The Contractor shall “finish-cut” all microwave transmission lines to length.

C. All pressurized transmission lines routed to indoor mounted pressurization and radio equipment shall have a downward slope from the antenna support structure to the radio equipment shelter (no drip loop).

D. The Contractor shall install pressurization systems to all elliptical waveguides provided by the Contractor and any unused pressurization ports shall be properly terminated.

E. During any microwave antenna installations, the Contractor shall immediately seal the antenna end of the waveguide with the appropriate pressure window.

F. The Contractor shall replace any waveguide that is not pressurized within twelve (12) hours of installation at no additional cost to the County.

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15. INSTALLATION REQUIREMENTS

15.1 General Installation Requirements

A. The Contractor shall review the existing site installations for compliance with their installation standards and include any required infrastructure upgrades in their proposal.

B. The Contractor shall execute all aspects of the system installation work in a professional manner.

C. The County is extremely concerned about the quality of the surge suppression and the grounding and bonding equipment and techniques, and the Contractor shall maintain the County's high standards while implementing the new system.

D. The Contractor shall perform the equipment installation required by this RFP in accordance with industry standards and best practices, and the manufacturers' installation standards and specifications for the equipment provided as well as other attachments, hardware, software, and procedures as may be required to ensure a complete installation which is in accordance with the standards of good engineering practice, all Federal, State, and County regulations and codes, and all building codes and ordinances in effect at the sites delineated in this RFP.

E. Proposal pricing in Exhibit B – Pricing Sheets shall include all installation hardware, brackets, braces, fasteners of all kinds, wiring, ancillary devices, procedures, and services required to install and/or interface components to provide a complete operating system, which fulfills the requirements of this RFP.

F. To the fullest extent possible, the existing radio communications systems shall remain in operation during installation of the new system and until the County provides Final System Acceptance and the notice to proceed with the decommissioning of the existing system.

15.2 Installation Approval

A. The Contractor shall obtain the County's approval to commence installation work on a site-by-site basis. No work shall commence without written approval from the County.

B. The Contractor shall provide complete descriptions and site drawings showing the proposed installations at each site at least thirty (30) days prior to beginning work at that site.

15.3 Equipment Storage and Delivery

A. The Contractor shall be responsible for delivering, storing, placing, handling, and disposition of materials.

B. All initially unused material, brackets, keys, hardware, accessories, etc. shipped with the equipment to be installed are to remain property of the County and as such, shall be retained by the County.

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15.4 Installation Coordination

A. The Contractor shall provide at least one Project Manager on site during critical phases of the system installation.

B. The Project Manager shall oversee all aspects of system implementation, including site preparation, equipment inventory, equipment programming, staging, installation, etc.

C. Other individuals may assist the Project Manager in various functions such as reporting, accounting, testing, optimization, etc., but this individual shall have primary responsibility for the performance of the system.

D. The Project Manager shall carefully coordinate all phases of the work with the County to provide site access and minimize equipment downtime.

E. The coordination efforts shall be between the Contractor, their subcontractors, and the County.

F. Access to the sites shall require prior coordination with the County.

15.4.1 Standards

A. Standard requirements for the installation of radio communications equipment shall include the adherence to the following standards at a minimum:

a. American National Standard for Telecommunications:

i. T1.334-2002, Electrical Protection of Communications Towers and Associated Structures

ii. T1.313-2003, Electrical Protection for Telecommunications Central Offices and Similar Type Facilities

iii. T1.333.2001, Grounding and Bonding of Telecommunications Equipment

iv. ANSI-J-STD-607-A-2002, Commercial Building Grounding and Bonding Requirements or Telecommunications

v. ANSI/NFPA 780-2004, Standard for the Installation of Lightning Protection Systems

b. National Electrical Code

c. The Contractor's installation standards and guidelines document, subject to approval by the County

15.5 Infrastructure Equipment Installation

A. The location and position of all equipment shall be in accordance with good engineering practices and conscious of County practices, such that optimum functional efficiency and equipment maintainability shall result.

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B. All equipment shall be arranged and installed in a coordinated fashion so that each item of equipment's intended function shall not be impaired due to the influence of adjacent equipment or environmental factors.

C. Sufficient space and clearance shall be provided so that service and maintenance of each item of equipment can be readily performed.

D. All external equipment inter-cabling, whether network, RF, electrical power, audio/data, or control cables and/or wiring, shall be labeled with pre-printed adhesive wire markers/labels.

E. Markers shall be placed at each end, and adjacent to the connector, plug, or terminus; this data shall be recorded in the installation documentation.

F. All equipment cables or cable bundles within the equipment shelter, to the greatest extent feasible, shall be neatly tied by means of plastic tie wraps and secured by clamps to flat surfaces.

G. For cables and/or wiring installed within the equipment shelter, markers shall be placed at the termination points of each cable.

H. All cable/wiring bundles exiting the equipment must do so through the top of the cabinets or racks.

I. Rubber grommets or other suitable protection shall be used at cabinet knockouts to protect the cable/wiring.

J. Splicing of network, RF, electrical power, audio/data, or control cable/wiring will not be permitted.

15.5.1 Equipment Mounting

A. To maximize space utilization and facilitate equipment maintenance, the Contractor shall install the fixed equipment in open 19-inch self-supporting racks or equipment cabinets.

B. The Contractor shall propose their recommended methods and provide an option for other methods that the County may prefer.

C. The Contractor shall install the equipment and connect the equipment to the appropriate AC and DC power sources.

15.6 Antenna Systems Installation

A. The Contractor shall include in their proposal, engineering drawings that depict the proposed installation including the antenna tower and antenna mounting assemblies, tower-top amplifiers, transmission lines, jumpers, connectors, ground kits, and surge suppression devices.

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15.6.1 Antenna System Documentation

A. During the Detailed Design Review, the Contractor shall provide figures and engineering drawings that detail the antenna tower and antenna mounting assemblies, tower-top amplifiers, transmission lines, ground kits and connectors, and surge suppression devices.

B. During the Detailed Design Review, the Contractor shall provide Tower Loading Detail drawings that depict the antenna tower with the antenna mounting locations and proposed equipment.

15.6.2 Communications System Antennas

A. The antennas shall be supplied with mounting brackets and all other suitable mounting hardware for mounting to a 6-foot sidearm mount located at the specified level of the tower.

B. All antenna mounts and sidearm mounts shall include a “stiff arm” or “tie-back” brace to prevent movement under high wind conditions.

C. All brackets, mast, clamps, and hardware shall be of a suitable material to minimize corrosion and rust.

15.6.3 Transmission Lines and Waveguides

A. Transmission lines and waveguides shall be cut to length.

B. The equipment shelter end of the coaxial transmission lines shall terminate at the surge suppression device on the interior of the transmission line entry port.

C. Each transmission line connector on the bulkhead panel shall be labeled to identify its associated antenna and mounting height.

D. The equipment shelter end of the microwave waveguide lines shall terminate at a point above the microwave equipment rack to allow a short flexible waveguide to be connected.

E. The Contractor shall meet all manufacturers’ cable bending specifications for strain relief purposes.

15.6.4 Hangers and Hoist Grips

A. All transmission lines and waveguides shall be securely fastened using the specified clamp devices.

B. Hanger clamps shall be approved by the cable manufacturer, installed per cable manufacturers’ instructions, and properly torqued.

C. The best commercially available parts shall be used, no snap-in hangers are allowed without written permission from the County.

D. Hoist grips shall be utilized at the manufacturer specified intervals for lifting the transmission line or waveguide.

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E. Hoisting grips shall be left in place to secure the cable.

15.6.5 RF Connectors

A. The mating surfaces shall remain tightly wrapped and protected until mating; touching with the fingers shall be avoided.

B. Silicone or other material shall not be used in the connectors.

C. All connectors shall be approved by the cable manufacturer, installed per the manufacturers' instructions, and be properly torqued.

D. Connectors shall be torqued to the manufacturer's specifications with a proper torque wrench; hand tightening is not acceptable.

E. After proper torqueing, outdoor connections shall be shrink tube protected to preclude corrosion.

F. Shrink tube size shall be in accordance with the manufacturer's recommendations for the size of line and type of connector.

15.6.6 Coaxial Jumpers

A. Coaxial jumper cables shall be used to interconnect all interference protection or multiplexing devices with the coaxial antenna transmission line and radio frequency equipment.

B. Coaxial jumper assemblies for each antenna shall be factory constructed to length.

C. The connection to the top of the transmission line shall be weather-protected and the connection to the antenna shall be weather-protected as described in this RFP.

15.6.7 Control Station Antennas

A. All control station antennas provided and installed by the Contractor shall be installed using solid-jacketed transmission line installed as specified in this RFP.

B. Directional or omni-directional control station antennas shall be provided as specified in this RFP.

15.7 Transmitter Combiners, Duplexers, and Filters

A. The transmitter combiner, duplexer, and filter components shall be mounted in an "open" floor mounted rack or integrated into equipment cabinets.

15.8 Receive Multicouplers and Tower-Top Amplifiers

A. The receiver multicoupler shall be installed within the equipment room and mounted in a rack or equipment cabinet.

B. All connectors, joints and fasteners shall be securely tightened and properly torqued to preclude RF noise generation.

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C. All exterior connections shall be weatherproofed per the transmission line requirements of this RFP.

D. The tower-top-amplifier enclosure shall be grounded in accordance with the manufacturer's specifications.

15.9 Infrastructure Equipment Removal and Disposal

A. The Contractor shall be responsible for the removal of all legacy system antenna systems and other infrastructure equipment following the transition of communications to the new P25 system and the successful completion of the 60-Day Performance Period.

B. All removed or de-installed equipment shall be properly stored at a location provided by the County unless the Contractor has offered a trade-in discount.

C. The Contractor shall provide a detailed inventory list of all equipment including model number, serial number, and location of removal.

D. The County encourages the Contractor to offer a salvage or trade-in credit in its proposal to take possession of any desired salvaged material.

E. The Contractor shall be responsible for the proper and legal disposal of all equipment not retained by the County or taken as trade-in by the Contractor.

15.10 Dispatch Center Installations

A. The Contractor shall provide any and all equipment racks, grounding and bonding, surge protection devices, and miscellaneous hardware and components required for completion of the dispatch console installations.

B. All installations shall be neat and professional and performed per the manufacturer's recommendations using good engineering practice with cables bundled, no sharp edges exposed, no wire exposed, etc.

C. All console related equipment shall be bonded to the dispatch facility ground systems.

D. All ancillary equipment such as base stations and control stations shall have their antenna systems and transmission lines bonded to ensure that any surge currents do not reach the communications equipment including the console operator positions and personnel.

E. Current dispatch equipment shall remain operational at every dispatch position until the P25 system is complete and operational or until dispatch capabilities are fully integrated into the new consoles.

F. All console operator position installations shall be performed in a manner and to a schedule that minimizes any interruptions to dispatch operations.

G. The Contractor shall coordinate all dispatch center installation and removal activities with County Project Manager.

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15.11 Voice Logging Recorder System Installation

A. The Contractor shall furnish and install any necessary devices, interfaces, firmware, and software to connect the trunking equipment to the voice logging recorder system equipment.

15.12 Site Cleanup and Restoration

A. At the completion of the installation work, the Contractor shall remove all decommissioned equipment, packaging materials, and all other debris as a result of the work and return the work areas to normal, broom-clean, conditions.

B. The Contractor shall repair or replace at its own expense damage to any equipment, floor tiles, rooftops, exposed surfaces, or other building facilities in any way. The County reserves the right to require that the Contractor replace damaged equipment instead of repairing damaged equipment.

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16. PERFORMANCE VERIFICATION AND ACCEPTANCE

A. Performance verification shall consist of factory tests, mechanical installation inspections, field specification tests, field functional and operational tests, radio coverage tests, and system reliability tests.

B. The Contractor, in conjunction with the County's technical personnel and representatives, shall verify and demonstrate to the County that all systems and equipment have been properly installed, optimized, tested, is fully functional, and meets all of the requirements specified within this RFP and any resulting Contract.

C. The Contractor shall perform radio coverage verification tests for the communication systems (Drive Testing) with participation of County radio personnel and the Omnicom Consulting Group.

D. The Contractor provided acceptance test plans used to conduct the performance verification tests shall be mutually agreed upon.

E. The Contractor shall provide all necessary technical personnel, transportation, and test equipment to conduct the performance verification tests.

F. The Contractor shall coordinate scheduling of the testing with the County.

G. The Contractor shall document all deviations, anomalies, and test or specification failures discovered during testing in a punch list and shall remedy them in a timely manner.

H. When the system has been fully installed, programmed, optimized, made operational, and fully tested by the Contractor according to the agreed upon test scripts, the Contractor shall notify the County in writing that the system is ready for acceptance testing.

I. The proposed Project Schedule shall include an appropriate amount of time for the County’s representatives to witness all such testing.

J. The Contractor shall record all test results in a standardized format.

K. The Contractor shall submit the format to be used for recording of test program data to the County for approval a minimum of thirty (30) days prior to testing.

L. Designated representatives of the County and Contractor shall witness, date and sign all recorded test results.

M. The Contractor shall present all test results in a single test report.

16.1 Factory Staging and Acceptance Testing

A. The Contractor shall provide a Factory Acceptance Test plan (FATP) to the County at least thirty (30) days prior to commencement of the Factory Acceptance Test (FAT) for County review and approval. Contractor shall stage all trunked and conventional communications and backhaul systems infrastructure equipment at the Contractor’s factory location within the continental United States for the purpose of conducting a FAT.

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B. All equipment shall be tested and confirmed to be functional within the factory-staged systems prior to acceptance of the FAT by the County.

C. At the Factory Staging and Acceptance Test, the Contractor shall assemble all of the infrastructure equipment required to make a fully operational communications system into the proposed configuration and tested as a system, including, but not limited to:

   a. Repeater site equipment

   b. Network and site controllers

   c. LAN/WAN/Backhaul and distribution equipment

   d. Alarm panels and control units

   e. Dispatch consoles

   f. Conventional gateways

   g. Network Control and Management Systems

D. The County, at their option, may supply representatives to witness the Factory Staging and Acceptance Test of the system.

E. At the successful completion of the Factory Staging and Acceptance Test, the Contractor shall ship the fixed network only after receiving written approval by the County.

F. Upon receipt of the County's approval, the fixed network equipment shall be delivered to the Contractor's facility by a method designed to safely transport sophisticated electronic equipment.

G. Upon arrival at the destination, the Contractor shall receive and inventory all equipment.

H. The Contractor shall be responsible for any interim storage required for the equipment prior to the delivery to the County sites for installation.

16.2 System Acceptance Test Plan

A. The Contractor shall provide a System Acceptance Test plan (SATP) to the County at least thirty (30) days prior to commencement of the System Acceptance Test (SAT) for all communication systems and backhaul communication systems equipment for establishing the basis of Final System Acceptance.

B. This plan shall form the basis for a mutually agreed upon SATP between the County and the Contractor.

C. The SATP shall, as closely as possible, resemble the "real life" application of the communications system and equipment.

D. An example of the topic areas to be analyzed in depth in the field shall include, but not be limited to, the following testing areas which must show conformance to all of the specifications contained in this RFP:

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a. Site facilities mechanical inspection, functionality and performance (e.g., generators, power plant systems, shelter alarms, fire suppression, grounding, etc.) for site facilities provided by the Contractor

b. Base station transceiver functionality, optimization, and performance

c. Network backhaul system functionality and performance

d. System infrastructure P25 features, redundancy systems and hardware, functionality, programming, and performance

e. Network Control and Management Systems functionality and performance

f. Dispatch console redundancy, functionality and performance

g. Interoperability and mutual aid interface infrastructure functionality and performance

h. P25 ISSI interoperability conformance

i. Conventional interface infrastructure functionality and performance

j. Radio coverage design verification

k. 60-Day Performance Period

16.3 Tower and Facilities Mechanical Inspection and Tests

A. The entire infrastructure installation effort shall be inspected by the Contractor and observed by the County for conformity to this RFP.

B. All equipment and installation services provided under the requirements of this RFP shall be inspected for compliance to the standards of good engineering practice, all Federal, State, and County regulations and codes, and all building codes and ordinances in effect at the sites delineated in this RFP.

C. Particular attention shall be paid to:

a. All installation work performed in a neat and professional manner in compliance with manufacturer's recommendations

b. All fasteners and hardware tightened and properly torqued

c. All backup power and electrical systems are properly installed and configured

d. Towers properly oriented, if applicable

e. Tower lighting systems fully operational, if applicable

f. All antennas are plumb and of proper pattern and orientation

g. All transmission lines are properly installed, labeled, and swept

h. Interior and exterior ground systems properly installed and bonded

i. All SPD/TVSS devices are appropriate for the application and properly installed and bonded

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j. All alarms, circuits, and electrical circuits and outlets are functional and properly labeled

k. Sites are free of debris and excavations backfilled, compacted, and restored

l. Shelters are free from water leaks or other mechanical issues

m. First aid kits and eye wash stations are installed, if applicable and provided

n. Fire extinguishers installed, if provided

16.3.1 Communication Site Tests

A. Any Contractor-provided equipment not meeting the requirements of this RFP included anywhere in this document, shall be immediately repaired or replaced by the Contractor.

B. The Contractor shall perform and the County shall observe the following tests that shall be performed on the appropriate equipment or structure.

C. These tests shall include, but not be limited to:

a. Earth ground resistance testing using triangulation method and approved test equipment

b. Generator testing under full load

c. Transfer switch operation to demonstrate loss of commercial power, operation of generator unit, and restoration of commercial power

d. Proper operation of UPS systems

e. Proper operation of site alarms, if applicable

f. Proper primary and secondary SPD devices properly installed, bonded, and alarmed

g. Power distribution panel circuit verifications and labeling

h. Proper installation of all lighting (building and tower) and associated switches and controls

i. Proper installation and operation of all timers, thermostats, and HVAC systems including cycling of units

j. Proper installation of fire detectors and fire extinguishers

16.3.2 Earth Ground System Resistance Test

A. The Contractor shall develop and furnish to the County in their proposal their electrical grounding system with plan drawings that depict their recommended grounding system including test wells.

B. The Contractor shall measure the new communication site ground system using a ground resistance test instrument prior to connection to any existing site grounds, the tower

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structure, fencing and utility service, and provide a detailed written report of the results to the County that also depicts the measurement at the specific location.

C. The report shall include details of the instrumentation (model, serial and date of last calibration) and local conditions (wet, dry, temp. etc.)

D. If local soil conditions do not allow the required ground resistance to be achieved by the grounding system requirements of this RFP, the Contractor shall notify the County in writing and discuss possible enhancements to achieve the required ground resistance.

16.3.3 Generator System Testing

A. Factory-trained representative(s) of the engine-generator set manufacturer shall start the generator and check the complete installation for operational compliance.

B. The Contractor shall provide the engine lubrication oil, as recommended by the manufacturer for operation under environmental conditions specified.

C. Upon completion of the initial start-up and system checkout, and in the presence of a County representative, the Contractor shall perform a load bank test of the generator system under full rated load for a period of at least one (1) hour to demonstrate the full rated load carrying capability, and the voltage and frequency stability, to the County.

D. The Contractor shall provide written certification attesting to proper installation and operation.

E. The Contractor shall provide three (3) hard copies and one (1) soft copy of the test results to the County.

16.3.4 DC Power Systems

A. The Contractor, in the presence of the County representative, shall perform testing on all DC power systems provided by the Contractor.

B. UPS systems may consist of a combination of DC power plants that are the primary power source at a site, conventional UPS systems providing 120/240 VAC output from a dedicated battery power source, and UPS systems providing 120/240 VAC output from power inverters that derive their power from the site's DC power plant.

C. Testing of these systems shall include but not be limited to:

a. Initial startup testing by the manufacturer representative

b. Normal operation

c. Simulated power outage to switch to generator power

d. Battery/UPS only operation at rated load for the required run times

e. Return to normal operation from the conditions above, battery charging current

f. Maintenance bypass

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g. Self-tests/diagnostic programming

16.4 Equipment Specification Testing and Antenna System Sweeps

A. Following equipment installation and optimization, the Contractor shall perform the following tests for each piece of equipment including any modified and/or relocated existing equipment.

B. A representative of the County shall witness these tests and the Contractor shall provide documentation of the test results to the County.

C. The Contractor shall adjust, repair or replace any Contractor-provided equipment not meeting their manufacturer's specifications or the requirements of this RFP at no additional cost to the County.

D. At a minimum, the Contractor shall perform the following tests:

a. Base stations in FDMA mode

i. Forward and reflected power at transmitter output

ii. Forward and reflected power at combiner output

iii. Insertion loss of combiner

iv. Receiver BER threshold sensitivity at the chassis

v. Receiver BER threshold sensitivity at the top-of-rack (multicoupler input)

vi. Receiver BER threshold sensitivity through the tower-top-amplifier test port in the presence of noise

b. Receiver multicoupler gain/loss.

c. Voting comparator, if applicable.

i. Operational tests to be conducted to verify end-to-end functioning of each channel of each comparator

d. Antenna systems and transmission line tests.

i. The Contractor shall perform Time Domain Reflectometry (TDR) and Return Loss testing for all LMR infrastructure transmit and receive system transmission lines and waveguides

ii. All infrastructure site antennas and transmission lines shall be tested from the interior of the equipment shelters at the input connector of the surge suppression device on each transmission line

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iii. This method of measurement shall indicate the Return Loss and any impedance irregularities in the transmission line/waveguide/antenna system

iv. Return Loss on any transmission line or waveguide shall not exceed 17.0 dB

e. RF control stations if applicable.

i. Forward and reflected power at transmitter output

ii. Proper programming of talk groups/channels, features and functions

f. Mobile radios if applicable.

i. Forward and reflected power at transmitter output

ii. Proper programming of talk groups/channels, features and functions

g. Portable radios if applicable.

i. Proper programming of talk groups/channels, features and functions

ii. Proper battery life in 10-10-80 duty cycle testing including proper operation of the radio's low battery indicator

16.5 Microwave System Testing and Verification

A. The Contractor shall furnish a microwave network acceptance test plan (ATP) for County review and approval at least thirty (30) days prior to the commencement of acceptance testing.

B. The ATP shall be provided with step-by-step instructions for every test listed below, and shall be pre-populated with the expected values for each test.

C. The Contractor shall perform and a County representative shall witness the following equipment installation and system optimization for the microwave subsystem.

D. These tests shall include, but not be limited to:

a. Microwave Radio

b. Visual mechanical inspection

c. Compliance with FCC Rules and Regulations including:

i. Transmitter power output

ii. Transmitter frequency

iii. Emission bandwidth

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iv. Antenna height

v. FCC licensing for microwave system

d. Net path loss shall be measured and recorded for each path

e. Received carrier power for each end of each path

f. Calculation of flat fade margin

g. Receiver threshold sensitivity for 10-6 BER

h. Transmitter fade and receiver fade margin verification tests

i. Adaptive modulation steps

j. Switches and indicators

k. Meter readings

l. Simulated local failures to demonstrate MHSB and loop switching

m. Antenna system VSWR/return loss across the frequency band of operation

E. Unless otherwise specified, the allowable threshold for the received signal level and the fade margin is +/- 2 dB to the extent that the path maintains the required minimum annual one-way, per-path availability of 99.999% or better for 10-6 BER.

F. Microwave Network Monitoring and Control System

a. RTU alarm monitoring points shall be tested using local display

b. Verify reporting of alarm remote terminals to workstation terminals. Verify performance of controls to remote terminals

c. Master terminal station shall be verified for proper programming, redundant switching, reporting, and report generation

d. Workstation terminals shall be demonstrated for proper operation and presentation of graphics and textual displays

G. The Contractor shall provide documentation of the test results in both hard copy and electronic PDF format on a flash drive.

H. The Contractor shall adjust, repair, or replace any equipment not meeting the requirements of this RFP without additional cost to the County.

16.6 800 MHz Radio Coverage Acceptance Testing

A. The County's acceptance of the radio coverage of the system shall be based upon the successful passage of the Coverage Acceptance Test Plan (CATP).

B. A final detailed CATP shall be provided to the County a minimum of sixty (60) days prior to commencement of the CATP.

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C. The Coverage Acceptance Tests shall not begin until the system has been fully optimized and the infrastructure optimization and tests have been successfully completed.

D. The Contractor shall submit the documentation of both the infrastructure and coverage test results to the County for review following successful completion of the coverage tests.

E. The Coverage Acceptance Tests shall only take place when full foliage conditions exist and rain shall not delay the scheduled testing.

F. Prior to initiation of the coverage testing process, the Contractor shall provide the County with written certification that the system has been properly installed and fully optimized so that CATP testing may begin.

G. The proposed schedule shall allow at least two (2) weeks for the County to review and approve the final test documentation after all testing has been completed.

16.6.1 CATP Requirements and Test Plan

A. The Contractor shall provide a draft version of the CATP in their proposal and the CATP shall reflect the proposed system design.

B. The CATP shall include at a minimum, the following items:

a. A schedule of the tasks and activities

b. An explanation and description of the methodology explaining how the test will be conducted

c. An explanation of how the results shall be tabulated and documented

d. An explanation of why the methodology of data gathering and the subsequent presentation of the results to the County shall "prove" that the coverage requirements of this RFP have been met

e. The Contractor’s expectation of the required County personnel, time commitments, and vehicle resources needed for the testing

f. A list of mobile and portable radio equipment required for the testing

C. The CATP shall consist of the following:

a. Automated inbound and outbound BER tests for P25 Phase 1 and 2

b. Automated outbound signal level measurements for informational purposes

c. Voice quality testing (DAQ) for informational purposes

D. The coverage acceptance tests shall be performed in all accessible areas of Volusia County and within the designated urban area polygons.

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E. The Contractor shall clearly show the calculations and assumptions used for compliance with coverage requirements specified in this RFP and the calculations shall be subject to County approval and review.

F. Once radio coverage testing has been initiated, system modifications such as replacement or reorientation of base station antennas or other factors that may influence radio coverage including software-roaming parameters, shall not be made without the County's approval.

G. Modifications affecting radio coverage will require that the radio coverage test be restarted from the beginning at no cost to the County.

16.6.2 CATP Pass/Fail Criteria

A. The CATP inbound and outbound automated BER tests shall be deemed to have passed if the number of test grids passing is divided by the total number of test grids and this percentage is equal to or greater than the contractual SAR percentage as proposed by the Contractor and agreed to by the County.

16.6.3 Automated BER and Informational Receive Signal Level Testing

A. The Contractor shall perform automated BER and informational RSL measurement tests for the EVENT system operating with Phase 1 and 2 modulation.

B. The test data shall be statistically significant for the required confidence level.

C. The automated tests shall incorporate critical time constants for communications system radio coverage testing.

D. A method of correlating the test location with the automated BER and RSL measurements, such as a GPS receiver, shall be employed to assist with analysis of the test data.

E. The test instrumentation shall be capable of operation in a vehicle for outbound tests.

F. A test route shall be developed by the Contractor and approved by the County.

G. Continuous data shall be recorded throughout the test route.

H. Transportation shall be provided by the County to any test locations not generally accessible by car if required.

I. The automated BER test for the Simulcast systems shall consider the effects of delay spread or Time Delay Interference (TDI) on the outbound test channel.

16.6.4 Attenuated Radio Configurations

A. The County will utilize new and existing mobile and portable radio equipment on the new P25 system.

B. The County understands and does not object if the Contractor utilizes their preferred mobile or portable radio equipment for the automated tests.

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C. To ensure consistency among the Contractor system designs, the County has specified the outdoor signal level on the street in Table 9. The baseline technical parameters in Table 9 for the user equipment shall be used for the performance of the CATP.

D. A modified (attenuated) portable radio will be used to simulate a portable radio operating on the hip outdoors and within buildings.

E. This process involves the attenuation of a portable radio to "normalize" the roof-mounted mobile 1/4-wave magnetic-mount test antenna and to simulate the performance degradation that would be encountered while operating the portable radio on the hip outdoors and within buildings having a specific loss characteristic.

F. The Contractor shall provide the 1/4-wave magnetic-mount test antennas for unobstructed placement on the vehicle roof used for the testing.

G. The Contractor shall install the appropriate signal attenuators to the portable test radio to emulate the following:

   a. The body losses experienced when the portable radio is worn on the hip which is specified by the County to be 10.3 dB for a 1/2-wave whip antenna

   b. The antenna adjustment of 3.0 dB for the 1/4-wave magnetic-mount test antenna when compared to a half-wave dipole

   c. The antenna height adjustment of 1.3 dB for a 1/4-wave magnetic-mount test antenna installed at 5.0-foot AGL

   d. The specified signal level margins for building loss in dB

H. The adjustment to the level of attenuation that may be required to "normalize" the receiver sensitivity specifications of the Contractor-provided test radio to match the -119.0 dBm at 5% BER chassis receiver sensitivity specification stated in this RFP.

I. The Contractor shall measure and demonstrate to County personnel, the 5% BER chassis receiver sensitivity threshold of their test radios and their recommended adjustments to normalize their test radio receiver to -119 dBm at 5% BER.

J. The Contractor shall provide a thorough description, including block diagrams and attenuation levels of the proposed test setup, and the County shall approve the Contractors final plan for attenuation.

K. The Contractor shall verify and the County shall witness that each portable radio to be used for the coverage test has been bench-tested and found to be operating within the manufacturer's specifications, and that the appropriate amount of attenuation is in place to "normalize" the Contractor-provided test radio.

L. The Contractor shall certify and the County shall witness that the testing methodology and modifications to the radios provide a loss equal to that of a portable radio operating in compliance with the requirements of this RFP.

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16.6.5 Test Equipment Records

A. The Contractor shall keep thorough records during the equipment testing process and shall provide a permanent record of the testing results to the County and its technical representative prior to the initiation of the coverage testing process.

B. The Contractor shall record the make, model, serial number, and calibration date for all radio test equipment used during the equipment testing process.

C. The Contractor shall record and track the make, model, and serial numbers of all radio equipment used during the radio coverage testing process.

D. This documentation shall include the versions of software and settings programmed into each of the radios.

16.6.6 Test Grids and Locations

A. The Volusia County jurisdictional area shall each be divided into grid squares with sizes as determined by the methodology defined in the latest version of TSB-88 to yield a 99% confidence level and 2% confidence interval in the resulting test data.

B. Each urban area polygon shall each be divided into grid squares with sizes as determined by the methodology defined in the latest version of TSB-88 to yield a 99% confidence level and 2% confidence interval in the resulting test data.

C. An automated BER and informational signal level test shall be performed in each grid where a portion of that grid is within the County boundary.

D. Testing points within each grid shall be chosen per the TSB88 defined methodology and the test point shall be randomly chosen as to not be biased by either party and, to the extent possible, should not cluster adjacent grid test points together.

16.6.7 Coverage Test Results and Report

A. For each grid tested, the outbound and inbound automated BER tests shall stand alone and shall be evaluated independently of each other in that failure of the outbound automated BER test does not constitute failure of the inbound automated BER test and vice versa.

B. For the automated BER test, a test location shall be considered to pass only if the inbound/outbound automated BER measurements are less than or equal to the maximum agreed upon thresholds for PASS/FAIL criteria for each modulation type tested.

C. The Contractor shall generate a CATP test report to summarize the test results and to recommend any corrective steps that may be required to fix any failed test.

D. The Contractor's CATP report shall include the following information for each test:

   a. Description of the test methodology and the final results

   b. Test location (map grid, address, or intersection for non-moving tests, etc.)

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c. The test results for the automated BER test by grids shall be displayed on 11-inch x 17-inch maps with the grids color keyed to indicate the test results; red indicates a grid failure, green indicates a passed grid, yellow indicates a grid that is not accessible or tested

d. Automated BER detailed test results by grid

e. Informational RSL measurements by grid

f. Paper and soft copies in PDF format of the data record collection work sheets

g. Date and time stamps on the test reports

h. Test conditions (type of radio, attenuation levels, antennas, equipment serial numbers, etc.)

i. The names of the test team participants

j. The raw drive test data shall be provided to the County for importing into coverage modeling software provided by the Contractor to the County.

E. The CATP test report documentation shall be presented to the County for review following the successful completion of the coverage tests.

F. The County shall have a minimum of twenty-one (21) days to review and approve the test documentation after all testing has been completed.

G. Successful completion of the CATP test shall occur when the Contractor has demonstrated to the satisfaction of the County that they have met their minimum SAR coverage commitment and the contractual requirements of the contract.

16.6.8 Coverage Test Failures

A. The CATP shall be considered to have failed if any of the following conditions are demonstrated:

a. Unauthorized changes to the system or equipment under test

b. The Contractor has failed to demonstrate that they have met their minimum SAR coverage commitment and the contractual requirements for outdoor radio coverage within the County jurisdictional area

B. If the system fails the coverage test as described above, then the Contractor shall take corrective action to resolve the coverage deficiencies and repeat the coverage tests.

C. The costs of the corrective actions shall be borne by the Contractor.

D. The costs associated with the repetition of the CATP shall be borne by the Contractor inclusive of the participation by the County's technical representative.

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16.6.9 Remedies for Coverage Failure

A. The Contractor shall bear the full responsibility and costs to mitigate the failure to demonstrate compliance with the contractual coverage commitment.

B. Remedies for failure of the CATP shall address the entire problem area and not be limited to correcting a portion of the failed area.

C. Remedies may not degrade areas of coverage that were previously accepted.

D. A retest of the CATP shall be conducted in any area (previously failed or not) potentially affected by the remedy in order to verify that the composite coverage is maintained.

E. All remedies must meet the performance, feature-functionality, and reliability requirements of this RFP.

F. At a minimum, these remedies may include the following:

   a. Modifications to the design of the system including the antenna and transmitter configurations which shall comply with any regulatory and zoning restrictions of Volusia County

   b. The complete inspection and testing of the transmit/receive antenna systems to determine that it meets all manufacturer and design specifications and was properly installed including antenna placement and orientation

16.6.10 In-Building Testing of Critical Buildings

A. Radio coverage testing of the designated Critical Buildings is listed in Appendix F: Critical Buildings

B. Appendix F: Critical Buildings testing shall be performed to verify radio coverage within the buildings, for informational purposes only, during the Coverage Acceptance Test Plan and the County may decide at a later date and at their expense, to implement solutions to mitigate coverage within buildings where coverage deficiencies are documented.

C. The Contractor shall document and report to the County any areas within these buildings where DAQ3.4 voice quality radio coverage is not available including classrooms, administration offices, elevators, vaults, hospital emergency rooms, and such.

D. A minimum of 20 locations within a building is required to establish 95% confidence within that building and locations tested from within a building requires 95% of the locations tested to PASS for the building to be considered as a PASS.

E. The County may elect not to test all planned test locations within a building, and locations that are not tested within the building for the convenience of the County shall be recorded as a PASS in the percentage calculation.

   a. This will be annotated in the data record and in the final CATP test report

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F. Should a building fail to demonstrate DAQ3.4 voice quality communications in any test location, then that location and building shall be identified as “not covered” and the Contractor shall note the failed location.

16.7 800 MHz FSA Radio Coverage Acceptance Testing

A. The County’s acceptance of the radio coverage of the system shall be based upon the successful passage of the Coverage Acceptance Test Plan (CATP).

B. The Coverage Acceptance Tests shall not begin until the system has been fully optimized and the infrastructure optimization and tests have been successfully completed.

C. The Contractor shall submit the documentation of both the infrastructure and coverage test results to the County for review following successful completion of the coverage tests.

D. The Coverage Acceptance Tests shall only take place when full foliage conditions exist and rain shall not delay the scheduled testing.

E. Prior to initiation of the coverage testing process, the Contractor shall provide the County with written certification that the system has been properly installed and fully optimized so that CATP testing may begin.

F. The proposed schedule shall allow at least two (2) weeks for the County to review and approve the final test documentation after all testing has been completed.

16.7.1 800 MHz FSA CATP Requirements and Test Plan

A. The Contractor shall provide a detailed CATP in their proposal and the CATP shall reflect the proposed system design and include at a minimum, the following items:

   a. A schedule of the tasks and activities

   b. An explanation and description of the methodology explaining how the test will be conducted

   c. An explanation of how the results shall be tabulated and documented

   d. An explanation of why the methodology of data gathering and the subsequent presentation of the results to the County shall "prove" that the coverage requirements of this RFP have been met

   e. The Contractor’s expectation including time commitments, of the required County personnel and vehicle resources needed for the testing

   f. A list of mobile radio equipment required for the testing

B. The Coverage Acceptance Test Plan shall consist of the following:

   a. Automated outbound signal level measurements

   b. Subjective voice quality testing

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C. The coverage acceptance tests shall be performed in all accessible areas of Volusia County.

D. The Contractor shall clearly show the calculations and assumptions used for compliance with coverage requirements specified in this RFP and the calculations shall be subject to County approval and review.

E. Once radio coverage testing has been initiated, system modifications such as replacement or reorientation of base station antennas or other factors that may influence radio coverage including software-roaming parameters, shall not be made without the County's approval.

F. Modifications affecting radio coverage will require that the radio coverage test be restarted from the beginning at no cost to the County.

16.7.2 CATP Pass/Fail Criteria

A. The CATP automated outbound RSL tests and the subjective voice quality test shall be deemed to have passed if the number of test grids passing is divided by the total number of test grids and this percentage is equal to or greater than the contractual SAR percentage as proposed by the Contractor and agreed to by the County.

16.7.3 Automated Receive Signal Level Testing

A. The Contractor shall perform outbound automated RSL measurement tests.

B. The test data shall be statistically significant for the required confidence level.

C. The automated tests shall incorporate critical time constants for communications system radio coverage testing.

D. A method of correlating the test location with the automated RSL measurements, such as a GPS receiver, shall be employed to assist with analysis of the test data.

E. The test instrumentation shall be capable of operation in a vehicle for outbound tests.

F. A test route shall be developed by the Contractor and approved by the County.

G. Continuous data shall be recorded throughout the test route.

H. Transportation shall be provided by the County to any test locations not generally accessible by car if required.

I. The raw drive test data shall be provided to the County for importing into the coverage modeling software provided to the County by the Contractor.

16.7.4 Subjective Voice Quality Testing

A. The Contractor shall perform a Subjective Voice Quality test for outbound transmissions to field test units from dispatch.

B. A method of correlating the test location of the Subjective Voice Quality test such as a GPS receiver, shall be employed to assist with analysis of the test data.

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C. The test evaluation team(s) shall consist of no less than two County representatives and one Contractor representative.

D. Each evaluation team shall score each test call for outbound voice transmissions as PASS or FAIL based on a minimum DAQ 3.4 voice quality.

E. The dispatcher must successfully transmit test messages in order to complete the test.

F. If the voice quality of the test messages meet or exceed the test criteria, as agreed by a majority of the test evaluation team, the grid is considered to have passed.

G. If the test messages do not meet the test criteria, as agreed by a majority of the test evaluation team, the grid is considered to have failed.

H. If a test call in a grid fails, a single "retry" will be permitted and the user may move up to 5-feet and repeat the test.

I. All retries shall be recorded on the scoring template and no more than 5% retries will be allowed for passage of this portion of the coverage test.

J. If the discrepancy cannot be rectified, then that grid will be set aside for discussion and evaluation.

K. The test message shall consist of a short message representative of typical public safety call durations and shall include the identification of the location being tested.

L. The suggested test message is "DISPATCH TO TEST TEAM #ONE, TESTING GRID YYY, LOCATION NUMBER XXX", followed by a short sentence or two, possibly from a newspaper or a Harvard Phrase, of approximately 8 to 20 words total.

M. To ensure that the message is understood, the test message may be repeated by the dispatcher.

N. If a member of the test team exhibits bias, they may be replaced.

16.7.5 Test Equipment Records

A. The Contractor shall keep thorough records during the equipment testing process and shall provide a permanent record of the testing results to the County and its technical representative prior to the initiation of the coverage testing process.

B. The Contractor shall record the make, model, serial number, and calibration date for all radio test equipment used during the equipment testing process.

C. The Contractor shall record and track the make, model, and serial numbers of all radio equipment used during the radio coverage testing process.

D. This documentation shall include the versions of software and settings programmed into each of the radios.

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16.7.6 Test Grids and Locations

A. The Volusia County jurisdictional area shall each be divided into grid squares with sizes as determined by the methodology defined in the latest version of TSB-88 to yield a 99% confidence level and 2% confidence interval in the resulting test data.

B. Testing points within each grid shall be chosen per the TSB88 defined methodology and the test point shall be randomly chosen as to not be biased by either party and, to the extent possible, should not cluster adjacent grid test points together.

16.7.7 Coverage Test Results and Report

A. For the automated RSL test, a test location shall be considered to pass only if the automated RSL measurements are less than or equal to the maximum agreed upon thresholds for PASS/FAIL criteria for each modulation type tested.

B. The Contractor shall generate a CATP test report to summarize the test results and to recommend any corrective steps that may be required to fix any failed test.

C. The Contractor's CATP report shall include the following information for each test:

a. Description of the test methodology and the final results

b. Test location (map grid, address, or intersection for non-moving tests, etc.)

c. The test results for the automated RSL test by grids shall be displayed on 11-inch x 17-inch maps with the grids color keyed to indicate the test results; red indicates a grid failure, green indicates a passed grid, yellow indicates a grid that is not accessible or tested

d. Automated RSL detailed test results by grid

e. Paper and soft copies in PDF format of the data record collection work sheets

f. Date and time stamps on the test reports

g. Test conditions (type of radio, attenuation levels, antennas, equipment serial numbers, etc.)

h. The names of the test team participants

i. Raw data is to be provided to the County for importing into coverage modeling software provided by the Contractor.

D. The CATP test report documentation shall be presented to the County for review following the successful completion of the coverage tests.

E. The County shall have a minimum of twenty-one (21) days to review and approve the test documentation after all testing has been completed.

F. Successful completion of the CATP test shall occur when the Contractor has demonstrated that they have met their minimum SAR coverage commitment and the contractual requirements of the contract.

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16.7.8 Coverage Test Failures

A. The CATP shall be considered to have failed if any of the following conditions are demonstrated:

   a. Unauthorized changes to the system or equipment under test

   b. The Contractor has failed to demonstrate that they have met their minimum SAR coverage commitment and the contractual requirements for outdoor radio coverage within the County jurisdictional area

B. If the system fails the coverage test as described above, then the Contractor shall take corrective action to resolve the coverage deficiencies and repeat the coverage tests.

C. The costs of the corrective actions shall be borne by the Contractor.

D. The costs associated with the repetition of the CATP shall be borne by the Contractor inclusive of the participation by the County's technical representative.

16.7.9 Remedies for Coverage Failure

A. The Contractor shall bear the full responsibility and costs to mitigate the failure to demonstrate compliance with the contractual coverage commitment.

B. Remedies for failure of the CATP shall address the entire problem area and not be limited to correcting a portion of the failed area.

C. Remedies may not degrade areas of coverage that were previously accepted.

D. A retest of the CATP shall be conducted in any area (previously failed or not) potentially affected by the remedy in order to verify that the composite coverage is maintained.

E. All remedies must meet the performance, feature-functionality, and reliability requirements of this RFP.

F. At a minimum, these remedies may include the following:

   a. Modifications to the design of the system including the antenna and transmitter configurations which shall comply with any regulatory and zoning restrictions of Volusia County

   b. The complete inspection and testing of the transmit/receive antenna systems to determine that it meets all manufacturer and design specifications and was properly installed including antenna placement and orientation

16.8 800 MHz RMACS Radio Coverage Acceptance Testing

A. The County's acceptance of the radio coverage of the system shall be based upon the successful passage of the Coverage Acceptance Test Plan (CATP).

B. The Coverage Acceptance Tests shall not begin until the system has been fully optimized and the infrastructure optimization and tests have been successfully completed.

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C. The Contractor shall submit the documentation of both the infrastructure and coverage test results to the County for review following successful completion of the coverage tests.

D. The Coverage Acceptance Tests shall only take place when full foliage conditions exist and rain shall not delay the scheduled testing.

E. Prior to initiation of the coverage testing process, the Contractor shall provide the County with written certification that the system has been properly installed and fully optimized so that CATP testing may begin.

F. The proposed schedule shall allow at least two (2) weeks for the County to review and approve the final test documentation after all testing has been completed.

16.8.1 800 MHz RMACS CATP Requirements and Test Plan

A. The Contractor shall provide a detailed CATP in their proposal and the CATP shall reflect the proposed system design and include at a minimum, the following items:

a. A schedule of the tasks and activities

b. An explanation and description of the methodology explaining how the test will be conducted

c. An explanation of how the results shall be tabulated and documented

d. An explanation of why the methodology of data gathering and the subsequent presentation of the results to the County shall "prove" that the coverage requirements of this RFP have been met

e. The Contractor's expectation including time commitments, of the required County personnel and vehicle resources needed for the testing

f. A list of mobile radio equipment required for the testing

B. The Coverage Acceptance Test Plan shall consist of the following.

a. Automated outbound signal level measurements

b. Subjective voice quality testing

C. The coverage acceptance tests shall be performed in all accessible areas of Volusia County.

D. The Contractor shall clearly show the calculations and assumptions used for compliance with coverage requirements specified in this RFP and the calculations shall be subject to County approval and review.

E. Once radio coverage testing has been initiated, system modifications such as replacement or reorientation of base station antennas or other factors that may influence radio coverage including software-roaming parameters, shall not be made without the County's approval.

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F. Modifications affecting radio coverage will require that the radio coverage test be restarted from the beginning at no cost to the County.

16.8.2 CATP Pass/Fail Criteria

A. The CATP automated outbound RSL tests and the subjective voice quality test shall be deemed to have passed if the number of test grids passing is divided by the total number of test grids and this percentage is equal to or greater than the contractual SAR percentage as proposed by the Contractor and agreed to by the County.

16.8.3 Automated Receive Signal Level Testing

A. The Contractor shall perform outbound automated RSL measurement tests.

B. The test data shall be statistically significant for the required confidence level.

C. The automated tests shall incorporate critical time constants for communications system radio coverage testing.

D. A method of correlating the test location with the automated RSL measurements, such as a GPS receiver, shall be employed to assist with analysis of the test data.

E. The test instrumentation shall be capable of operation in a vehicle for outbound tests.

F. A test route shall be developed by the Contractor and approved by the County.

G. Continuous data shall be recorded throughout the test route.

H. Transportation shall be provided by the County to any test locations not generally accessible by car if required.

I. The raw drive test data shall be provided to the County for importing into the coverage modeling software provided to the County by the Contractor.

16.8.4 Subjective Voice Quality Testing

A. The Contractor shall perform a Subjective Voice Quality test for inbound and outbound transmissions to field test units from dispatch.

B. A method of correlating the test location of the Subjective Voice Quality test such as a GPS receiver, shall be employed to assist with analysis of the test data.

C. The test evaluation team(s) shall consist of no less than two County representatives and one Contractor representative.

D. Each evaluation team and dispatcher shall score each test call for inbound and outbound voice transmissions as PASS or FAIL based on a minimum DAQ 3.0 voice quality.

E. Both the dispatcher and the portable radio user must successfully transmit and receive test messages in order to complete the test.

F. If the voice quality of the test messages meet or exceed the test criteria, as agreed by a majority of the test evaluation team, the grid is considered to have passed.

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G. If the test messages do not meet the test criteria, as agreed by a majority of the test evaluation team, the grid is considered to have failed.

H. If a test call in a grid fails, a single "retry" will be permitted and the user may move up to 5-feet and repeat the test.

I. All retries shall be recorded on the scoring template and no more than 5% retries will be allowed for passage of this portion of the coverage test.

J. If the discrepancy cannot be rectified, then that grid will be set aside for discussion and evaluation.

K. The test message shall consist of a short message representative of typical public safety call durations and shall include the identification of the location being tested.

L. The suggested test message is "TEST TEAM #ONE, TESTING BUILDING YYY, LOCATION NUMBER XXX", followed by a short sentence or two, possibly from a newspaper or a Harvard Phrase, of approximately 8 to 20 words total.

M. To ensure that the message is understood, the test message may be repeated by the dispatcher or portable radio user who will then make a similar test call.

N. The suggested response test message is "TEST TEAM #ONE, CONFIRMING BUILDING YYY, LOCATION NUMBER XXX", followed by a short sentence or two possibly, from a newspaper or a Harvard Phrase, of approximately 8 to 20 words total.

O. If a member of the test team exhibits bias, they may be replaced.

16.8.5 Test Equipment Records

A. The Contractor shall keep thorough records during the equipment testing process and shall provide a permanent record of the testing results to the County and its technical representative prior to the initiation of the coverage testing process.

B. The Contractor shall record the make, model, serial number, and calibration date for all radio test equipment used during the equipment testing process.

C. The Contractor shall record and track the make, model, and serial numbers of all radio equipment used during the radio coverage testing process.

D. This documentation shall include the versions of software and settings programmed into each of the radios.

16.8.6 Test Grids and Locations

A. The Volusia County jurisdictional area shall each be divided into grid squares with sizes as determined by the methodology defined in the latest version of TSB-88 to yield a 99% confidence level and 2% confidence interval in the resulting test data.

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B. Each urban area polygon shall each be divided into grid squares with sizes as determined by the methodology defined in the latest version of TSB-88 to yield a 99% confidence level and 2% confidence interval in the resulting test data.

C. Testing points within each grid shall be chosen per the TSB88 defined methodology and the test point shall be randomly chosen as to not be biased by either party and, to the extent possible, should not cluster adjacent grid test points together.

16.8.7 Coverage Test Results and Report

A. For the automated RSL test, a test location shall be considered to pass only if the automated RSL measurements are less than or equal to the maximum agreed upon thresholds for PASS/FAIL criteria for each modulation type tested.

B. The Contractor shall generate a CATP test report to summarize the test results and to recommend any corrective steps that may be required to fix any failed test.

C. The Contractor's CATP report shall include the following information for each test:

a. Description of the test methodology and the final results

b. Test location (map grid, address, or intersection for non-moving tests, etc.)

c. The test results for the automated RSL test by grids shall be displayed on 11-inch x 17-inch maps with the grids color keyed to indicate the test results; red indicates a grid failure, green indicates a passed grid, yellow indicates a grid that is not accessible or tested

d. Automated RSL detailed test results by grid

e. Paper and soft copies in PDF format of the data record collection work sheets

f. Date and time stamps on the test reports

g. Test conditions (type of radio, attenuation levels, antennas, equipment serial numbers, etc.)

h. The names of the test team participants

i. Raw data is to be provided to the County for importing into coverage modeling software provided by the Contractor.

D. The CATP test report documentation shall be presented to the County for review following the successful completion of the coverage tests.

E. The County shall have a minimum of twenty-one (21) days to review and approve the test documentation after all testing has been completed.

F. Successful completion of the CATP test shall occur when the Contractor has demonstrated that they have met their minimum SAR coverage commitment and the contractual requirements of the contract.

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16.8.8 Coverage Test Failures

A. The CATP shall be considered to have failed if any of the following conditions are demonstrated:

   a. Unauthorized changes to the system or equipment under test

   b. The Contractor has failed to demonstrate that they have met their minimum SAR coverage commitment and the contractual requirements for outdoor radio coverage within the County jurisdictional area

B. If the system fails the coverage test as described above, then the Contractor shall take corrective action to resolve the coverage deficiencies and repeat the coverage tests.

C. The costs of the corrective actions shall be borne by the Contractor.

D. The costs associated with the repetition of the CATP shall be borne by the Contractor inclusive of the participation by the County's technical representative.

16.8.9 Remedies for Coverage Failure

A. The Contractor shall bear the full responsibility and costs to mitigate the failure to demonstrate compliance with the contractual coverage commitment.

B. Remedies for failure of the CATP shall address the entire problem area and not be limited to correcting a portion of the failed area.

C. Remedies may not degrade areas of coverage that were previously accepted.

D. A retest of the CATP shall be conducted in any area (previously failed or not) potentially affected by the remedy in order to verify that the composite coverage is maintained.

E. All remedies must meet the performance, feature-functionality, and reliability requirements of this RFP.

F. At a minimum, these remedies may include the following:

   a. Modifications to the design of the system including the antenna and transmitter configurations which shall comply with any regulatory and zoning restrictions of Volusia County

   b. The complete inspection and testing of the transmit/receive antenna systems to determine that it meets all manufacturer and design specifications and was properly installed including antenna placement and orientation

16.9 VHF Paging and VHF FSA Radio Coverage Acceptance Testing

A. The County's acceptance of the radio coverage of the system shall be based upon the successful passage of the Coverage Acceptance Test Plan (CATP).

B. The Coverage Acceptance Tests shall not begin until the system has been fully optimized and the infrastructure optimization and tests have been successfully completed.

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C. The Contractor shall submit the documentation of both the infrastructure and coverage test results to the County for review following successful completion of the coverage tests.

D. The Coverage Acceptance Tests shall only take place when full foliage conditions exist and rain shall not delay the scheduled testing.

E. Prior to initiation of the coverage testing process, the Contractor shall provide the County with written certification that the system has been properly installed and fully optimized so that CATP testing may begin.

F. The proposed schedule shall allow at least two (2) weeks for the County to review and approve the final test documentation after all testing has been completed.

16.9.1 VHF Paging and VHF FSA CATP Requirements and Test Plan

A. The Contractor shall provide a detailed CATP in their proposal and the CATP shall reflect the proposed system design and include at a minimum, the following items:

a. A schedule of the tasks and activities

b. An explanation and description of the methodology explaining how the test will be conducted

c. An explanation of how the results shall be tabulated and documented

d. An explanation of why the methodology of data gathering and the subsequent presentation of the results to the County shall "prove" that the coverage requirements of this RFP have been met

e. The Contractor’s expectation including time commitments, of the required County personnel and vehicle resources needed for the testing

f. A list of radio equipment required for the testing

B. The Coverage Acceptance Test Plan shall consist of the following for tone alerting and voice quality testing.

a. Automated outbound receive signal level measurements

b. Subjective voice quality testing for outbound transmissions

C. The coverage acceptance tests shall be performed in all accessible areas of Volusia County.

D. The Contractor shall clearly show the calculations and assumptions used for compliance with coverage requirements specified in this RFP and the calculations shall be subject to County approval and review.

E. Once radio coverage testing has been initiated, system modifications such as replacement or reorientation of base station antennas or other factors that may influence radio

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coverage including software-roaming parameters, shall not be made without the County's approval.

F. Modifications affecting radio coverage will require that the radio coverage test be restarted from the beginning at no cost to the County.

16.9.2 CATP Pass/Fail Criteria

A. The CATP automated outbound RSL tests and the subjective voice quality test shall be deemed to have passed if the number of test grids passing is divided by the total number of test grids and this percentage is equal to or greater than the contractual SAR percentage as proposed by the Contractor and agreed to by the County.

16.9.3 Automated Receive Signal Level Testing

A. The Contractor shall perform outbound automated RSL measurement tests.

B. The test data shall be statistically significant for the required confidence level.

C. The automated tests shall incorporate critical time constants for communications system radio coverage testing.

D. A method of correlating the test location with the automated RSL measurements, such as a GPS receiver, shall be employed to assist with analysis of the test data.

E. The test instrumentation shall be capable of operation in a vehicle for outbound tests.

F. A test route shall be developed by the Contractor and approved by the County.

G. Continuous data shall be recorded throughout the test route.

H. Transportation shall be provided by the County to any test locations not generally accessible by car if required.

16.9.4 Subjective Voice Quality Testing

A. The Contractor shall perform a Subjective Voice Quality test for outbound transmissions to field test units from dispatch.

B. A method of correlating the test location of the Subjective Voice Quality test such as a GPS receiver, shall be employed to assist with analysis of the test data.

C. The test evaluation team(s) shall consist of no less than two County representatives and one Contractor representative.

D. Each evaluation team shall score each test call for outbound voice transmissions as PASS or FAIL based on a minimum DAQ 3.0 voice quality.

E. The dispatcher must successfully transmit and the portable radio user must successfully receive test messages in order to complete the test.

F. If the voice quality of the test messages meet or exceed the test criteria, as agreed by a majority of the test evaluation team, the grid is considered to have passed.

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G. If the test messages do not meet the test criteria, as agreed by a majority of the test evaluation team, the grid is considered to have failed.

H. If a test call in a grid fails, a single "retry" will be permitted and the user may move up to 5-feet and repeat the test.

I. All retries shall be recorded on the scoring template and no more than 5% retries will be allowed for passage of this portion of the coverage test.

J. If the discrepancy cannot be rectified, then that grid will be set aside for discussion and evaluation.

K. The test message shall consist of a short message representative of typical public safety call durations and shall include the identification of the location being tested.

L. The suggested test message is a short sentence or two, possibly from a newspaper or a Harvard Phrase, of approximately 8 to 20 words total.

M. If a member of the test team exhibits bias, they may be replaced.

16.9.5 Attenuated Radio Configurations

A. A modified (attenuated) portable radio may be used to simulate a pager operating on the hip outdoors.

B. This process involves the attenuation of a portable radio to "normalize" the roof-mounted mobile 1/4-wave magnetic-mount test antenna and to simulate the performance degradation that would be encountered while operating the pager on the hip outdoors.

C. The Contractor shall provide the 1/4-wave magnetic-mount test antennas for unobstructed placement on the vehicle roof used for the testing.

D. The Contractor shall install the appropriate signal attenuators to the portable test radio to emulate the following:

   a. The receive signal level at the portable antenna port is -80 dBm

   b. The antenna adjustment of 3.0 dB for the 1/4-wave magnetic-mount test antenna when compared to a half-wave dipole

   c. The antenna height adjustment of 1.3 dB for a 1/4-wave magnetic-mount test antenna installed at 5.0-foot AGL

E. The Contractor shall provide a thorough description, including block diagrams and attenuation levels of the proposed test setup, and the County shall approve the Contractors final plan for attenuation.

F. The Contractor shall verify and the County shall witness that each portable radio to be used for the coverage test has been bench-tested and found to be operating within the manufacturer's specifications, and that the appropriate amount of attenuation is in place to "normalize" the Contractor-provided test radio.

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G. The Contractor shall certify and the County shall witness that the testing methodology and modifications to the radios provide a loss equal to that of a portable radio operating in compliance with the requirements of this RFP.

16.9.6 Test Equipment Records

A. The Contractor shall keep thorough records during the equipment testing process and shall provide a permanent record of the testing results to the County and its technical representative prior to the initiation of the coverage testing process.

B. The Contractor shall record the make, model, serial number, and calibration date for all radio test equipment used during the equipment testing process.

C. The Contractor shall record and track the make, model, and serial numbers of all radio equipment used during the radio coverage testing process.

D. This documentation shall include the versions of software and settings programmed into each of the radios.

16.9.7 Test Grids and Locations

A. The Volusia County jurisdictional area shall each be divided into grid squares with sizes as determined by the methodology defined in the latest version of TSB-88 to yield a 99% confidence level and 2% confidence interval in the resulting test data.

B. Each urban area polygon shall each be divided into grid squares with sizes as determined by the methodology defined in the latest version of TSB-88 to yield a 99% confidence level and 2% confidence interval in the resulting test data.

C. Testing points within each grid shall be chosen per the TSB88 defined methodology and the test point shall be randomly chosen as to not be biased by either party and, to the extent possible, should not cluster adjacent grid test points together.

16.9.8 Coverage Test Results and Report

A. For the automated RSL test, a test location shall be considered to pass only if the automated RSL measurements are less than or equal to the maximum agreed upon thresholds for PASS/FAIL criteria for each modulation type tested.

B. The Contractor shall generate a CATP test report to summarize the test results and to recommend any corrective steps that may be required to fix any failed test.

C. The Contractor's CATP report shall include the following information for each test:

a. Description of the test methodology and the final results

b. Test location (map grid, address, or intersection for non-moving tests, etc.)

c. The test results for the automated RSL test by grids shall be displayed on 11-inch x 17-inch maps with the grids color keyed to indicate the test results; red indicates a

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grid failure, green indicates a passed grid, yellow indicates a grid that is not accessible or tested

d. Automated RSL detailed test results by grid

e. Paper and soft copies in PDF format of the data record collection work sheets

f. Date and time stamps on the test reports

g. Test conditions (type of radio, attenuation levels, antennas, equipment serial numbers, etc.)

h. The names of the test team participants

D. The CATP test report documentation shall be presented to the County for review following the successful completion of the coverage tests.

E. The County shall have a minimum of twenty-one (21) days to review and approve the test documentation after all testing has been completed.

F. Successful completion of the CATP test shall occur when the Contractor has demonstrated that they have met their minimum SAR coverage commitment and the contractual requirements of the contract.

16.9.9 Coverage Test Failures

A. The CATP shall be considered to have failed if any of the following conditions are demonstrated:

a. Unauthorized changes to the system or equipment under test

b. The Contractor has failed to demonstrate that they have met their minimum SAR coverage commitment and the contractual requirements for outdoor radio coverage within the County jurisdictional area

B. If the system fails the coverage test as described above, then the Contractor shall take corrective action to resolve the coverage deficiencies and repeat the coverage tests.

C. The costs of the corrective actions shall be borne by the Contractor.

D. The costs associated with the repetition of the CATP shall be borne by the Contractor inclusive of the participation by the County's technical representative.

16.9.10 Remedies for Coverage Failure

A. The Contractor shall bear the full responsibility and costs to mitigate the failure to demonstrate compliance with the contractual coverage commitment.

B. Remedies for failure of the CATP shall address the entire problem area and not be limited to correcting a portion of the failed area.

C. Remedies may not degrade areas of coverage that were previously accepted.

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D. A retest of the CATP shall be conducted in any area (previously failed or not) potentially affected by the remedy in order to verify that the composite coverage is maintained.

E. All remedies must meet the performance, feature-functionality, and reliability requirements of this RFP.

F. At a minimum, these remedies may include the following:

   a. Modifications to the design of the system including the antenna and transmitter configurations which shall comply with any regulatory and zoning restrictions of Volusia County

   b. The complete inspection and testing of the transmit/receive antenna systems to determine that it meets all manufacturer and design specifications and was properly installed including antenna placement and orientation

16.10 Bi-Directional Amplifier Tests

A. The Contractor shall bear no responsibility for equipment or services pertaining to BDA systems.

B. The County will perform an in-house evaluation of their known BDA systems to assess their ability to support P25 linear simulcast modulations.

C. The County will do their best to mitigate any issues discovered prior to the testing of buildings containing BDA systems.

16.11 Functional Acceptance Test Plan

A. The Functional Acceptance Test Plan (FATP) shall be performed before all systems' CATP.

B. The Contractor shall provide and define in their proposal a general Functional Acceptance Test Plan.

C. The Contractor shall provide thirty (30) days prior to commencement of testing a detailed "step-by-step" Functional Acceptance Test Plan that includes a test procedure and check list specific for their system that exercises and demonstrates each and all of the required and proposed features, functions and capabilities including those of the user equipment and dispatch consoles.

16.12 Communications System Cutover Plan

A. The Contractor shall include in their proposal a preliminary cutover plan describing the transition of users to the new communications system.

B. This plan shall include a chronological chart (Gantt-type format) with the tasks to be accomplished and the time for achievement of each task shown.

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C. The Contractor shall provide a phased cutover plan that will ensure that no current dispatch function is negatively impacted or impaired during system cutover to the new communications system.

D. The Contractor shall provide an updated detailed cutover plan for each user agency sixty (60) days prior to equipment installation.

E. The plan shall be approved by the County before commencement of installation.

F. The detailed cutover plan shall include a narrative description of the sequential cutover steps and a clear delineation of which tasks are the responsibility of the Contractor and which tasks are the responsibility of the County.

G. The current communication systems shall remain operational during the cutover phase and after cutover for a period to be determined by the County.

16.13 60-Day Performance Period

A. The Performance Period shall consist of a 60-Day Performance Period or burn-in period, and shall be scheduled to begin upon written notification to the County that the system is ready for the commencement of the 60-Day Performance Period, and that any required training has been successfully completed.

B. The County will specify a small number of use agencies to be part of the 60-Day Performance Period. The 60-Day Performance Period shall not constitute beneficial use or Final System Acceptance by the County.

C. The system will be observed during this period to ensure that it performs as specified.

D. Any failure to perform as specified in the Contract will be remedied before the infrastructure is accepted.

E. If the system performs as specified for sixty (60) consecutive days, and the remainder of the acceptance tests and punch-listed items have been resolved, then the system infrastructure will be considered for acceptance.

F. Successful operation is defined as the absence of any Major System Failure of equipment or loss of system functionality.

G. Any Major System Failure that occurs may reset the 60-Day Performance Period clock at the discretion of the County.

H. The County's decision to reset the 60-Day Performance Period will be based in part, upon the source and the severity of the failure as well as the operational impact suffered by the users.

I. The decision of the County to reset the 60-Day Performance Period shall be final and binding on the Contractor.

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J. If applicable, the cutover and transition of the remaining County agencies will follow the same process as the initial agencies but will not begin until the 60-Day Performance Period has been successfully completed.

16.13.1 Major and Minor System Failures

A. Successful operation is defined as the absence of any Major System Failure of equipment or loss of system functionality. Any Major System Failure will restart the clock to day 1 of the 60-Day Performance Period test.

B. Minor failures, such as operational problems and adjustments normally encountered during implementation of a new system, shall not constitute a failure in achieving successful operation.

C. The following is a listing of items that define a Major System Failure:

a. System in non-trunked fallback mode or failsoft

b. System in "site trunking"

c. Groups of mobiles or portables receiving a denial or busy tone

d. The loss of more than one (1) dispatch console operator position

e. The loss of voice communications

f. The loss of data communications if applicable

g. Failure of the trunked system switch/controller

h. The loss of two (2) or more trunked repeater channel resources

i. A simulcast failure affecting one (1) or more sites

j. Loss or failure of the system configuration database

k. Loss or failure of the user database

l. Failures that prevent acceptance criteria from being achieved

D. The following is a listing of items that define a Minor Failure:

a. Failure of any equipment which does not cause the interruption of trunking operation or dispatch console functionality, provided that redundant equipment automatically switches into operation in accordance with the RFP

b. Momentary (10 seconds) system outages during switching to redundant control equipment

c. The failure of one (1) repeater channel, provided that such failures are corrected within the maintenance response time required by the RFP

d. Failure of a single dispatch console position that is not attributable to other system failures

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e. Failure of a site frequency standard provided that redundant equipment automatically switches into operation in accordance with the RFP

f. Failure of a single tower-top amplifier or multicoupler

g. Any component infected with a virus, malware or any security breach

E. During the 60-Day Performance Period, the Contractor shall provide maintenance response, replacement parts and materials, and qualified personnel to service the fixed-end system and equipment at the sites of work within one (1) hour after notification of a major equipment failure as reported to the Contractor's service facility, during normal working hours (8:00 a.m. through 5:00 p.m. Monday through Friday) and within two (2) hours after hours.

a. The Contractor shall have sufficient personnel and parts available to maintain the system and equipment so that the equipment can be repaired within eight (8) hours after notification of equipment failure

b. This provision shall apply on a twenty-four (24) hours per day, seven (7) days per week basis including holidays

16.13.2 Performance Documentation

A. System performance documentation shall be maintained in a common electronic database; the database shall permit sorting by field to facilitate the analysis of maintenance records.

B. This database shall be maintained by the Contractor but shall be accessible, via remote login provided to the County by the Contractor to the County at all times.

C. During the performance period, the Contractor shall establish and maintain the following documentation:

a. Prepare and maintain a service/repair record system

b. Each major piece of equipment and radio subscriber unit shall be maintained by serial number and asset number

c. Prepare and maintain a failure reporting system to insure that all failures are reported promptly to the County

d. A failure log shall be available for inspection by the County at all times

D. A formal failure report shall be submitted to the County on a monthly basis and shall show for each failure:

a. The problem and the time reported

b. The time that the technician responded

c. The problem actually found

d. The repairs performed and the time of restoration

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e. An itemized list of parts replaced

f. The technician's name

g. Any FCC required measurements made due to repairs

16.14 Final System Acceptance

A. The County will consider the system ready for Final System Acceptance upon the satisfaction of the following conditions:

a. All punch list and action items are completed and no outstanding problem issues exist

b. All equipment and services to be provided in accordance with the RFP have been received by the County

c. All required training has been performed per the RFP

d. All functional, technical, performance tests and the 60-Day Performance Period have been successfully completed, and the results have been provided to the County and accepted as complete and in accordance with the RFP

e. All as-built drawings, service manuals, operator manuals and related documentation required in the terms and conditions and the RFP have been provided to the County and are accepted as complete and in compliance with the requirements

f. All legacy system equipment and antenna systems have been removed if required and properly disposed of in accordance with County directives

g. Submission of proof of payment of fees, taxes or similar obligations

h. All permits, FCC licensing, FAA applications, certificates of inspection and other approvals and releases by governing authorities required for the County's occupancy and use have been completed and all notices filed

i. Settle liens and other claims

j. Settle Liquidated Damages due to the County, if any

k. Transfer operational, access, security and similar provisions to the County and remove temporary facilities, tools and similar items

l. Obtain Consent of Surety for final payment

B. The Contractor shall provide in their proposal, a complete listing of the Final System Acceptance documents that will be the deliverable to the County.

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17. TRAINING

A. The Contractor shall include in their proposal, their proposed high level training plan and courses to be provided and a syllabus of the proposed training program.

B. The Contractor representatives shall provide user training to County personnel who will be responsible for training additional personnel in the operation and functions of the new communications system.

C. The Contractor shall develop and provide a comprehensive and detailed plan for all training associated with the use, operation, and management of the new communication system as described in this section.

D. The Contractor shall provide the detailed training plan to the County for approval at least ninety (90) days prior to the cutover of system to live operation.

E. The training plan shall provide on-line “prerequisite” training as required, and on-site training by highly skilled training personnel with extensive training and experience on the equipment and systems supplied under this RFP.

F. The training sessions shall be scheduled at times and locations as negotiated with the County.

G. Dispatcher training may be required on a 24-hour basis without extra cost to the County.

H. The County will provide classroom space where training can be conducted.

I. The County’s live operational equipment will be used in a "hands-on" environment.

J. Written materials and audiovisual aids produced by the Contractor for the training shall be furnished to the County for continuing education purposes.

K. The Contractor shall provide all necessary instructional materials, manuals, handouts, and other training materials which shall be retained by the trainees for their reference. All training materials shall be provided in an editable electronic version such as *.pdf (Portable Document Format).

17.1 Dispatcher Trainer Training

A. The Contractor shall provide a comprehensive “Train-the-Trainer” program for the identified audiences and the subjects defined in this section.

B. The training program shall include at a minimum, training for supervisor and operator personnel.

C. Such training shall include at a minimum, five (5) sessions for up to ten (10) trainers each.

D. The first training class shall be given to supervisory personnel of the agencies involved so that any deficiencies discovered in the training program may be corrected before the remaining personnel are trained.

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E. Concurrent with the installation and prior to the performance period of the communications system, the Contractor shall provide orientation and training for all of the participating department's dispatch radio personnel trainers for all aspects of the operation and functioning of the P25 communications system and equipment.

F. The County will provide classroom space for the training and the Contractor shall provide the connectivity between the classroom and the P25 system.

G. The training shall be tailored to the requirements of each user agency and shall use the agencies' final console screen configuration.

H. The dispatch consoles used for training shall be connected to the new P25 system.

I. If the Contractor intends to utilize the actual console hardware to be provided to the County, the Contractor shall work with the County to determine which consoles are to be used for the training sessions.

J. Supervisory personnel and dispatch radio trainers shall be trained on-site in the following areas:

   a. All features and functions

   b. The configuration of the new system and its operational modes, and the primary differences between the new system and the current system

   c. Operational theory of the dispatch consoles

   d. The failure modes of the P25 system and backup systems such as RF control stations, mobile and portable equipment, trunking and conventional, and the failure modes of operation

   e. Hands-on familiarization with all communications control functions and equipment

   f. Basic dispatch operator maintenance and diagnostic troubleshooting techniques

   g. System manager terminals and report generation

   h. Other ancillary systems

17.2 System Management Training

A. The Contractor representatives shall provide on-site training to County radio communication systems personnel who will be responsible for database entries, setting up user files, and administering services for the communications system.

B. This training shall include intensive instruction on all aspects of the tasks necessary to operate the system.

C. The training class shall consist of up to six (6) people.

D. The System Manager training course shall be a comprehensive program designed to familiarize the radio communication systems personnel with all of the available features, reports, provisioning, and system diagnostics.

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E. The System Manager course must include, at a minimum, the following topics:

a. System overview

b. Operational theory of all system components

c. Detailed discussion of system failure modes and the appropriate response

d. Basic troubleshooting techniques

e. The available system features and report generation

f. The available system diagnostics and reports

g. Dispatch console management and configuration administration

h. Development and maintenance of system databases and archives

i. Detailed discussion of system and site alarm systems

j. Hands-on training and familiarization with all of the above

k. Fleet-mapping for the system

l. Disable/enable user radios authorized on the system

m. System utilization by their radios and talk groups

n. Voice logging recorder interface configuration and administration if applicable

o. ISSI interface configuration and administration

17.3 On-Site User Operator Trainer Training

A. The Contractor shall provide a comprehensive on-site "Train-the-Trainer" operator courses for the identified audiences and the subjects defined in this section.

B. The Contractor shall provide "Train-the-Trainer" type operator courses for the following categories of equipment:

a. Subscriber Mobiles

b. Subscriber Portables

c. Subscriber Control Stations

d. Vehicular Repeaters (if utilized)

e. Alternative Support Systems and Specialized Equipment (if utilized)

B. Training shall include system orientation and familiarization that includes theory of operation discussion and equipment demonstration, and shall be designed so that, upon completion, each student will be qualified to train system end-users on the operation of the specific equipment.

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C. The Contractor shall customize these "Train-the-Trainer" courses per the County's satisfaction in conjunction with the specific programming and configuration parameters utilized by the County.

D. The Contractor shall provide training for up to three (3) classes of fifteen (15) students per class.

E. The Contractor's highly skilled personnel shall conduct the training.

F. Instructional material shall be included as part of each course and will become property of the County.

G. Training aids such as videos, system diagrams, training manuals showing working functionality and a qualified instructor shall be available for these classes.

H. Each student shall receive a personal "Trainer's Guide" training manual. The "Trainer's Guide," and other training documentation shall be provided in electronic (PDF) editable format on forty-five (45) USB flash-drives supplied by the Contractor.

I. The Contractor shall provide, in addition to the training plan, and handout material, five (5) video copies that would instruct a user on the operational functions and features of all proposed radio system subscribers.

17.4 Subscriber Maintenance Training

A. The Contractor shall provide an on-site technical training seminar for a minimum of eight (8) persons for all aspects of 1st echelon maintenance training for all models of user equipment provided under the Contract.

B. The County has radio system technicians and support personnel that have daily contact with the system users and determining if a problem is an operational error, a user radio issue, or a system malfunction that may need escalation to a higher level of maintenance.

C. The Contractor shall provide 1st echelon training to the personnel so that they can identify equipment problems and initiate an efficient course of action for repairs.

D. The Contractor shall supply training personnel that are highly skilled with extensive training and experience on the equipment supplied as part of this Project, and all necessary instructional materials.

E. All manuals, schematics, diagrams, and other printed and soft copy materials shall become the property of the attendees.

F. The 1st Echelon training course shall include, at a minimum, the following topics:

   a. Operator training

   b. Testing radio units for proper operations using a service monitor and test set

   c. Adjusting radio units to within specifications using radio software, a service monitor and a test set

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d. Basic troubleshooting techniques

e. Disassembly / reassembly of radio units

f. Identifying radio units to be repaired in-house or at the factory depot

17.5 Subscriber Programming Training

A. The Contractor shall provide on-site training seminars for a minimum of eight (8) County radio communication systems personnel for all aspects of the development of radio templates and personality code plugs.

B. The training provided shall include the following areas:

a. All available programming features and functions

b. The use of each individual piece of radio service and programming software program.

c. The development of radio personality templates for all mobile, portable, and control station user equipment provided, including its operational modes and feature sets.

C. The Contractor shall supply training personnel that are highly skilled with extensive training and experience on the equipment supplied as part of this Project, and all necessary instructional materials.

D. All manuals, schematics, diagrams, and other printed and soft copy materials shall become the property of the attendees.

E. The Contractor shall provide a minimum of four (4) sets of programming cables and software where each set consists of all cables, software, and licenses required to program all mobile, portable and control station user equipment provided by the Contractor.

F. This training and programming cable and software sets shall be provided by the Contractor at no cost to the County.

17.6 Radio and Backhaul Systems Maintenance Training

A. The Contractor shall provide familiarization and maintenance training for County technical personnel during the Factory Staging and Acceptance Test and the installation phases of the Project.

B. This training will ensure that County maintenance personnel are familiar with the various components and equipment of the communications system.

C. The Contractor shall provide on-site training seminars at the County for a minimum of five (5) persons, and shall include complete training, beginning with basic digital theory through comprehensive coverage of the provisioning, operation, and maintenance of the communications system and backhaul equipment supplied under this contract.

D. The training shall include the provisioning, operation, and maintenance of the radio system's and backhaul system's network management systems.

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E. The Contractor shall supply training personnel that are highly skilled with extensive training and experience on the equipment supplied as part of this Project, and all necessary instructional materials.

F. All manuals, schematics, diagrams, and other printed and soft copy materials shall become the property of the attendees.

G. The technician training courses shall cover, at a minimum, the following topics:

a. An overview of the system configuration and capabilities, block diagrams and circuit and component descriptions

b. Network backhaul configuration, setup and IP addressing

c. A presentation of the general communications equipment, theory, configuration, and features

d. Principles of digital P25 Phase 1 and Phase 2 transmissions

e. Simulcast theory, principles, operation, alignment and maintenance

f. System failure modes, troubleshooting, diagnostics, and alarms

g. Base station operation and maintenance, transmit and receive antenna systems testing and optimization

h. Operation of specialized test equipment

i. Detailed repair procedures, unit/module replacement, alignment, optimization, and testing procedures

j. Detailed preventative maintenance and record-keeping procedures

17.7 Radio Propagation Software and Training

A. The Contractor shall provide radio propagation modeling software inclusive of all required databases and a perpetual license to allow County personnel to model radio system coverage.

B. The license shall enable three (3) concurrent user sessions.

C. The Contractor shall provide the required computer hardware specifications needed to utilize the propagation software.

D. The Contractor shall provide on-site training seminars prior to Final System Acceptance for a minimum of eight (8) persons, and shall include complete training, beginning with basic radio propagation and simulcast theory through comprehensive coverage of the operation of the software.

E. The Contractor shall supply training personnel that are highly skilled with extensive training and experience on the equipment supplied as part of this Project, and all necessary instructional materials.

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F. All printed and soft copy materials shall become the property of the attendees.

G. The Contractor shall provide the completed file and data for the radio propagation software that defines the County radio system as constructed.

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18. SYSTEM DOCUMENTATION

18.1 General

A. All drawings, as-builts, and user operational manuals identified in the Contractor's proposal and the resulting contract shall become the property of Volusia County upon Final System Acceptance.

B. The Contractor shall provide a detailed drawing that physically describes each equipment site location and a logical drawing that details IP addresses, port numbers, router, switches and any specialized equipment that the Contractor is providing.

C. The Contractor shall supply a complete set of documentation that describes the overall communications system layouts, block diagrams, architecture, as-built documents, and its operating and failure modes for all systems, subsystems, and components supplied under the contract.

D. The documentation shall consist of three (3) electronic copies on flash drives and one (1) bound hard copy of the entire system documentation to be placed at each of the fifteen (15) communication sites and at the 800 MHz System Manager's office.

E. The Contractor shall supply the documentation as specified in this section.

F. The documentation shall consist of the following at a minimum:

   a. User instruction and operation manuals

   b. Detailed equipment maintenance, setup, and alignment manuals

   c. System and equipment test data (both factory and field)

   d. Software documentation which describes system and equipment software and versions

   e. System and site as-built drawings and diagrams

   f. A complete inventory of all provided equipment and software including model numbers, serial numbers, version numbers in printed form and in the latest version of Microsoft Excel

G. The Contractor shall provide all documentation in Adobe Acrobat format (PDF) as well as in Microsoft Word or Microsoft Excel format as appropriate.

18.2 System Drawings

A. The Contractor shall prepare system engineering drawings for each site of work with all changes, configurations, and modifications documented for each individual communications site showing the equipment configuration, cabling schematic, cabling plan, and all other important system elements.

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B. The equipment shall be installed in accordance with these drawings and specifications, which shall be delivered to the County as an integral part of the communications system when it becomes operational.

C. Any deviations from the planned installation shall be noted in the as-built, installed, programmed, wired, configured, and modified drawings, in accordance with this RFP.

D. The Contractor shall provide a general system manual that describes the overall system layouts, architecture, and its operating and failure modes.

E. At a minimum, the general system manual shall include:

a. System block diagrams

b. Site layouts and floor plans for each equipment site, and dispatch facility to scale

c. Rack face drawings to scale

d. Drawings showing cable tray location details to scale

e. Interconnection drawings that show all connections between sub-assemblies, such as terminal boards, panel assemblies or other equipment, and which external connections are made

f. Documentation of numbering and labeling of all cabling associated with remote control units

g. Documentation of numbering and labeling of all connections to termination blocks associated with the control consoles and conventional interfaces

h. Documentation of numbering and labeling of all interconnecting cabling between repeaters, the central control, any remote site controllers or processors, alarm circuits, leased telephone company circuits, and the backhaul system

i. Documentation and labeling of transmission line routing and antenna mounting at all fixed sites, with detailed drawings showing all mounting hardware and accessories

j. Any unique wiring configurations or circuit modifications that are not part of the standard equipment documentation

18.3 Instruction and Operation Manuals

A. The Contractor shall provide to the County all system documentation including operating instruction manuals for each type of equipment supplied at each site.

B. This documentation shall be organized in a manner to allow the County's personnel quick access to the information.

C. As a minimum, the following shall be provided:

a. General practices

b. User operating manuals

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D. The Contractor shall supply necessary operating manuals, drawings and other documentation to assure that the County's personnel shall be able to operate the communications system both initially and in the future.

E. All system documentation shall be provided prior to training.

F. Documentation shall be used during training sessions and updated as needed for revisions found during training.

G. Revised system documentation shall be re-submitted prior to Final System Acceptance.

H. At a minimum, this documentation shall include:

a. Complete set of operations manuals shall be provided for the system as whole and for each category of equipment purchased in association with this Project

b. Manuals for OEM hardware for each component of the system

c. All system, field unit, and base station user manuals published by the equipment manufacturers

d. System diagrams showing up-to-date as-built configurations for all parts of the RF, controlling, transmission, and management systems

e. Each major component shall be identified and the interconnecting relationship shall be clearly shown

18.4 As-Built Drawings

A. Thorough "as built" documentation shall be provided by the Contractor and delivered to the County's Project Manager prior to Final System Acceptance.

B. These drawings shall include all communication sites and equipment that the Contractor had installed new, modified, and/or relocated existing equipment.

C. All deviations from the original system documentation shall be noted in the final as-built documents.

18.5 System Testing and Acceptance Documentation

A. The Contractor shall provide a complete set of documentation of the results of the System Acceptance Test Plan.

B. At a minimum, this documentation shall include:

a. The results of the Factory Staging and Acceptance Test for all staged systems

b. Site installation, mechanical, electrical and grounding inspections

c. Microwave and LMR antenna systems testing including TDR and Return Loss sweep test results, installation and grounding inspections

d. Generator, UPS, DC power systems startup and run tests

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e. Structural, geo-technical, earth ground resistance testing

f. FAA, FCC, and other regulatory studies, coordination, and licensing

g. Building permits

h. System Functional Acceptance Test Plan and results

i. Equipment Specification Test results

j. Ancillary systems tests as applicable; FSA systems, etc.

k. Radio propagation coverage maps

l. Coverage Acceptance Test Plan documentation and test results including any in-building testing

m. 60-Day Performance Period results and all Major and Minor System Failures

n. Final completed punch list

o. Final fleet map configuration with all group I.D.s, aliases, etc.

p. A complete roster of unit I.D.s and aliases

q. Documentation of final programming configuration for all software programmable equipment

r. A log of level settings for all analog audio and control circuits

s. A listing of telephone circuits by circuit number and telephone number for service on these circuits if installed

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19. WARRANTY AND EXTENDED MAINTENANCE REQUIREMENTS

A. The Contractor shall include in their response the cost to provide 1) a parts and labor warranty maintenance period, and 2) the cost of an extended corrective and preventative, parts and labor, maintenance Contract that includes all software bug fixes, hardware maintenance upgrades, licenses and any license changes, firmware upgrades, preventive maintenance, and all labor for infrastructure and subscriber equipment, communications system monitoring, hardware and software maintenance, annual preventative maintenance testing, security updates, Contractor-provided backhaul network equipment, and scheduled network server and technology platform updates. The Contractor shall detail pricing in their proposal for a two (2) year warranty maintenance period for all infrastructure equipment and an extended maintenance Contract of fifteen (15) years.

B. For all subscriber equipment, the contractor shall provide extended maintenance agreement pricing for two (2) optional warranty terms. The County will select the subscriber equipment warranty period during contract negotiations. This pricing must include the monthly maintenance cost for all mobile and portable radio models proposed in the Contractor's response:

   a. Price a three (3) year parts and labor warranty maintenance period and an extended maintenance Contract of fourteen (14) years.

   b. Price a five (5) year parts and labor warranty maintenance period and an extended maintenance Contract of twelve (12) years.

C. The Contractor shall describe its warranty and extended maintenance services in detail. Include a thorough description of services covered during each period. Include in the description after hours support, network monitoring, and maintenance staffing.

D. Any declared Severity 1 problem shall require on-site support from the OEM's technical assistance organization and engineering personnel.

E. The contractor shall specify the location of its maintenance service facility and the estimated travel time to each of the County's radio sites. Travel time to any one site given normal traffic shall be no longer than one (1) hour.

F. Software licenses: A complete list of all software licenses and associated information shall be provided to the County as part of the Contractor's response proposal. The County shall not be responsible for paying for software licenses omitted from the Contractor's proposal.

G. The Contractor shall include the price of access to its Technical Support organization in the warranty maintenance period and the extended maintenance Contract.

H. The Microwave system shall be included in the warranty maintenance period and the extended maintenance Contract and its associated pricing.

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I. The individual Cities and other radio user agencies will each be responsible for the administration of their individual maintenance agreements and the Contractor shall extend the same radio maintenance pricing to the Cities and other radio user agencies as offered to the County.

J. As part of the warranty and maintenance agreement, the Contractor shall perform a regular preventative maintenance on subscribers at a minimum of twelve-month intervals.

K. The Contractor shall state their average repair cycle time that can be met for equipment delivered to the Contractor's local service facility.

19.1 Warranty Maintenance Period

A. The Contractor shall warrant that all user and infrastructure equipment and installation services conform to the specifications provided within this RFP, or the manufacturer's published specifications, whichever is most stringent, that it shall be free from defects in materials, functionality, and workmanship for a period of at least two (2) years from the date of Final System Acceptance. During the warranty maintenance period, the Contractor will cover all software bug fixes, hardware repair, any vendor required license changes, firmware upgrades, preventive maintenance, and all labor for infrastructure and terminal (radio) equipment at no cost to the County.

B. The warranty maintenance period shall commence on the date of Final System Acceptance.

C. Third party warranties on equipment included as part of the system and not manufactured by the OEM vendor shall be passed on to the County. A complete list of equipment, associated hardware and software licenses, and warranty information shall be included in the Contractor's proposal. The County will not be responsible for paying for software licenses omitted from the Contractor's proposal.

D. During the warranty maintenance period, the Contractor shall provide signed written documentation from the OEM that it will use all its resources to complete the P25 Radio System implementation and warranty agreement if the Contractor fails to complete the requirements of the Contract.

E. The Contractor shall provide within the warranty maintenance period, all labor, parts, supplies, transportation, test equipment, and facilities to maintain all dispatch consoles and infrastructure communications system components, equipment, and software to the level of factory performance and within the requirements contained herein.

19.2 Warranty Maintenance Period Commencement

A. The warranty maintenance period shall commence for all user and infrastructure equipment and systems upon the date of Final System Acceptance.

Attachment: 02._Exhibit_A_-_Technical_Specifications (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking

19.3 Spare Parts, Assemblies, and Accessories

A. The County shall not be responsible for purchase, furnishing, maintaining or storage of any spare equipment, assemblies, or modules required for the support of the new P25 system infrastructure systems and equipment.

B. The Contractor shall be responsible for all spare parts, assemblies, and modules necessary to meet the warranty and maintenance response and restoration requirements of the Contract.

C. The Contractor shall specify the location where it will maintain the spare parts, including a listing of the spare parts that will be maintained in close proximity to Volusia County.

D. The Contractor shall provide and be responsible for all necessary spares required to meet the response and restoration requirements specified in the maintenance plan of the Contract.

E. The Contractor shall include in their proposal a detailed itemized listing and price for all proposed equipment, recommended test equipment, tools, and fixtures.

F. The Contractor shall furnish a detailed description of each spare component of their proposed system including the purpose of the parts, assemblies, and modules so that parties not familiar with the OEM vendor's terminology can determine their application and their use.

G. If any spares require firmware or software, each spare shall have the appropriate versions installed. The Contractor shall propose a procedure for keeping spare equipment up to date from a software and hardware perspective.

H. In the event that the spares are consumed, the Contractor shall replenish the spares in order to meet the response and restoration requirements specified in the maintenance plan of the Contract

I. Replacement spares shall also be available via emergency request with expedited delivery within twenty-four (24) hours of the equipment failure.

J. The Contractor shall provide to the County five (5) sets of programming software, cables, and required interface devices for each model of software programmable equipment included in the system.

K. The Contractor shall provide a complete list, including model number and price, for each piece of software and equipment required to program the new equipment and any associated passwords required to maintain the system.

L. The presence of redundant backhaul routing systems shall not be considered as spare parts.

M. The Contractor shall test all spare equipment on an annual basis to verify that is operational and of the correct firmware/software version as required by the system.

Attachment: 02._Exhibit_A_-_Technical_Specifications (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking

19.4 Lifecycle Support and the Availability of Replacement Parts

A. The Contractor shall provide an end of manufacture and an end of product support table with dates that identifies the end of maintenance manufacture and end of support dates for each piece of backbone, infrastructure, and radio equipment included in their proposal. (Refer to Appendix G: End of Manufacture and End of Product Support)

B. The Contractor shall provide the original date of product release for each product.

C. The Contractor shall certify that replacement parts for infrastructure equipment shall be available for a period of ten (10) years following the date of product discontinuance by the manufacturer.

D. The Contractor shall certify that replacement parts for mobile, portable, and control station radio equipment and accessories shall be available for seven (7) years following the date of product discontinuance (date for end of manufacture) by the manufacturer.

E. The location of the parts depot that stocks the replacement parts shall be specified in the proposal.

F. Should replacement parts be unavailable as outlined above, such that the radio system components cannot be repaired, the Contractor shall replace that item at no cost to the County, with a current year, equivalent model of the same item, with the same features and capabilities.

G. If equipment is proposed, which cannot be field diagnosed and repaired, or which require special instrumentation or devices to repair, the Contractor shall specify how such assemblies will be repaired at a central facility, and how the equipment will be packed, shipped, received, and repaired by the Contractor.

19.5 Ongoing Corrective and Preventative Maintenance

A. The Contractor shall describe their complete plan to provide the County with maintenance service.

B. The Contractor shall establish and maintain a database of all radios the County and Cities have purchased, which includes, model number, serial number, features supplied with each radio, software release levels, programming, history of maintenance actions, purchase date, and owning agency. Access to the radio database and ability to export data such as updates on demand shall be made available to the County.

C. The Contractor shall include the cost to extend the system infrastructure corrective and preventative maintenance on an annual basis for an additional 15 years following the expiration of the 2-year Warranty Maintenance Period.

D. The Contractor shall continue to provide all infrastructure system maintenance response after the warranty maintenance period expires for the maintenance period years 3 through 17.

Attachment: 02._Exhibit_A_-_Technical_Specifications (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking

E. The Contractor shall provide signed written documentation from the OEM that it will continue to support the Contractor when troubleshooting problems during the extended maintenance period as long as the County maintains a maintenance Contract with the Contractor.

F. The maintenance response, terms, and conditions shall be the same as those described for the two (2) year warranty maintenance period.

G. Maintenance proposals shall clearly identify those items covered under the agreement, and clearly delineate items that are not included or conditions that would invalidate the maintenance agreement.

H. The Contractor shall be responsible for all costs for required tower work or troubleshooting during the Warranty Maintenance Period.

I. The Contractor shall maintain a regular schedule to perform preventative maintenance at a minimum of twelve-month intervals or as recommended by the manufacturer whichever is more frequent.

J. Preventative maintenance activities shall include the following checks on the system and adjust the equipment as required:

   a. Simulcast and voter performance tests

   b. Over-the-air transmit and receive tests to confirm antenna system performance

   c. Microwave testing including RX signal level and TX power level tests

   d. Repeater TX and RX performance (TX power, RX sensitivity, audio levels if applicable)

   e. Combiner and filter losses as applicable

   f. Receiver multicoupler/tower-top amplifier level and gain tests including testing through the tower-top amplifier test port

   g. -48VDC battery system tests

19.6 Firmware and Software Updates

A. The Contractor shall provide a complete listing of all firmware and software proposed by the Contractor and a complete listing of all software covered under the maintenance agreement.

B. The firmware and software maintenance plan shall list all licenses and subscriptions provided and shall include all maintenance and new feature releases.

C. After Final System Acceptance and prior to the end of the warranty maintenance period, the Contractor shall provide the County one (1) complete system infrastructure firmware and software update to the latest versions and patches including all operating systems and application software, anti-virus software, etc.

Attachment: 02._Exhibit_A_-_Technical_Specifications (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking

D. The firmware and software updates shall include the cost of all software, services, and all labor to perform the updates.

E. All labor to install the updates shall occur during a time convenient to public safety operations and selected by the County.

F. This item shall be included in the Contractor's proposal base cost.

19.7 Technology Update and Cost

A. The County desires to update critical system components to the latest product hardware and software version over the life cycle of the infrastructure system.

B. Regardless of the Contractor's recommended system maintenance schedule, the Contractor shall provide their cost to perform a technology update every five (5) years commencing on the day of Final System Acceptance, i.e. year 5, year 10 and year 15.

C. The Contractor shall provide a list of all equipment eligible for the technology update.

D. If the OEM vendor replaces any of the components on the technology update list with new or a different technology, the County shall receive this new technology as part of the technology update.

E. The technology update shall include the replacement of critical components whose failure would result in a switchover of network master cores or the loss of service of more than one (1) communication tower site or dispatch console, but shall not include any optional upgrade to features or functions.

F. The Contractor shall replace the following components during the technology update:

a. Network core servers

b. Network core storage systems

c. Network core routers

d. Network core switches

e. Network firewalls

f. Network management servers and workstations

g. Voice logging recorder interface servers, including any required API upgrades with the voice logging recorder vendor

h. Dispatch center routers

i. Dispatch center switches

j. Dispatch center console computers

k. ISSI application server

l. Simulcast control point servers

Attachment: 02._Exhibit_A_-_Technical_Specifications (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking

m. Applicable hardware and software licenses and license changes

G. Items not to be refreshed include the following if applicable:

a. Simulcast comparators and voters

b. Repeaters and receivers

c. Combiners, filters, multi-couplers

d. Antenna systems

e. Microwave backbone and antenna systems

f. UPS

g. DC power systems

h. Application servers (OTAR, OTAP, GPS, etc.) other than ISSI application server

i. Alarm systems

19.8 OEM and Third-Party Warranties

A. The Contractor shall pass the original equipment manufacturers' warranty to the County for all equipment that may have warranties for a period that extends beyond the Contractor warranty maintenance period for equipment such as communication shelters and roofing warranties, tower warranty, generator warranties, UPS and batteries, etc.

B. The Contractor shall pass the original manufacturer's third party hardware and software warranties on to the County for the manufacturer's specified warranty period.

19.9 Remote System Monitoring and Service Dispatch

A. The Contractor shall provide a description of their proposed active system network monitoring service for the County's proposed system.

B. During the warranty maintenance period, the Contractor shall provide remote network monitoring of the system for security and maintenance purposes on a 7 days per week, 24 hours per day, 365 days per year basis.

C. Network monitoring shall provide the Contractor with visibility of all system specific elements, events, and alarms.

D. The Contractor's network monitoring center shall be continuously staffed with trained technologists, who are capable of acknowledging events, running diagnostics, and initiating an appropriate maintenance response.

E. The Contractor's network monitoring center shall be responsible for the dispatch of the appropriate technical staff to effectively address the fault condition, and any subsequent escalation of the response, required to meet the contractual response and restoration times.

Attachment: 02._Exhibit_A_-_Technical_Specifications (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking

F. The Contractor shall provide the County with a summary of the maintenance activity and system performance reports on a monthly basis or as requested by Volusia County.

G. The Contractor shall provide the County with an optional cost for remote system monitoring and service dispatch services during the extended maintenance period in Exhibit B – Pricing Sheets.

19.10 Preventative Maintenance Service During Warranty Maintenance Period

A. The Contractor shall provide preventative maintenance service to review, document and validate system performance for each device in the network individually and as a whole just prior to the end of the first year of warranty and just prior to the end of the second year of the warranty maintenance period.

B. The Contractor shall furnish and maintain a full and complete stock of spare parts, modules, and assemblies as needed to support the communications system and meet the required maintenance and restoration response requirements.

C. The Contractor shall provide trained personnel to perform preventative maintenance on the radio system and all support systems, including the backhaul system components provided by the Contractor, at each of the infrastructure locations.

D. The Contractor shall perform the preventative maintenance in a manner that will have the least amount of impact to the users and will contact the County prior to disabling equipment that would significantly reduce the performance of the system.

E. If the Contractor discovers equipment that does not perform per their specifications or found inoperable, the Contractor shall replace or repair the equipment.

F. Radio site maintenance documentation shall include, at a minimum, the following:

   a. Repeater TX and RX performance (TX power, RX sensitivity, audio levels where applicable)

   b. Combiner and band pass filter losses

   c. Documentation specifying system alignment measurements, microwave measurements, and tower top amplifier measurements

G. The County will have the following responsibilities:

   a. Review and comment on the preventative maintenance documents supplied by the Contractor

   b. Supply on-site presence when requested

   c. Supply tower climbers when required to investigate problems with the antenna system

   d. During the warranty maintenance period, the Contractor shall be responsible for providing tower climbers and their costs.

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19.11 Maintenance Personnel

A. The Contractor shall provide competent, experienced personnel to execute the required maintenance tasks during the warranty maintenance period and extended maintenance period.

B. All maintenance personnel shall be trained and experienced in standard communications industry practices.

C. Personnel who perform maintenance on the system shall have completed all required manufacturer-approved training for that system and equipment.

D. The Contractor shall provide evidence to the County that the said training and appropriate refresher courses have been completed by their service personnel.

E. The Contractor shall provide a resume for each technical personnel that will be assigned to support the County's new communication system, backhaul network, and user equipment.

19.12 Contractor Service Facilities

A. The preferred Contractor shall have a service facility located in Volusia County and provide service personnel on a 7 days per week, 24 hours per day, 365 days per year basis (7x24x365) at the time of Contract approval by County Council.

B. The Contractor shall maintain one (1) or more properly stocked, equipped, and staffed service facilities to maintain the communication system and equipment supplied under this RFP within the area, such that the maintenance response and restoration time requirements can be met.

C. The Contractor shall specify in their proposal, the location of their depot or secondary service facilities nearest to the County.

D. The Contractor shall specify the testing and maintenance equipment that is available as a permanent part of the Contractor’s on-site maintenance facility and used for maintaining the communications system.

19.13 Severity Levels Definitions and Response Time Requirements

A. Service for communication system infrastructure including but not limited to master core site network controller, site controllers, dispatch console systems, base station repeaters, antenna systems, control stations and communications center equipment, voting receiver equipment, and backhaul equipment shall be provided on a seven (7) days per week, 24 hours per day, 365 days per year basis.

B. Table 27 - Severity Level Response Time Requirements below provides the response time requirements for the warranty and maintenance service periods.

Attachment: 02._Exhibit_A_-_Technical_Specifications (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking

Severity Level	Response Time Requirement
Severity 1	Telephone response within 30 minutes, and if required, on-site within 1 hour from receipt of notification, 7x24x365. Fault restoration within 4 hours from receipt of notification.
Severity 2	Telephone response within 30 minutes of notification, and if required, on-site within 2 hours from receipt of notification, 7x24x365. Fault restoration within 8 hours from receipt of notification.
Severity 3	Next business day.

Table 27 - Severity Level Response Time Requirements

Attachment: 02._Exhibit_A_-_Technical_Specifications (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking

C. Table 28 - Severity Level Definitions, below provides definitions for the response time requirements listed in Table 27 above.

Severity Level	Problem Types
Severity 1	Major system failure One or more of Radio sites off-line 25% or more of the system talk paths off-line Loss of two (2) or more dispatch consoles Loss of ISSI or any interoperability interface Loss of the Fire Station Alerting radio communications systems Loss of master core site Loss of the network management system Failure resulting in any simulcast sub-system reverting to "site-trunking" Loss of two (2) or more System Manager/Alarm Terminals Loss of "full-featured" dispatch capability (revert to backup radio dispatch) Backhaul system failure resulting in a path outage
Severity 2	Significant system impairment 10% to 24% of the system talk paths off-line Loss of one (1) dispatch console Loss of a voice logging recorder interface Intermittent problems, interference
Severity 3	User equipment failures System problems under monitoring Operational and informational questions Configuration change support questions

Table 28 - Severity Level Definitions

19.14 Maintenance Response Penalty

A. Failure to meet the response times to a Severity 1 failure shall result in a deduction of one (1) week's maintenance Contract fees for each 30-minute period or fraction thereof beyond the 30-minute point.

B. Failure to meet the response times to a Severity 2 failure shall result in a deduction of one (1) day's maintenance Contract fees for each 30-minute period or fraction thereof beyond the 30-minute point.

C. These fees shall be deducted from the annual maintenance contract.

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19.15 Dispatch Area Maintenance Requirements

A. The County requires that Contractor maintenance personnel be on-site at 8:00 a.m. during business days to address any outside normal hours problems that were not resolved by on-site callout personnel.

B. Console system severity and response time problems will be handled as specified in Table 27 and Table 28.

19.16 Maintenance Documentation

A. There shall be a maintenance log with sufficient detail on each failure or maintenance action to enable the maintenance personnel to analyze the problems within the communications system and take the required corrective or preventative action.

B. This log shall be initiated at the start of the warranty maintenance period and shall be maintained throughout the entire warranty and extended maintenance periods.

C. The log shall include all equipment purchased under this Contract and shall include at a minimum make, model, serial number, date put in service, unit cost, asset number, and where the unit is located.

D. The maintenance log shall be stored in an electronic database that can be updated.

E. The Contractor shall provide authorized County maintenance personnel read-only access to the maintenance log.

19.17 Firmware and Software Maintenance

A. The Contractor shall provide a complete listing of all firmware and software proposed by the Contractor and a complete listing of all software covered under the firmware/software maintenance agreement.

B. The proposed firmware and software maintenance Contract shall include the costs associated with maintaining the infrastructure system and dispatch console equipment to the most current firmware and software versions as released by the Contractor over the post-warranty maintenance period.

C. The proposed maintenance Contract shall include the costs associated with maintaining the infrastructure system and dispatch console equipment to the most current firmware and software, and security patch updates and versions, for all operating systems, applications, and anti-virus software definitions as released by the Contractor over the post-warranty/maintenance period.

Attachment: 02._Exhibit_A_-_Technical_Specifications (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking

20. TECHNOLOGY EVOLUTION

A. Recent advances in technology are leading to a convergence of wireless technologies such as commercial carrier, LTE, Wi-Fi, Bluetooth, and others, with Land Mobile Radio systems. Due to technology evolution during the lifetime of the proposed P25 system, it is anticipated that a number of new features will evolve in LMR.

B. Tab 5.3 provides the Contractor with an opportunity to describe any planned features or functionality that may become available during the procurement, implementation, and operation of the proposed P25 system.

   a. The Contractor shall explain how they will be a partner to the County to evolve the P25 radio system into a broadband-based Public Safety Communications System.

   b. If the Contractor is currently manufacturing and selling products in this category, please provide a description of the product, its availability, features, functionality and pricing for optional purchase consideration by the County. If such products are offered, the Contractor shall be specific regarding the requirements on the infrastructure and subscriber side hardware or software required to support the technology.

Attachment: 02._Exhibit_A_-_Technical_Specifications (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking

APPENDIX A: USER EQUIPMENT

The quantities of user equipment and accessories can be found in the Pricing Sheets.

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APPENDIX B: UNIVERSAL AUDIO CARD CONNECTIONS

EOC-A Control Point Site UAC Connections	
Resource	**Equipment and Comments**
ARES	RACES Repeater at EOC-A Tower Site, 147.240 MHz/147.840 MHz
INTRCTY	Base Station at the EOC-A Tower Site
HALIFAX	Base Station at the EOC-A Tower Site for Flagler County
EVACPRM	MASTR III Repeater located at EOC-A Tower Site, Tx 460.575 MHz, Rx 465.575 MHz
AIR ONE	VHF Repeater at the EOC-A Tower Site
AIR GND	VHF Aviation Radio located at the EOC-A Tower Site
TOWER	VHF Aviation Radio located at the EOC-A Tower Site
VBI 1	M7100 Station located at the EOC-A Control Point
DISEMS3	Kenwood UHF Control Station at the EOC-A Control Point that transmits to a repeater at the Speedway
DF TAC 11	Daytona Speedway Fire TAC 11 is a UHF Unity XG-100M Control Station at the EOC-A Tower Site that transmits to a repeater at the Speedway
WHT WST	Simplex Station at the Orange City Site, Simplex 154.2800 MHz
ALLPTSC	M7100 Simplex Station at EOC-A Tower Site, Simplex 154.950 MHz
FIRE1 ZETRON IN	Audio and PTT Input Zetron at the EOSCC
FIRE2 ZETRON IN	Audio and PTT Input Zetron at the EOSCC
CPATCH1	FIN Interface at the EOSCC
CPATCH2	FIN Interface at the EOSCC
CPATCH3	FIN Interface at the EOSCC
CPATCH4	FIN Interface at the EOSCC

Attachment: 02._Exhibit_A_-_Technical_Specifications (2022-R-8 : Purchase of a P25 Radio

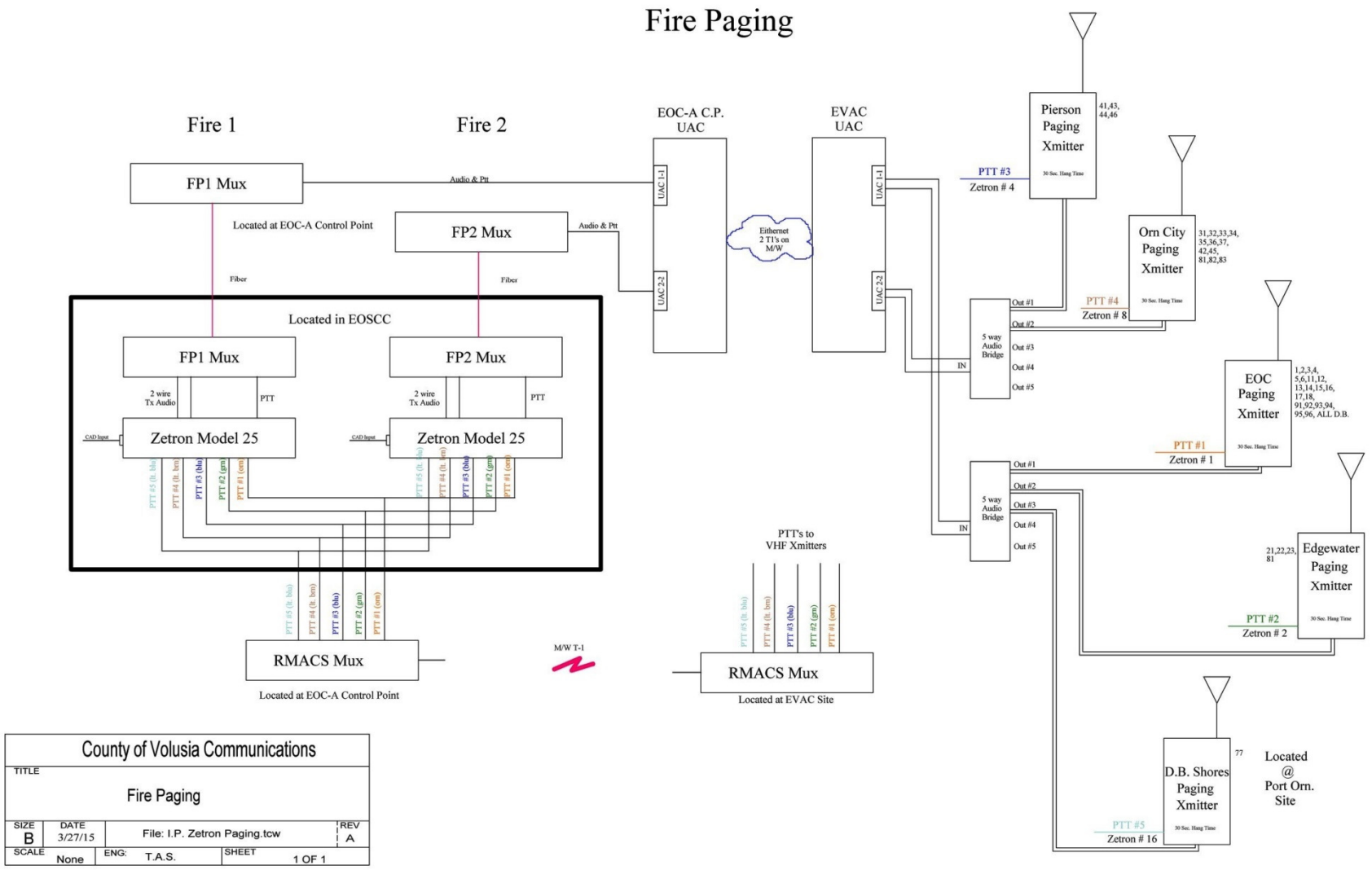
EVAC Tower Site UAC Connections	
Resource	**Equipment and Comments**
FIRE1 ZETRON OUT	Audio Output to 5-way Bridge at the EVAC Site Zetron at the EOSCC
FIRE2 ZETRON OUT	Audio Output to 5-way Bridge at the EVAC Site Zetron at the EOSCC
TAC 9CV	Control Station at the Pierson Site for Flagler TAC9
MED8 CI	Tx 463.175 MHz / Rx 468.175 MHz at EOC-B
WHT N/W	Simplex Station at the Pierson Site, Simplex 154.2800 MHz
EOC	Linker to Brevard County located at the Edgewater Site
MARINE22	Marine Channel 23 located at the Port Orange Site
VHF M/A	MASTR III Repeater located at the EOC-B Site, Tx 158.7275 MHz / Rx 155.4750 MHz
8CALL90	Mutual Aid Simulcast Repeater Hailing Channel located at the EVAC, Pierson, Orange City, Port Orange, and Edgewater tower sites
8TAC92NE	Mutual Aid Repeater located at the EVAC Site
8TAC93NE	Mutual Aid Repeater located at the EVAC Site
8TAC94NE	Mutual Aid Repeater located at the EVAC Site
MA FL NE	Mutual Aid Repeater located at the EVAC Site
8TAC92SE	Mutual Aid Repeater located at the Edgewater Site
8TAC93SE	Mutual Aid Repeater located at the Edgewater Site
8TAC94SE	Mutual Aid Repeater located at the Edgewater Site
MA FL SE	Mutual Aid Repeater located at the Edgewater Site

Attachment: 02._Exhibit_A_-_Technical_Specifications (2022-R-8 : Purchase of a P25 Radio

8TAC92NW	Mutual Aid Repeater located at the Pierson Site
8TAC93NW	Mutual Aid Repeater located at the Pierson Site
8TAC94NW	Mutual Aid Repeater located at the Pierson Site
MA FL NW	Mutual Aid Repeater located at the Pierson Site
8TAC92SW	Mutual Aid Repeater located at the Orange City Site
8TAC93SW	Mutual Aid Repeater located at the Orange City Site
8TAC94SW	Mutual Aid Repeater located at the Orange City Site
MA FL SW	Mutual Aid Repeater located at the Orange City Site
8TAC93EC	Mutual Aid Repeater located at the Port Orange Site

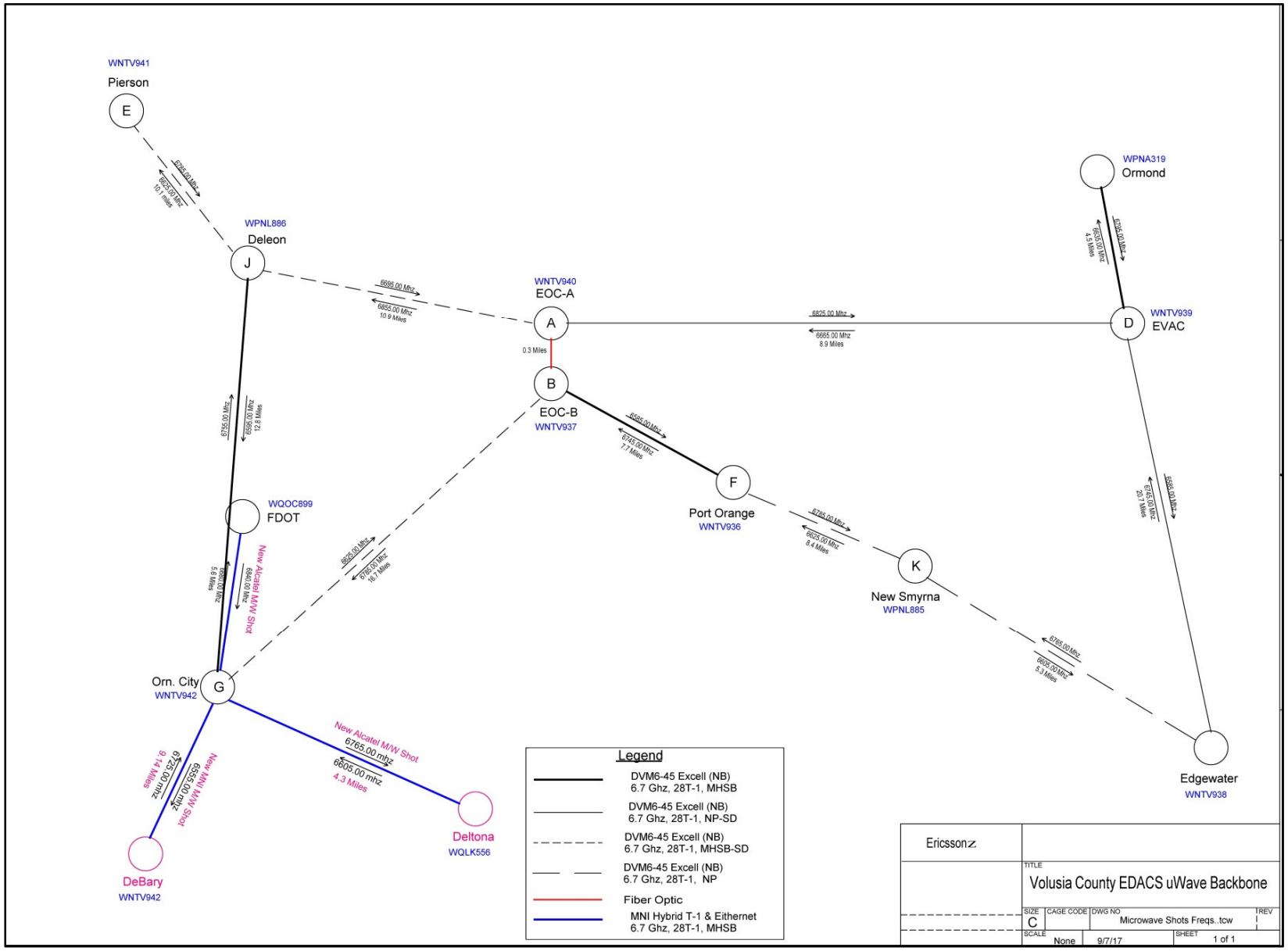
Attachment: 02._Exhibit_A_-_Technical_Specifications (2022-R-8 : Purchase of a P25 Radio

APPENDIX C: CURRENT VHF FIRE PAGING SYSTEM DIAGRAM



Attachment: 02._Exhibit_A_-_Technical_Specifications (2022-R-8 : Purchase of a P25 Radio

APPENDIX D: CURRENT BACKHAUL NETWORK DIAGRAM



Attachment: 02._Exhibit_A_-_Technical_Specifications (2022-R-8 : Purchase of a P25 Radio

APPENDIX E: FARMTON TOWER SITE SOIL BORING

BECHTOL ENGINEERING AND TESTING, inc.

May 31, 2019
BET Project No. G19038

TO: Ms. Laura E. Laser
Volusia County Engineering & Construction
123 West Indiana Avenue, Room 402
DeLand, Florida 32720

RE: Report of Geotechnical Data
Farmton Tower Relocate
Maytown Road
Parcel No. 943000000071
Oak Hill, Volusia County, Florida

Dear Ms. Laser:

As requested, Bechtol Engineering and Testing, Inc. (BET) has completed geotechnical services at the above referenced site. The purpose of BET's study was to evaluate physical and strength characteristics of subsurface materials encountered by test borings within the area of proposed drilled shaft foundations.

In order to evaluate the physical and strength characteristics of the site's shallow subsurface soils, BET advanced one (1) Standard Penetration Test (SPT) boring (ASTM D1586) to depth of 50 feet below existing ground surface. Approximate location of the boring is shown on the Boring Location Plan presented on the attached Figure 1. Encountered subsurface conditions are presented in the form of Soil Profiles, also on Figure 1. Additionally, suggested soil parameters are tabulated on Figure 1 to aid the design-build contractor in the design and construction of drilled shaft foundation support systems.

BET appreciates the opportunity to be of service, and trusts the attached geotechnical data is sufficient for your needs. However, if you should have any questions, or if BET may be of further service, please do not hesitate to call.

Respectfully,

Bechtol Engineering and Testing, Inc.
Certificate of Authorization No. 00005492

L. Patel

Love B. Patel
Project Engineer

Thomas Bechtol, P.E.
President / Principal Engineer
Thomas Bechtol, P.E., State of Florida, Professional Engineer, License No. 38538
This item has been digitally signed and sealed by Thomas Bechtol, P.E. on the date indicated here.
Printed copies of this document are not considered signed and sealed, and the signature must be verified on any electronic copies.

CONSULTING GEOTECHNICAL, ENVIRONMENTAL, AND MATERIALS TESTING ENGINEERS
605 West New York Avenue, Suite A • DeLand, FL 32720-6543 • Telephone (386) 734-3444
FAX (386) 734-8541

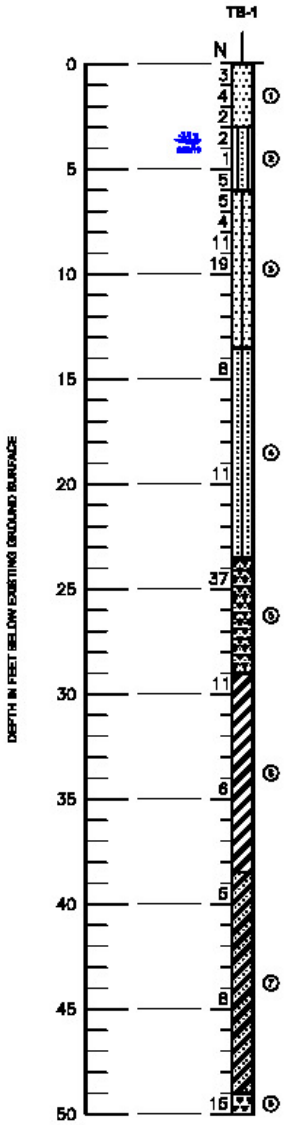
Attachment: 02._Exhibit_A_-_Technical_Specifications (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking

BORING LOCATION PLAN

SCALE: 1" = 100'

SOIL PROFILES

VERTICAL SCALE: 1" = 5'



SOIL & SYMBOL LEGEND

- ① DARK GRAY-BROWN TO LIGHT GRAY-BROWN SLIGHTLY SILTY FINE SAND, SOME WITH SLIGHTLY CEMENTED SANDS, (SP-SM), VERY LOOSE
- ② DARK BROWN TO BROWN SLIGHTLY SILTY FINE SAND, (SP-SM), VERY LOOSE TO LOOSE
- ③ REDDISH-BROWN TO BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND, (SP), (SP-SM), LOOSE TO MEDIUM DENSE
- ④ LIGHT BROWN TO BROWN SLIGHTLY SILTY FINE SAND, (SP-SM), LOOSE TO MEDIUM DENSE
- ⑤ GRAY AND LIGHT GRAY-BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND, SOME WITH SHELL FRAGMENTS, (SP), (SP-SM), DENSE
- ⑥ DARK GRAY SLIGHTLY SANDY CLAY, WITH TRACE SHELL FRAGMENTS, (CH), MEDIUM TO FIRM
- ⑦ GRAY SILTY CLAY, WITH TRACE SHELL FRAGMENTS, (CL), MEDIUM
- ⑧ GRAY SLIGHTLY SILTY TO SLIGHTLY CLAYEY FINE SAND, WITH SHELL FRAGMENTS, (SP-SM), (SP-SC), MEDIUM DENSE
- (SP) UNIFIED SOIL CLASSIFICATION GROUP SYMBOL AS DETERMINED BY VISUAL EXAMINATION
- GROUNDWATER LEVEL, REFERENCED IN FEET TO EXISTING GROUND SURFACE, DATE OF READING
- N STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT
- APPROXIMATE LOCATION OF STANDARD PENETRATION TEST BORING

SUGGESTED SOIL PARAMETERS

DEPTH (ft)	UNIT WEIGHT - γ (pcf)	FRICTION ANGLE - φ (degree)	COHESION - c (psf)	MODULUS OF SUBGRADE - K (pci)	STRAIN AT 50% STRESS - ε50 (in./in.)	RELATIVE DENSITY (%)
0 to 2	103	28	0.00	5	NA	13
2 to 5	41	28	0.00	7	NA	13
5 to 13.5	54	34	0.00	38	NA	38
13.5 to 23.5	51	33	0.00	28	NA	32
23.5 to 29	60	37	0.00	78	NA	68
29 to 49	68	0	0.61	31	1	NA
49 to 50	57	36	0.00	60	NA	48

BECHTOL ENGINEERING AND TESTING, Inc.
CONSULTING GEOTECHNICAL, ENVIRONMENTAL, AND MATERIALS TESTING ENGINEERS
Certificate of Authorization No. 4000408

SUPPLEMENTAL GEOTECHNICAL SERVICES
FARMTON TOWER RELOCATE
MAYTOWN ROAD
OAK HILL, FLORIDA

FIELD:	CT BS	DATE:	5/23/19
DRAWN:	LP	SCALE:	NOTED
CHECKED:	LP	PROJ. NO.:	G19088
APPROVED:	TB		FIGURE 1

Attachment: 02._Exhibit_A_-_Technical_Specifications (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking

APPENDIX F: CRITICAL BUILDINGS

Buildings	Address	Latitude	Longitude
Administration	TCK - 123 W. Indiana Ave, DeLand 32720	29.029	-81.305
	Historic Courthouse, 125 W. New York Ave., Deland 32720	29.029	-81.302
	EOSCC, Tiger Bay Rd, Daytona Beach, FL, 32114	29.029	-81.304
	IT ESDC, 49 Keyton Drive, Daytona Beach, 32114	29.140	-81.144
	Ocean Center - 101 N Atlantic Ave, Daytona Beach, FL 32118	29.229	-81.011
Airport	Airport Terminal - 700 Catalina Dr, Daytona Beach, FL 32114	29.184	-81.061
Hospitals	AdventHealth (Florida Hospital Deland) - 701 West Plymouth Ave. DeLand, Florida 32720	29.043	-81.317
	Florida Hospital Fish Memorial - 1055 Saxon Boulevard Orange City, Florida 32763	28.914	-81.285
	Florida Hospital Memorial Medical Center - 301 Memorial Medical Parkway Daytona Beach, Florida 32117	29.241	-81.107
	Florida Hospital New Smyrna - 401 Palmetto St New Smyrna Beach, FL 32168	29.020	-80.922
	Florida Hospital Oceanside - 264 South Atlantic Avenue Ormond Beach, Florida 32176	29.284	-81.037
	Halifax Medical Center - 303 N. Clyde Morris Blvd. Daytona Beach, FL 32114	29.200	-81.054
	Halifax Health Hospital, Deltona - 3300 Halifax Crossing Boulevard Deltona, FL 32725	28.958	-81.256
	Halifax Medical Center of Port Orange - 1041 Dunlawton Ave. Port Orange, FL 32127	29.126	-81.009
	Florida Hospital Ormond - 5535 S. Williamson Boulevard Ormond Beach, FL. 32174	29.250	-81.109
Sheriff's Department District Offices	District 2 (Deland) - 1706 S. Woodland Blvd. DeLand, FL 32720	28.998	-81.304
	District 2-A - Pierson Substation 106 S. Center St. Pierson, FL 32180	29.240	-81.463
	District 3 North - 1435 US Hwy 1, Suite D-3 Ormond Beach, FL 32174	29.330	-81.122

Attachment: 02._Exhibit_A_-_Technical_Specifications (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking

Buildings	Address	Latitude	Longitude
	District 3 South - 101 E. Canal Street New Smyrna Beach, FL 32168	29.026	-80.921
	District 4 - 1691 Providence Blvd. Deltona, FL 32725	28.906	-81.226
	District 6 - 79 S. Charles Beall Blvd. Debary, FL 32713	28.884	-81.308
Public Protection	Branch Jail - 1300 Red John Dr, Daytona Beach, FL 32124	29.140	-81.149
	Corrections - 1354 Indian Lake Rd, Daytona Beach, FL 32124	29.139	-81.146
Fire Stations	DAYTONA BEACH 7 2545 LPGA BLVD DAYTONA BEACH 32124	29.215	-81.112
	KEPLER RIDGE 42 1885 N KEPLER RD DELAND 32724	29.061	-81.262
	SPRING LAKES 32 2850 FIREHOUSE RD DELAND 32720	28.977	-81.301
	HALIFAX 13 15 SOUTHLAND RD ORMOND BEACH 32174	29.329	-81.112
	NORTH PENINSULA 14 1716 ATLANTIC AV ORMOND BEACH 32176	29.335	-81.061
	INDIAN MOUND 34 1700 ENTERPRISE OSTEEN RD ENTERPRISE 32725	28.857	-81.225
	LAKE HELEN 35 630 W MAIN ST LAKE HELEN 32744	28.985	-81.243
	DEBARY 33 75 S CHARLES R BEALL BLVD DEBARY 32713	28.884	-81.308
	ORANGE CITY 67 215 N HOLLY AV ORANGE CITY 32763	28.950	-81.298
	DELEON SPRINGS 41 5007 CENTRAL AV DELEON SPRINGS 32130	29.118	-81.350
	PIERSON 44 132 N FOUNTAIN DR PIERSON 32180	29.243	-81.467
	SPRUCE CREEK 12 1979 TAYLOR RD PORT ORANGE 32128	29.083	-81.066
	HALIFAX 11 1580 DERBYSHIRE RD DAYTONA BEACH 32117	29.244	-81.071
	GLENWOOD 46 920 GLENWOOD RD DELAND 32720	29.072	-81.328
	DAYTONA BEACH 4 1675 MASON AV DAYTONA BEACH 32114	29.211	-81.068

Attachment: 02._Exhibit_A_-_Technical_Specifications (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking

Buildings	Address	Latitude	Longitude
	DAYTONA BEACH 1 301 BEACH ST DAYTONA BEACH 32114	29.208	-81.017
	DAYTONA BEACH 3 945 N HALIFAX AV DAYTONA BEACH 32118	29.240	-81.021
	SOUTH DAYTONA FIRE STATION 1672 S RIDGEWOOD AV SOUTH DAYTONA 32119	29.181	-81.008
	PORT ORANGE 71 4200 RIDGEWOOD AV PORT ORANGE 32127	29.141	-80.986
	PONCE INLET 78 4680 S PENINSULA DR PONCE INLET 32127	29.099	-80.941
	DELTONA 61 1685 PROVIDENCE BLVD DELTONA 32725	28.906	-81.226
	DELTONA 63 2147 HOWLAND BLVD DELTONA 32738	28.924	-81.189
	DELTONA 64 236 FORT SMITH BLVD DELTONA 32738	28.880	-81.175
	DELAND 81 201 HOWRY AV DELAND 32720	29.027	-81.306
	ORMOND BEACH 91 364 S ATLANTIC AV ORMOND BEACH 32176	29.283	-81.036
	DAYTONA BEACH 2 126 BOTEFUHR AV DAYTONA BEACH 32118	29.203	-80.999
	NEW SMYRNA BEACH 53 238 INDUSTRIAL PARK AV NEW SMYRNA BEACH 32168	29.048	-80.940
	NEW SMYRNA BEACH 52 500 3RD AV NEW SMYRNA BEACH 32169	29.029	-80.900
	RIMA RIDGE 18 500 RODEO RD ORMOND BEACH 32174	29.266	-81.228
	NEW SMYRNA BEACH 51 3151 SR 44 NEW SMYRNA BEACH 32169	29.016	-80.995
	HALIFAX PLANTATION 16 3935 OLD DIXIE HWY ORMOND BEACH 32174	29.404	-81.145
	DELTONA 62 320 DIAMOND ST DELTONA 32725	28.900	-81.271
	DELAND 83 1655 E TAYLOR RD DELAND 32724	29.001	-81.263
	DELTONA 65 2983 HOWLAND BLVD DELTONA 32738	28.947	-81.233
	ORANGE CITY 68 743 HARLEY STRICKLAND BLVD ORANGE CITY 32763	28.919	-81.292
	PORT ORANGE 75 1701 TOWN WEST BLVD PORT ORANGE 32128	29.112	-81.053

Attachment: 02._Exhibit_A_-_Technical_Specifications (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking

Buildings	Address	Latitude	Longitude
	PORT ORANGE 72 6027 CENTRAL PARK BLVD PORT ORANGE 32127	29.093	-80.992
	NEW SMYRNA BEACH 50 1400 SR 44 NEW SMYRNA BEACH 32169	29.016	-80.938
	TURNBULL 23 1850 PIONEER TR NEW SMYRNA BEACH 32168	29.019	-80.946
	LAKE HARNEY 37 740 LAKE HARNEY WOODS BLVD MIMS 32754	28.731	-81.033
	FIRE TRAINING CENTER 15 3889 TIGER BAY RD DAYTONA BEACH 32124	29.147	-81.154
	OSTEEN 36 180 N SR 415 OSTEEN 32764	28.847	-81.163
	HOLLY HILL 96 1020 DAYTONA AV HOLLY HILL 32117	29.244	-81.038
	DAYTONA BEACH 5 627 N NOVA RD DAYTONA BEACH 32114	29.216	-81.046
	SOUTH BEACH 21 4840 S ATLANTIC AV NEW SMYRNA BEACH 32169	28.979	-80.861
	OAK HILL 22 213 N US HWY 1 OAK HILL 32759	28.870	-80.851
	ST JOHNS 45 2580 W NEW YORK AV DELAND 32720	29.023	-81.359
	PORT ORANGE 74 6701 AIRPORT RD PORT ORANGE 32128	29.068	-81.038
	EDGEWATER 57 2628 HIBISCUS DR EDGEWATER 32141	28.954	-80.896
	ORMOND BEACH 94 2301 AIRPORT RD ORMOND BEACH 32174	29.274	-81.146
	ORMOND BEACH 92 189 S NOVA RD ORMOND BEACH 32174	29.275	-81.082
	ORMOND BEACH 93 300 WILMETTE AV ORMOND BEACH 32174	29.291	-81.069
	DAYTONA BEACH 6 2020 BEVILLE RD DAYTONA BEACH 32114	29.164	-81.058
	PORT ORANGE 73 1090 CITY CENTER BLVD PORT ORANGE 32129	29.125	-81.024
	EDGEWATER 55 106 RHODE ISLAND ST EDGEWATER 32132	28.976	-80.897
	FS - DAYTONA BEACH INTERNATIONAL AIRPORT (DBIA) 2316 BELLEVUE AV DAYTONA BEACH 32114	29.178	-81.057
	DELAND 82 257 W INTL SPEEDWAY BLVD DELAND 32720	29.055	-81.308

Attachment: 02._Exhibit_A_-_Technical_Specifications (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking

Buildings	Address	Latitude	Longitude
	DAYTONA BEACH SHORES 77 3050 S ATLANTIC AV DAYTONA BEACH SHORES 32118	29.166	-80.978
Schools	School Board - 200 N. Clara Avenue, DeLand, Florida 32720	29.031	-81.309
Elementary Schools	Blue Lake Elementary - 282 Blue Lake Ave, DeLand, FL 32724	29.031	-81.275
	Champion Elementary - 921 Tournament Dr, Daytona Beach, FL 32124	29.208	-81.137
	Chisholm Elementary - 557 Ronnoc Ln, New Smyrna Beach, FL 32168	29.030	-80.932
	Citrus Grove Elementary - 729 Hazen Rd, DeLand, FL 32720	29.040	-81.336
	Coronado Beach Elementary - 3550 Michigan Ave, New Smyrna Beach, FL 32169	29.003	-80.879
	Cypress Creek Elementary - 6100 S Williamson Blvd, Port Orange, FL 32128	29.084	-81.027
	DeBary Elementary - 88 W Highbanks Rd, DeBary, FL 32713	28.891	-81.319
	Deltona Lakes Elementary - 2022 Adelia Blvd, Deltona, FL 32725	28.921	-81.216
	Discovery Elementary - 975 Abagail Dr, Deltona, FL 32725	28.892	-81.250
	Edgewater Public School - 801 S Old County Rd, Edgewater, FL 32132	28.984	-80.907
	Enterprise Elementary - 211 Main St, Enterprise, FL 32725	28.871	-81.266
	Forest Lake Elementary - 1600 Doyle Rd, Deltona, FL 32725	28.874	-81.229
	Freedom Elementary - 1395 S Blue Lake Ave, DeLand, FL 32724	28.994	-81.272
	Friendship Elementary - 2746 Fulford St, Deltona, FL 32738	28.934	-81.188
	Holly Hill School - 1500 Center Ave, Holly Hill, FL 32117	29.249	-81.056
	Horizon Elementary - 4751 Hidden Lake Dr, Port Orange, FL 32129	29.120	-81.039
	Indian River Elementary - 650 Roberts Rd, Edgewater, FL 32141	28.946	-80.891

Attachment: 02._Exhibit_A_-_Technical_Specifications (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking

Buildings	Address	Latitude	Longitude
	Longstreet, R. J. Elementary - 2745 S Peninsula Dr, Daytona Beach, FL 32118	29.177	-80.986
	Manatee Cove Elementary - 734 W Ohio Ave, Orange City, FL 32763	28.939	-81.309
	Marks, George W. Elementary - 1000 N Garfield Ave, DeLand, FL 32724	29.046	-81.297
	McInnis, Louise S. Elementary - 5175 US-17, De Leon Springs, FL 32130	29.123	-81.351
	Orange City Elementary - 555 E University Ave, Orange City, FL 32763	28.951	-81.292
	Ormond Beach Elementary - 100 Corbin Ave, Ormond Beach, FL 32174	29.284	-81.058
	Ortona Elementary - 1265 N Grandview Ave, Daytona Beach, FL 32118	29.247	-81.024
	Osceola Elementary - 100 Osceola Ave, Ormond Beach, FL 32176	29.286	-81.039
	Osteen Elementary - 500 Doyle Rd, Osteen, FL 32764	28.855	-81.176
	Palm Terrace Elementary - 1825 Dunn Ave, Daytona Beach, FL 32114	29.198	-81.074
	Pathways Elementary - 2100 Airport Rd, Ormond Beach, FL 32174	29.272	-81.135
	Pierson Elementary - 657 N Center St, Pierson, FL 32180	29.247	-81.464
	Pine Trail Elementary - 300 Airport Rd, Ormond Beach, FL 32174	29.276	-81.114
	Port Orange Elementary - 402 Dunlawton Ave, Port Orange, FL 32127	29.142	-80.992
	Pride Elementary - 1100 Learning Ln, Deltona, FL 32738	28.953	-81.195
	Read-Pattillo Elementary - 400 6th St, New Smyrna Beach, FL 32168	29.010	-80.920
	South Daytona Elementary - 600 Elizabeth Pl, South Daytona, FL 32119	29.169	-81.008
	Spirit Elementary - 1500 Meadowlark Dr, Deltona, FL 32725	28.906	-81.242
	Spruce Creek Elementary - 642 Taylor Rd, Port Orange, FL 32127	29.105	-81.005
	Starke, Edith I. Elementary - 730 S Parsons Ave, DeLand, FL 32720	29.016	-81.309
	Sugar Mill Elementary - 1101 Charles St, Port Orange, FL 32129	29.148	-81.001

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Buildings	Address	Latitude	Longitude
	Sunrise Elementary - 3155 Phonetia Dr, Deltona, FL 32738	28.882	-81.176
	Sweetwater Elementary - 5800 Victoria Gardens Blvd, Port Orange, FL 32127	29.116	-81.018
	Timbercrest Elementary - 2401 Eustace Ave, Deltona, FL 32725	28.932	-81.231
	Tomoka Elementary - 999 Old Tomoka Rd, Ormond Beach, FL 32174	29.274	-81.091
	Turie T. Small Elementary - 800 South St, Daytona Beach, FL 32114	29.196	-81.027
	Volusia Pines Elementary - 500 E Kicklighter Rd, Lake Helen, FL 32744	28.971	-81.226
	Westside Elementary - 1210 Jimmy Ann Dr, Daytona Beach, FL 32117	29.224	-81.073
	Woodward Avenue Elementary - 1201 S Woodward Ave, DeLand, FL 32720	29.010	-81.331
Middle Schools	Campbell Middle School - 625 S Keech St, Daytona Beach, FL 32114	29.195	-81.032
	Creekside Middle School - 6801 Airport Rd, Port Orange, FL 32128	29.066	-81.041
	DeLand Middle School - 1400 Aquarius Ave, DeLand, FL 32724	29.005	-81.297
	Deltona Middle School - 250 Enterprise Rd, Deltona, FL 32725	28.879	-81.273
	Galaxy Middle School - 2400 Eustace Ave, Deltona, FL 32725	28.930	-81.231
	Heritage Middle School - 1001 Parnell Ct, Deltona, FL 32738	28.892	-81.173
	Hinson Middle School - 1860 N Clyde Morris Blvd, Daytona Beach, FL 32117	29.240	-81.094
	Holly Hill School - 1500 Center Ave, Holly Hill, FL 32117	29.249	-81.056
	New Smyrna Beach Middle School - 1200 S Myrtle Ave, New Smyrna Beach, FL 32168	29.005	-80.923
	Ormond Beach Middle School - 151 Domicilio Ave, Ormond Beach, FL 32174	29.309	-81.071
	River Springs Middle School - 900 W Ohio Ave, Orange City, FL 32763	28.940	-81.312
	Silver Sands Middle School - 1300 Herbert St, Port Orange, FL 32129	29.132	-81.017

Attachment: 02._Exhibit_A_-_Technical_Specifications (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking

Buildings	Address	Latitude	Longitude
	Southwestern Middle School - 605 New Hampshire Ave, DeLand, FL 32720	29.009	-81.314
High Schools	Atlantic High School - 1250 Reed Canal Rd, Port Orange, FL 32129	29.149	-81.027
	DeLand High School - 800 N Hill Ave, DeLand, FL 32724	29.040	-81.283
	Deltona High School - 100 Wolf Pack Run, Deltona, FL 32725	28.947	-81.246
	Mainland High School - 1255 W International Speedway Blvd, Daytona Beach, FL 32114	29.198	-81.053
	New Smyrna Beach High School - 1015 10th St, New Smyrna Beach, FL 32168	29.003	-80.930
	Pine Ridge High School - 926 Howland Blvd, Deltona, FL 32738	28.888	-81.163
	Seabreeze High School - 2700 N Oleander Ave, Daytona Beach, FL 32118	29.266	-81.030
	Spruce Creek High School - 801 Taylor Rd, Port Orange, FL 32127	29.110	-81.015
	Taylor, T. Dewitt Middle-High School - 100 E Washington Ave, Pierson, FL 32180	29.248	-81.458
	University High School - 1000 W Rhode Island Ave, Orange City, FL 32763	28.932	-81.314

Attachment: 02._Exhibit_A_-_Technical_Specifications (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking

APPENDIX G: END OF MANUFACTURE AND END OF PRODUCT SUPPORT

The Contractor shall provide a list of any known End of Manufacture and End of Product Support for each equipment provided as part of this proposal.

Part Name	Part Number	Description	Product Release Date	End of Manufacture Date	End of Product Support Date	Life Cycle Period

Attachment: 02._Exhibit_A_-_Technical_Specifications (2022-R-8 : Purchase of a P25 Radio

Attachment: 05._Exhibit_A.3_-_County_Computing_Security_Proced (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Volusia County
FLORIDA

Information Technology Division

Computing Security Procedures

Last Revised Date: August 19, 2019

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Attachment: 05._Exhibit_A.3_-_County_Computing_Security_Proced (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Contacts

Main Contact

This document will make references to the contacts found below. Contact information may also be found on ENN. If you are unable to locate someone or have a question, always feel free to contact the IT Support Desk for assistance**.**

IT Support Desk phone number	740-5222 or x 15222
IT Support Desk email	IT_SupportDesk@volusia.org

IT Security Officer phone number	740-5222 or x 15222
IT Security Officer email	IT_SupportDesk@volusia.org

Other Contacts

Employees of the Sheriff's Office, Elections, Library Services, and Property Appraiser should contact their local IT support instead of the Information Technology Support Desk.

Sheriff's Office IT phone number	x 13501
Sheriff's Office IT email	infosys@vcso.us

Elections IT contact	Gary Buchanan
Elections IT phone number	x 15801
Elections IT email	gbuchanan@volusia.org

Library Services contact	Annie Powers
Library Services IT phone number	x 11216
Library Services IT email	apowers@volusia.org

Property Appraiser IT contact	Mark James
Property Appraiser IT phone number	x 15511
Property Appraiser IT email	mjames@volusia.org

Attachment: 05._Exhibit_A.3_-_County_Computing_Security_Proced (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Objectives, Scope, and Compliance

Objectives of Procedures

The primary objective of the *Computing Security Procedures* is to protect Volusia County (County) Computing Resources from being intentionally or unintentionally compromised. The secondary objective is to establish responsibility and accountability for the security of County Computing Resources.

Scope of Procedures

These procedures apply to all Users of County Computing Resources.

Compliance

Compliance with the Volusia County *Computing Security Procedures* is mandatory and considered a condition of continued employment. Failure to comply with the *Computing Security Procedures* may result in disciplinary action.

All vendors, contractors, interns, volunteers, and consultants performing work on behalf of the County are considered Users and are required to follow the *Computing Security Procedures* when utilizing County Computing Resources. Failure to follow the *Computing Security Procedures* may be considered a breach of contract.

Department/division management is responsible for enforcement of these Procedures to protect County Computing Resources from unauthorized access, compromise, use, destruction, or modification. For contracted work, it is the responsibility of the prime contractor to enforce the *Computing Security Procedures* with respect to contractor's staff and subcontractors.

Departments and divisions may implement more stringent Procedures in addition to these minimum Procedures.

County Computer Systems store, process, and transmit sensitive information, including criminal justice, personally identifiable information, protected health information, and critical infrastructure information. Each type of sensitive information includes additional protection requirements that flow down to the County through Federal statutes, regulations and policy. Failure to follow the *Computing Security Procedures* may result in a criminal offense as described in the Florida Computer Crimes Act (Chapter 815, Florida Statutes) and/or civil or criminal penalties for mishandling of sensitive information governed by Federal statutes, regulations, and policy.

Definition of Terms

Definitions are included in Appendix A: Definition of Terms

Attachment: 05._Exhibit_A.3_-_County_Computing_Security_Proced (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Avoiding Malware, Viruses and Hoaxes

Background

Computer malware (e.g., viruses, worms, spyware, ransomware, Trojan horses, rootkits, etc.) are programs designed to do damage or other unwanted actions to a computer including making unauthorized changes to applications, files, email, networks, and data. Malware can cause the destruction and/or corruption of County Computing Resources, compromise information, and can prevent Users from completing work. Intentionally introducing a virus, worm, Trojan horse, or other malicious program to a network is a criminal offense. For more information on criminal offenses, see the Florida Computer Crimes Act (Chapter 815, Florida Statutes).

Similar in nature, hoaxes warning of malware outbreaks are sent via email or other similar communication methods. Along with the warning are instructions to prevent infection. These instructions typically involve deleting files and forwarding the warning to friends and relatives. If you delete these files your system will no longer function correctly.

Ransomware is a type of malware that prevents or limits Users from accessing their system, either by locking the system's screen or by locking the Users' files unless a ransom is paid. More modern ransomware families, collectively categorized as crypto-ransomware, encrypt certain file types on infected systems and force users to pay the ransom through certain online payment methods to get a decrypt key. Users may encounter this threat through a variety of means. Ransomware can be downloaded onto systems when unwitting users visit malicious or compromised websites. It can also be delivered as attachments to email, through malicious web pages in advertisements, or be downloaded by other malware.

Phishing is another form of hoax that utilizes emails, texts, or phones to solicit personal information or cause a person to visit fraudulent web sites. In Phishing, the end goals are theft of your identity and money through the acquisition of information such as account passwords and other confidential data, or the ability to gain unauthorized access to computer systems based on information disclosed during the phishing expedition.

Cyber criminals are writing viruses that specifically use or target removable media (USB drives, portable hard drives, smartphone memory). If you plug in an infected USB drive into a work or home computer, a virus could be uploaded and potentially cripple the machine and others on the network. Removable media can already be infected at the time of purchase if quality control measures are not adequate during the manufacturing or supply chain process. Only use removable media from trusted sources.

Procedure

All County Computing Equipment, including but not limited to workstations, laptops, tablets, and servers, will be provided with anti-virus protection. The anti-virus program will be running at all times and set to automatically apply updated virus protections released by the anti-virus vendor. The operating systems on these devices will be updated using either Information Technology's Windows update server or using the operating system's vendor site.

All non-County Computing Equipment with authorized access to the County's network is required to be equipped with an approved anti-virus program. The anti-virus program will be running at all times and set to automatically apply updated virus protections released by the anti-virus vendor.

Attachment: 05._Exhibit_A.3_-_County_Computing_Security_Proced (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Standard

Information Technology uses multiple anti-virus servers running enterprise class anti-virus software. The anti-virus servers are authorized by the anti-virus software vendor to download anti-virus updates over a secured Internet connection. When the vendor posts an update, the anti-virus servers automatically download the update. All County Computing Equipment is initially set up to automatically download anti-virus updates from the anti-virus servers when they are posted.

All non-County Computing Equipment used to perform county job functions will be configured with continuously running anti-virus software as considered necessary by Information Technology and department management.

Regardless of who owns or provides Computing Equipment used to perform county job functions, Users shall not install any applications, change any configurations, tamper with, disable or take any other action that interferes with anti-malware software and operating system updates.

Guidelines

User Responsibilities

- Be aware and do not ignore the symptoms of a virus or other malware. These symptoms include slow workstation response, system failure, system prompts, anti-virus software messages, or automatic reboots.

- Report malware symptoms, anti-virus software warnings, and suspected hoaxes and Phishing to the Information Technology Support Desk. DO NOT FORWARD THE VIRUS. Employees of the Sheriff's Office, Elections, Library Services, and Property Appraiser should contact their local IT support instead of the Information Technology Support Desk.

- Download files, attach devices, and use media from trusted sources only.

- Run anti-virus scans on all files and media downloaded to workstations, laptops, tablets, servers, or other County Computing Resources, even those from a trusted source. This includes files stored on a USB drive, CD, DVD, diskette, other storage media, and the Internet. How-to instructions are available on Information Technology's ENN home page under the training section.

- Ensure anti-virus software is running on your Computing Equipment. How-to instructions are available on Information Technology's ENN home page under Resources, Reference Library, How To, Verifying Workstation Anti-Virus.

- Follow instructions for avoiding or fixing a virus infection only if provided by the Information Technology Support Desk, department/division support staff, ENN Hot News, or a workstation analyst. Forward any instructions you receive from other sources to the Information Technology Support Desk or local department/division support staff for review and validation.

- Ensure an approved anti-virus program is installed, enabled and up to date on non-County equipment prior to connecting equipment to County equipment or utilizing County data.

Attachment: 05._Exhibit_A.3_-_County_Computing_Security_Proced (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Approved Anti-Virus Guidelines for Home PCs.
http://ennprod/informationtechnology/cabinet/standards/Anti_Virus_Guidelines.pdf

- Purchase USB drives and other removable storage from reputable vendors only. An unusually low price could indicate that a USB drive may be counterfeit or infected with malware.

- Do not connect removable drives from unknown sources (e.g. found on floor, received in the mail unsolicited, promotional giveaways) to County equipment.

- Do not purchase USB drives unless they are on the County's approved list. For a list of approved USB drives:

Approved USB drives
http://ennprod/informationtechnology/cabinet/standards/Jump_Drive_Procurement_Guidelines.PDF

- Avoid Phishing scams by carefully reviewing email prior to clicking on links or following questionable instructions even when valid-looking logos are used. Phishing scams may contain grammar mistakes, request personal information, and reference transactions pertaining to deliveries, bank accounts, or the IRS as a way to appear legitimate. Contact the Information Technology Support Desk if further assistance is needed. Employees of the Sheriff's Office, Elections, Library Services, and Property Appraiser should contact their local IT support instead of the Information Technology Support Desk.

- For more information on phishing, visit the Federal Trade Commission website. The Federal Trade Commission is responsible for policing the Internet with respect to fraud.

Federal Trade Commission phishing article
http://www.consumer.ftc.gov/articles/0003-phishing

Information Technology Responsibilities

- Install and maintain appropriate anti-malware/anti-virus protection software as considered necessary by Information Technology on all County Computing Equipment. Local IT support within the Sheriff's Office, Elections, Library Services, and Property Appraiser will install and maintain appropriate anti-malware/anti-virus protection software on all equipment under their control.

- Review anti-malware logs daily.

- Immediately contain and eradicate any malware infections.

- Maintain anti-malware protection for the County email system that automatically identifies and deletes or quarantines infected email or attachments. Local IT support within the Sheriff's Office is responsible for the Sheriff's email anti-virus protection.

- Notify Users about widespread malware threats and known hoaxes that may impact the County.

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- Install operating system software security updates on County Computing Equipment. Local IT support within the Sheriff's Office, Elections, and Library Services, will install and maintain appropriate updates on all equipment under their control.

- Respond in a timely manner to any type of malware alert and take corrective action. Local IT support within the Sheriff's Office, Elections, Library Services, and Property Appraiser will respond in a timely manner to any type of malware alert and take corrective action on all equipment under their control.

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Disposal of Computing Equipment and Media

Background

County Computing Equipment and physical and electronic media may contain software, applications, and data used to provide County services. If not removed upon disposal, sensitive information such as criminal justice information (CJI), health information, Personally Identifiable Information (PII), or passwords may pose a security risk. Physical media includes printouts, printed imagery and other paper documents containing sensitive information. Electronic media includes but is not limited to hard-drives, tape cartridges, CDs, DVDs, printer ribbons, USB drives, printer and copier hard-drives, SIM cards and smartphones. Federal regulations detail the proper handling and disposal of physical and electronic media. These regulations ensure compliance with Health Information Portability and Accountability Act (HIPAA) and CJI mandates and are consistent with the intent of Florida Statute to protect people's personal information.

HIPAA laws and regulations
https://www.hhs.gov/hipaa/for-professionals/privacy/laws-regulations/

CJIS Security Policy Resource Center
https://www.fbi.gov/services/cjis/cjis-security-policy-resource-center

Additionally, Florida Statutes protecting personal and health information may also be relevant when County activities are governed by the State, such as oversight and control of the elections process, critical infrastructure and healthcare. Adherence to this procedure also should enable compliance with Federal and State requirements.

Procedure

When no longer needed, physical and electronic media used to process, store and/or transmit County data shall be properly disposed of or repurposed in accordance with measures established by the County of Volusia.

a. Physical media (printouts, printed documents, printed imagery, printed facsimile) containing CJI, HIPAA or sensitive data shall be disposed of by one of the following methods:
    i. Shredding using County of Volusia cross-cut shredders.
    ii. Placing CJI in locked shredding bins for the County's authorized contractor to come onsite and shred, witnessed by County personnel throughout the entire process.
    iii. Placing HIPAA and non-CJI sensitive data in locked shredding bins for the County's authorized contractor to pick up and shred.
    iv. Incineration of sensitive data at a contractor incineration site.

b. Electronic media (hard disk drives, tape cartridges, CDs, printer ribbons, flash drives, printer and copier hard-drives, etc.) shall be prepared for disposal or reuse by one of the following methods:
    i. Overwriting (at least 3 times): This effective method clears data from magnetic media. As the name implies, overwriting uses a program to write binary digits (1 and 0) onto the location of the media where the file to be sanitized is located. Electronic media may now be sent to auction or reused.
    ii. Degaussing: This method magnetically erases data from magnetic media. Degaussing using strong magnets designed for degaussing purposes or electric degaussing methods

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are acceptable. Common magnets, such as those used to hang a picture on a wall are weak and cannot effectively degauss magnetic media.

iii. Destruction: Electronic media can be physically dismantled by methods of crushing, disassembling, mutilation, incineration, etc., ensuring that the platters have been physically destroyed so that no data can be pulled. This method may be performed by CJI Authorized Personnel.

CJI Authorized Personnel must witness and log both physical and electronic media disposal when CJI is involved.

Standards

Shredding is only to be used for disposal of paper-based physical media. Electronic media being disposed of will be rendered non-usable by physical means. CDs, DVDs, floppy disks, and like type of electronic media will destroyed by incineration, mutilation (e.g., crushed, impaled, etc.), or chemical decomposition. Hard disk drives, USB drives, memory cards, and like media will be erased using a degausser approved by the Federal Government or physically destroyed through mutilation or incineration.

Electronic media being repurposed will be overwritten at least three times before being repurposed.

Guidelines

User Responsibilities

a. Ensure all data have been appropriately preserved (e.g., backed up, copied, printed out, etc.) consistent with County records management retention requirements to comply with Florida's Sunshine law.

b. Shred paper-based physical media containing CJI, HIPAA or other sensitive information.

c. Format using software that meets Department of Defense standards for all portable electronic storage media prior to repurposing. Destroy by physical means all non-usable portable electronic media including, but not limited to, disk drives, USB drives, diskettes, CDs, DVDs, and tape prior to disposal.

d. Contact the Information Technology Support Desk to arrange for a workstation analyst to destroy data on Computing Equipment prior to repurposing or disposal.

e. For county owned smartphones, the following at a minimum needs to be done. For a comprehensive list and detailed instructions, see the below link.
    1. Backup all data and connections, including text/instant messages to comply with Florida's Sunshine law,
    2. Unpair any connected devices,
    3. Turn off and sign out of any message applications,
    4. Sign out of all social media applications,
    5. Erase all contents and settings,
    6. Encrypt the data. Encrypting the data prior to performing the factory reset will protect residual data residing in storage,
    7. Perform a factory reset,
    8. Verify all settings are cleared,

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9. Provide your supervisor with the device lock codes and any associated business user-ids and passwords that may be needed for re-provisioning of the device if you will no longer be utilizing the device or associated accounts for county business.
10. Remove the SIM card and any micro SD cards prior to disposing of or trading in the phone.

Smart Phone Reset Guide
http://ennprod/informationtechnology/cabinet/howtoguides/Smartphone_Reset_Guide.pdf

f. Contact the Information Technology Support Desk if further assistance is needed. Employees of the Sheriff's Office, Elections, Library Services, and Property Appraiser should contact their local IT support instead of the Information Technology Support Desk.

Information Technology Responsibilities

a. Prepare drives for disposal using one of the following methods:

Method of Drive Disposal	Approved Drive Handling
PC replacement end-of-life (spinning drive and SSD)	Wipe using Department of Defense Sanitation Standards
Internal retention and repurpose (spinning drive and SSD)	Wipe using Department of Defense Sanitation Standards
Device disposal (spinning drive)	Wipe using Department of Defense Sanitation Standards, degauss or physically destroy
Device disposal (SSD)	Wipe using Department of Defense Sanitation Standards or physically destroy

b. Destroy by physical means all inoperable portable electronic media including but not limited to disk drives, USB drives, diskettes, CDs, DVDs and tape prior to disposal.

c. Disposal of any electronic media that previously contained CJI and HIPAA information shall be witnessed or carried out by CJI Authorized Personnel. Destruction records are required for CJI information and shall be maintained for two (2) years within the IT Division folder structure called ITD:\IT_Operational\CJI_Hard_Drive_Destruction. The records shall indicate the date of the destruction, identify the material destroyed, destruction method, and be signed by the individuals designated to destroy and witness the destruction. CJI Authorized Personnel serving as destruction witnesses shall be required to know, through their personal knowledge, that such material was destroyed.

Regulations and requirements regarding handling of electronic media are expected to change over time. IT personnel are responsible for ensuring continued compliance with governing regulations when handling any electronic media that contains HIPAA, CJI or any other sensitive data. Information Technology (IT) systems that have been used to process, store or transmit CJI and/or sensitive information shall not be released from the County's control until the equipment has been sanitized and all stored information has been cleared using one of the above methods.

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Employee Remote Access

Background

While offering potential benefits, remote access to County resources introduces risks to the security of applications and data.

County Information Technology professionals cannot control the operating system, security settings, installation of security patches, specialized security software, or physical access to an employee-owned PC, laptop, tablet, or smartphone. Employee-owned computing equipment is considered unmanaged and unsecure.

Each remote access account and access point to the County network increases the security risk. Management is asked to grant remote access requests only where use will significantly benefit County operations.

Procedure

- Remote access will be provided in a secure manner and at the discretion of an employee's division manager and with Information Technology concurrence. Under no circumstance is it permissible to remotely access any Computing Equipment which can access criminal justice data (CJI) unless acceptable encryption methods are in place. The Florida Department of Law Enforcement (FDLE) and Federal Bureau of Investigation (FBI) have strict policies in place regarding this type of access.
- Management will ensure that remote access is a significant benefit to County operations.
- Remote access will be gained only through access points under the management of County Information Technology or approved by County Information Technology.
- Employee workstations directly attached to the County network and configured to permit remote access without management approval are a violation of this Procedure.
- Remote access to computer resources accessing CJI requires advanced authentication.
- The County is not responsible for the configuration, repair, or diagnosis of non-County Computing Equipment.

Standard

Remote access to County email does not require a User to have access to the County network. All employees with County GroupWise email accounts may use this link to securely access email via the Internet:

GroupWise secure webmail
https://webmail.vcgov.org

With management approval, County and employee-owned Computing Equipment may be provided access to the GroupWise email system in an active synchronization mode where appointments and

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email are pushed to the device. Management shall determine the need, and work with Information Technology to approve these requests.

Workstations, by default, will be deployed with remote access disabled.

The County maintains a virtual private network (VPN) solution to provide secure remote access by vendors and employees. The VPN solution provides for the authentication of Users, encryption of communication, and authorization of selected Computing Resources by logon.

Guidelines

User Responsibilities

- Upon establishing a VPN connection on a private device, connect to a County Computing Resource first, such as your County desktop PC, instead of connecting directly to the file system.
- Safeguard hardware or software provided by the County.
- Provide personal Internet accounts, phone lines, cable connections, remote wiring, etc., required at home or other areas outside of County premises.
- Install and maintain appropriate security software including, but not limited to anti-virus software, security patches, and automatic software updates.

Approved Anti-Virus Guidelines for Home PCs.
http://ennprod/informationtechnology/cabinet/standards/Anti_Virus_Guidelines.pdf

- Provide for the maintenance, diagnosis, and repair of non-County owned hardware and software.
- Use discretion as laws regarding public records may apply to remotely attached workstations and devices including your employee-owned Computing Equipment.
- Ensure all County data, including public records, are properly safeguarded and not stored on a personal device.
- Ensure that remote access accounts, user accounts, and equipment are not available to unauthorized individuals. Prevent access to these accounts by spouse, children, or others that may have physical access to the equipment.
- Lock the screen with a password if the Computing Equipment is left unattended.
- Contact the Information Technology Support Desk if further assistance is needed. Employees of the Sheriff's Office, Elections, Library Services, and Property Appraiser should contact their local IT support instead of the Information Technology Support Desk.

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Department/Division Liaison Responsibilities

- Contact the Information Technology Support Desk upon receiving division director authorization to request remote access for an employee.

Information Technology Responsibilities

- Review and respond to remote access requests within five business days.
- Maintain the necessary remote access points, firewalls, and security measures to aid in keeping the networks secure.
- Implement and maintain remote access accounts limiting external Users to only those resources required to perform their duties.
- Provide Users guidance in configuration, access, and use of remote access.
- Provide for the maintenance, diagnosis, and repair of County owned hardware and software.
- Provide quarterly reports to department/division liaisons or their designees listing remote access accounts for verification that information is accurate. Disable accounts where appropriate.
- Provide encryption software that uses FIPS 140-2 validated cryptographic modules to all remote users that require County data be encrypted to meet regulatory compliance.

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Equipment, Data, and Media

Background

Computer hardware, software, and networks are the property of Volusia County and are provided for the purpose of conducting County business. Incidental and occasional personal use may be permitted by management as outlined in the Volusia County Communications Policy.

Volusia County Communications Policy
http://ennprod.covdnssrv.co.volusia.fl.us/communityinfo/Communications-Policy.pdf

News agencies frequently highlight events where a laptop or other electronic media carrying personal information on hundreds of thousands of employees, retirees, applicants, or other files are stolen or lost. The information lost or stolen is frequently more than enough to pose a potential threat of identity theft and discredits the organization.

Procedure

- Access to Computing Resources shall be restricted to authorized Users. Authorization to use Computing Resources will be limited to the User's need to fulfill job requirements. Management within the department responsible for the application, data, and/or equipment is responsible for authorizing all User access. Security will be configured to adhere to the standards and conventional practices of internal and external auditors in accordance with the principle of least privilege.

- Access to all computer resources requires secure authentication provided by Information Technology. Where advanced authentication is required, such as accessing CJI data, computer users shall use advanced authentication security measures as deployed by Information Technology. The advanced authentication system will be compliant with the FBI Computing Security Policy. Examples include hardware tokens, software tokens, certificates, and other approved measures.

CJIS Security Policy Resource Center
https://www.fbi.gov/services/cjis/cjis-security-policy-resource-center

- County management retains the right to inspect any and all files, equipment, and logs created and/or stored on County Computing Equipment.

- It is the employee's or vendor's responsibility to protect from loss or theft any data in their possession. Data encryption is required when removing laptops or electronic media from County facilities if the data files contain sensitive or confidential information such as social security numbers or protected health information.

- Installation of all computer software on County Computing Equipment shall be authorized by Information Technology.

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Standards

- Software installation on County Computing Equipment will be performed by qualified and authorized staff. Staff will follow industry-accepted installation and verification practices to ensure that software is installed and configured to provide maximum security and reliability.

- Windows operating system password protected screen savers will be configured to activate after fifteen minutes of inactivity on workstations and laptop computers. On a case-by-case basis management can approve extending the time of inactivity in accordance with the CJIS Security Policy Section 5.5.5 Session Lock and/or disabling the screen saver timeout. Examples of where this would be valid are a kiosk, a secure front counter device, and a surveillance monitor.

Guidelines

User Responsibilities

- Be alert to the presence of unauthorized persons in the work area. Contact a supervisor, building security, and/or law enforcement if a person entering the work area does not provide credentials, seems suspicious, or poses a possible threat.

- Store and secure USB drives, CDs, DVDs, diskettes, or other media out of sight when not in use. Media containing highly sensitive or confidential data shall be appropriately secured, and when warranted, the data encrypted. When in doubt, request Information Technology or department/division assistance on encryption and proper protection.

- Use County Approved Encryption Methods when accessing or storing County data that must be protected to meet regulatory requirements. It is the User's responsibility to identify and know which data are required to be encrypted.

- Protect Computing Resources including desktops, laptops, tablets, smartphones, USB drives, CDs, DVDs, diskettes, and media from environmental hazards such as direct sunlight, magnetic fields, food, smoke, liquids, humidity, dirt, dust, sand, drops/bangs, power surges/cuts, and extreme heat or cold. Users who neglect this may be accountable for any resulting loss or damage.

- Contact Information Technology Support Desk for equipment recommendations and approval (e.g. laptops, printers, GPS units, plotters).

- Contact Information Technology Support Desk for equipment installations, disconnections, modifications, relocations, and software installations. This includes printers and other peripherals.

- Follow this Procedure and any additional departmental procedures regarding the use of Computing Resources including data outside of County offices.

- Follow this Procedure and any additional departmental procedures regarding the downloading of data. Download data from trusted sources only.

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- Before downloading files or using files or data from even a trusted source, check that the anti-virus software on your computing equipment is current and operational. Scan all downloaded material using anti-virus software prior to use. How-to instructions are available on Information Technology's ENN home page under the training section.

- Do not take any actions to disable or prevent screen saver from activating on a workstation. Contact Information Technology Support Desk if screen saver does not activate on a workstation after fifteen minutes of inactivity. On a case by case basis management can approve extending the time of inactivity in accordance with the CJIS Security Policy Section 5.5.5 Session Lock and/or disabling the screen saver timeout.

- Lock the password protected screen saver whenever County Computing Equipment is left unattended.

- Shut down and power off your workstation properly at end of each workday.

- Lock the password protected screen saver at end of each workday on workstations that have been approved to remain powered on continuously.

- Secure, monitor, and protect portable Computing Resources, which are more susceptible to loss, theft, and damage.

- Report any lost or stolen equipment and/or media immediately to Information Technology Support Desk and direct supervisor. Employees of the Sheriff's Office, Elections, Library Services, and Property Appraiser should contact their local IT support instead of the Information Technology Support Desk.

- Contact the Information Technology Support Desk if further assistance is needed. Employees of the Sheriff's Office, Elections, Library Services, and Property Appraiser should contact their local IT support instead of the Information Technology Support Desk.

Information Technology Responsibilities

- Set up a password protected screen saver included with the operating system on all County-owned workstations, tablets and laptops. The screen saver will be set to come on after a maximum period of inactivity. On a case-by-case basis management can approve extending the time of inactivity in accordance with the CJIS Security Policy Section 5.5.5 Session Lock and/or disabling the screen saver timeout. Mobile devices should be set to power down the screen quickly when not in use and have a lock code.

CJIS Security Policy Resource Center
https://www.fbi.gov/services/cjis/cjis-security-policy-resource-center

Maximum period of inactivity until screensaver activated	15 minutes

- Configure County Computing Equipment to require a password on devices at system startup and when unlocking the screen saver.

- Provide equipment and software consultations, recommendations, and approvals.

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- Install County Computing Equipment with appropriate software security measures including, but not limited to antivirus software, patches, automatic software updates, passwords, and/or remote management software.

- Install, disconnect, and modify hardware and software as requested by departments/divisions through the Information Technology Support Desk.

- Provide consultation on appropriate use and data encryption.

- Provide an on-screen notification to users who access CJI data that usage of County Computing Equipment shall be by authorized individuals only and that any such usage may be monitored.

Purchasing Responsibilities

- Contact Information Technology for review and approval of Computing Resource purchase requests and to participate in solicitation projects that include Computing Resource acquisition or implementation.

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Internet

Background

The use of the Internet has become commonplace throughout the organization as a means of conducting business. While connecting to the Internet can be a tremendous asset to County government, it also heightens the exposure of County Computing Equipment to unauthorized access and tampering. Industry statistics show that computing devices connected to the Internet pose an increased likelihood of being infected with spyware programs, viruses, and other malware. Most recently, increasing numbers of ransomware attacks occur through users clicking on a compromised websites.

The malicious programs can result in data corruption or damage to computer systems. For example, in 2018 Atlanta encountered a ransomware attack resulting in more than a third of Atlanta's 424 applications becoming unavailable, close to 30% of which were "mission critical". The City Attorney's office lost the ability to use all but six of its 77 computers and 10 years' worth of documents, while the police lost their dash cam recordings, compromising pending DUI cases. Some estimates put the cost at $17 million to recover.

Procedure

Management and staff will ensure the Internet is used in a manner that minimizes security risks to the County.

Standard

Internet access will be provided to employees as part of the County Standard for County Computing Equipment unless department/division management directs Information Technology otherwise.

Guidelines

User Responsibilities

- Abide by the Volusia County Communications Policy regarding Internet use.

Volusia County Communications Policy
http://ennprod.covdnssrv.co.volusia.fl.us/communityinfo/Communications-Policy.pdf

- Ensure that any transactions involving sensitive information such as protected health information, passwords, and social security numbers are conducted with Trusted Sites via encrypted/secure connections. An Internet address that starts with HTTPS instead of HTTP indicates that the connection is encrypted. Use the lock icon on the browser to review the site validity and certificate authority.

- Use VeriSign, GoDaddy, and Symantec protected sites or a similar security offering for transactions involving sensitive information such as protected health information, passwords, and social security numbers.

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- Do not click on web links and articles that are not related to County business. While occasional personal use may be approved by management, do not use County Computing Resource to access internet web pages that may be compromised such as those displaying eye catching articles such as “Did Mark Zuckerberg Buy a $150 Million Yacht?” or that advertise products at too good to be true prices.

- Do not use instant messaging from a Volusia County Computing Resource.

- Check that the antivirus software on your County Computing Equipment is current and operational before downloading and using files or data from a trusted source. How-to instructions are available on Information Technology’s ENN home page under the training section.

- Scan all downloaded material using antivirus software prior to use. How-to instructions are available on Information Technology’s ENN home page under the training section.

- Contact the Information Technology Support Desk if further assistance is needed. Employees of the Sheriff’s Office, Elections, Library Services, and Property Appraiser should contact their local IT support instead of the Information Technology Support Desk.

Information Technology Responsibilities

- Deploy new County Computing Equipment with Internet access unless directed otherwise by department/division management.

- Maintain County-wide Internet access services.

- Install and maintain appropriate software security measures including, but not limited to antivirus software, security patches, and automatic software updates.

- Block access to restricted sites and services as identified.

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Network Equipment

Background

The advent of inexpensive and easy to install consumer networking equipment has introduced an increased potential for exposing County resources to security breaches.

Information Technology is responsible for all connections to the County Network.

Consumer wireless network hubs, wired hubs, and network diagnostic equipment are easily purchased at retail electronics stores for under a hundred dollars. These hubs and wireless local area network (WLAN) devices are intended for household use. Consumer products do not incorporate the security Standards necessary to protect the County network, Computing Resources, and data and should not be used.

Procedure

All access and access points to the County Network will be reviewed and approved by Information Technology.

All network access points (wired and wireless) and network equipment deployed or used within County facilities or connected to the County Network must be approved by Information Technology before installation.

Standards

Information Technology maintains Standards for equipment that is appropriate for use on the County Network and in County facilities.

Residential products are not appropriate for use on the County network.

Guidelines

User Responsibilities

- Contact the Information Technology Support Desk with all network requests and WLAN requirements prior to implementation.
- Install only authorized network or WLAN equipment on the County network.
- Contact Information Technology Support Desk before using any diagnostic equipment or software on the County Network.
- Report suspicious network equipment on the County Network to the Information Technology Support Desk. This would include simply seeing a consumer wireless or wired network hub in the general work area.
- Monitor the activities of vendors, contractors, employees, interns, and volunteers to ensure they comply with this Procedure.

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- Use County provided wireless access points when available to connect County Computing Resources. Under no circumstance is any CJI data to be transmitted via any wireless access point.

- Use caution when connecting County Computing Resources to wired or wireless networks outside of the County Network. For example, Internet services at airports, restaurants, and hotels are normally not as secure as the closed County Network.

- Contact the Information Technology Support Desk if further assistance is needed. Employees of the Sheriff's Office, Elections, Library Services, and Property Appraiser should contact their local IT support instead of the Information Technology Support Desk.

Information Technology Responsibilities

- Provide a reliable, secure, and documented network.

- Approve all network requests and WLAN solutions before implementation.

- Install and configure County networking and WLAN solutions.

- Investigate and resolve any identified unauthorized access points on the network.

- Remove unauthorized access points on the network and report the removal to the department/division liaison and the IT Support Desk. The IT Support Desk will report this event to the Information Technology Director and IT Security Officer.

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Passwords

Background

The confidentiality, integrity, and availability of data stored on County computer systems must be protected by passwords to ensure only authorized individuals have access. Access to County systems is restricted to only those functions required for each individual to perform their County duties.

Information Technology, and the IT industry in general, no longer recommend the use of passwords. IT recommends the use of passphrases, which are considerably longer. However, many systems are as of yet unable to support lengthy passphrases, leading to a transitionary period.

The following is an example of a password: **family123**

This particular password has an estimated cracking time of 74 milliseconds. An eye blink is 300 to 400 milliseconds, meaning that this password can be cracked faster than you can blink.

A passphrase is a series of three or four unrelated words, such as: **TransmitDrainOverseeBird**

The above passphrase has an estimated cracking time of 110 centuries. The increase in cracking time is largely due to the increased length of the password and the fact that the words are unrelated.

In those systems where it is possible to use them, IT recommends using at least three unrelated words as a passphrase. The key is to use unrelated words, which should not form a proper sentence or be grammatically correct. Password crackers already search for phrases from movies and books, as well as common phrases. Words that naturally go together and have meaning should not be used. Although the length of a passphrase gives it security, a number, capital letters, or symbol thrown in will strengthen the passphrase even more.

Procedure

User passwords are a key to the protection of County resources. Users are responsible for the protection and maintenance of their passwords.

Strong passwords will be maintained by all individuals accessing County applications or Computing Resources.

Passwords will be changed anytime the individual suspects someone has unauthorized knowledge of their password.

Standards

Passwords or passphrases shall be a minimum length and contain other attributes, as defined below. Longer and more complex passwords are recommended including the use of special characters and mixed upper and lower case letters where supported.

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Passwords will not be composed of easily guessed content or common words found in a dictionary. Do not use your name or the names of relatives, friends, or pets as part of the password. Do not use easily seen or guessed strings of letters on the keyboard like 12345678 or QWERTY00.

The nature and value of the application being accessed will determine the need, length and complexity for a password. As an example, email, human resources, finance, criminal justice, and land information applications all require passwords for use, while use of the ENN phone book does not.

It is recommended, and in some cases required, that different applications have unique passwords.

In those systems where it is possible, use passphrases instead of passwords. In those systems where passphrases are not an option, the following minimum requirements hold:

Minimum length of password	8 characters
Minimum number of digits in password	1
Upper case character	1
Lower case character	1
Special character	1
Not be the same as the User ID	
Expire within a maximum of 90 calendar days Not be identical to the previous ten (10) passwords	
Not to be displayed when entered	
Maximum limit of 5 consecutive invalid access attempts. In such case, the account will be locked for a 10 minute time period, unless unlocked by an administrator.	

Guidelines

User Responsibilities

- Passwords should not be written down. However, if deemed necessary they shall be properly secured.
- User shall not use Internet-based password managers. Password managers that store data on a County file server are acceptable.
- Ensure that access to Computing Resources can be gained in the event of an emergency. Ensure your supervisor has access to passwords that cannot be reset by system administrators such as those protecting Microsoft Excel/Word documents.
- Review and follow instructions for resetting network, GroupWise email, and other passwords. How-to instructions are available on Information Technology's ENN home page under the training section.

Do	Don't
Contact the Information Technology Support Desk immediately if a password is compromised and change the password	Use personal information like pets' and children's names, last names, birthdays, hobbies, addresses, nicknames, etc. or common words found in a dictionary as a password

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Choose a passphrase or password that is easy to remember but hard to guess	Use same password as on your home PC, home email account, or personal mobile devices and networks (e.g., smartphone, automobile WiFi)
Follow the password standard defined above	Click “Remember Password?” on your workstation if you are prompted
Be aware that certain applications do or do not differentiate upper and lower case	Use special combinations with ALT, CTRL or Option keys
Verify the identity of IT Support Staff or workstation technicians who may ask you to enter your password to troubleshoot and resolve computer problems	Post password on desk, tape to monitor, write on notes, hide under mouse pad, etc.
Examples of good passphrases, because they have no meaning: SpokenMeetStrains RevisionLobbySociety JudgesLiquidBelieve	Examples of bad passphrases, because they have meaning, or are commonly heard: WeThePeople ToBeOrNotToBe DeepDishPepperoniPizza LoudPipesSaveLives AthensTheaterDeLand
Examples of more good passphrases, because they have no meaning and contain symbols or numbers: #SubsetKingdomHours PromptRecordHinted5 CarpetAdobe@LeastBear	Use common keyboard sequences, such as qwerty00 or abc12345.
	Use phrases from movies and books, or common phrases.
	Use words that naturally go together and have meaning.
	Increment passwords by adding a sequential number on the end when changing it.
	Give, email, text, fax, or release passwords to anyone.

Information Technology Responsibilities

- Verify the identity of a User prior to providing assistance in resetting a password.
- Assist Users in resetting passwords when the User has forgotten their password or suspects their password(s) is compromised.
- Assist in adding or removing a User's Computing Resource security.

Direct Supervisor Responsibilities

- Document employee passwords when appropriate and store in a secured central storage area (e.g., metal lockbox, safe, etc.) for use in emergencies. Management should only collect passwords that cannot be reset by the system administrator. Most passwords used for centralized computing service can be reset by system administrators whereas local passwords created to protect specific documents cannot. For example, Information Technology can change a user’s email and file server passwords at management’s request, but Information Technology cannot change passwords set by users to protect specific Excel spreadsheets, Word documents or Access databases.

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- Contact the Information Technology Support Desk to add or remove a User's Computing Resource security. Employees of the Sheriff's Office, Elections, Library Services, and Property Appraiser should contact their local IT support instead of the Information Technology Support Desk.

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Reporting Incidents

Background

Computer related incidents impact the County's ability to serve the public. An incident may impact a single User, a front counter application, or an enterprise-wide application used by hundreds of County employees. Such incidents can be costly in terms of repair and lost productivity and often get reported in the media which diminishes public trust.

Examples of computer related incidents include but are not limited to computer hardware or software failure, network failure, application outage, virus/worm intrusion, network intrusion, server corruption, application failure, ransomware, or workstation failure.

Procedure

Incidents will be identified and reported promptly.

All incidents will be responded to with a priority that addresses a timely, effective, and orderly recovery with the appropriate use of resources. Status updates will be provided at regular intervals during recovery.

Standards

- County Computer related incidents will be reported to and tracked by the Information Technology Support Desk.
- Local Information Technology support within the Sheriff's Office, Elections, Library Services, and Property Appraiser should contact the Information Technology Support Desk as the situation dictates.
- All incidents will be promptly reported to minimize security exposures and improve recovery times.
- The Information Technology Support Desk will notify the IT Security Officer and activate the appropriate Information Technology resources to deal with the situation.
- The IT Security Officer or designee will oversee resolution, file the appropriate incident report, and maintain a current log (electronic and paper) detailing all security related incidents.

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Guidelines

User Responsibilities

- Identify computer related incidents or suspected incidents (i.e. applications failing to perform correctly, logon failure, network connections not functioning, unusual text or graphics displayed on the monitor, and other faulty computer services).

- Immediately report computer related incidents or suspected incidents to the Information Technology Support Desk. Do not assume someone else has called in the incident. Employees of the Sheriff's Office, Elections, Library Services, and Property Appraiser should contact their local IT support instead of the Information Technology Support Desk.

- Read and review Information Technology postings on ENN. Take appropriate actions as indicated by these postings or as instructed by IT Support Staff. Contact the Information Technology Support Desk if further assistance is needed. Employees of the Sheriff's Office, Elections, Library Services, and Property Appraiser should contact their local IT support instead of the Information Technology Support Desk.

Information Technology Responsibilities

- Monitor systems, network, and services for abnormal behavior and failures.

- Activate recovery staff when incidents occur or are reported. Record incident in appropriate log(s).

- Appropriately inform/update department/division liaisons or designees of current incident(s) and recovery progress.

- Disconnect and shut down affected equipment or network connections, if necessary, to prevent further damage or exposure.

- Research and resolve incidents through diagnostic facilities and processes. This includes working with appropriate personnel to verify data have not been corrupted, manipulated, or destroyed.

- Post a User information bulletin on ENN or contact department/division liaison when an outage is expected to exceed one-half hour (30 minutes).

- Place a follow-up ENN information bulletin or contact department/division liaison when the service is restored.

- Notify the person(s) reporting the incident via phone, email, or ENN posting as to resolution.

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Spam Email

Background

Spam email can result in huge losses of productivity. Based on 2018 Nucleus Research statistics, unfiltered spam would have cost the County over $712 for each of the 2200 email accounts, totaling 1.5 million dollars per year in lost time.

No anti-spam solution can block 100% of spam. However, the percentage that does get through is negligible. Spammers continue to adapt and find new ways to avoid detection by anti-spam solutions. The anti-spam vendors then update their solutions to block the new technique. Employees can expect to see fluctuations in the amount of spam that reaches their email accounts each month as anti-spam vendors struggle to keep pace with spammers.

In addition to blocking incoming spam, the County also checks for malware activity in incoming and outgoing emails. The virus definitions used to screen for malware are updated daily through both automatic and manual updates.

2018 Spam Statistics (per month)	
Average spam blocked by County	2,500,000 to 3,000,000
Average legitimate emails permitted through	200,000 to 250,000
Average number of incoming emails containing suspected viruses	50

Procedure

The County will use an anti-spam system to filter out as many spam messages as possible, such as “work at home” advertisements, chain letters, mortgage solicitations, profanity, fraud, phishing, and known sources of unwanted and non-business related email.

Standard

The Information Technology anti-spam system uses hardware and special software to block spam email from getting into User email accounts. The software attempts to keep the "bad" email out, while letting legitimate email in. The software uses a list of words, phrases, sender addresses, and web links to check email entering the County email system. Most legitimate email passes the check and is sent on for delivery in seconds. Occasionally, a legitimate email may be blocked due to the words or phrases contained in the message. Blocked emails will be maintained for fourteen days and will be sent forward to the intended receiver upon request. A small amount of spam is expected to get through the anti-spam solution.

This anti-spam solution protects County Users including Elections, Library Services, and Property Appraiser. The Sheriff's Office is responsible for spam management in the Sheriff’s Office email system.

Guidelines

User Responsibilities

- Do not participate in the creation, forwarding, and/or sending of spam (advertisements, solicitations, chain letters, etc.).

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- Forward email containing inappropriate solicitations or spam to the Information Technology Support Desk. This allows Information Technology to forward the spam to the anti-spam vendor, who will update the anti-spam filters. Sheriff's Office employees should contact their local IT support instead of the Information Technology Support Desk.

- Provide your County email address only to trusted web sites, mailing lists, individuals or vendors.

- Use of your county email address should be restricted to county-related business. All non-work related emails (shopping, social networking, personal finance, etc.) should be completed using a personal email account on a personal device (Hotmail, Gmail etc.) and on personal time.

- When you no longer wish to receive mailings from a valid publisher use the "unsubscribe" function, generally located at the bottom of the email.

- Contact the Information Technology Support Desk when you suspect that a legitimate piece of mail has been blocked or have other email delivery problems. Sheriff's Office employees should contact their local IT support instead of the Information Technology Support Desk.

Information Technology Responsibilities

- Provide spam filtering of the County email system.

- Forward copies of spam that were not blocked by the anti-spam solution to the vendor. The vendor will update spam filters on an ongoing basis to block spam email.

- Forward copies of spam that perpetuates a fraud or scam to the Federal Trade Commission and the anti-spam vendor.

- Assist Users that suspect a legitimate email was blocked.

- Identify and release legitimate, quarantined email upon request.

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Transferred, Separated, and Terminated Employees

Background

Department/division management approves access to County computer systems and data depending upon an employee's position and job responsibilities. When an employee changes positions or leaves County employment, the requirement to access information and computer systems also changes or ends. Similar to employees turning in keys, identification badges, and other job related tools when changing positions or leaving the County, an employee's access to computer systems and data must also be "turned in" promptly for reassignment or deletion. Dormant or out of date User accounts provide an opportunity for misuse of County computer systems while appearing to be legitimate.

Procedure

Access to Computing Resources must be restricted to authorized Users. Authorization to use Computing Resources will be limited to the User's need to fulfill job requirements. Department/division management is responsible for ensuring that security is appropriate when an employee's, contractor's, or vendor's position or responsibilities change.

Department/division management is responsible for revoking access to Computing Resources when an employee leaves County employment or a vendor or contractor is no longer doing business with the County. Department/division management is also responsible for determining if access to Computing Resources shall be suspended or revoked as a result of disciplinary action.

Accounts and passwords will be appropriately disabled on transfer or termination of employees, contractors, or vendors. Department/division management will take appropriate and timely steps to notify the security administrators (County, State, Federal, banking, etc.) of all systems the transferred, separated, or terminated employee accessed.

Standards

- Access to Computing Resources is restricted to authorized Users. The revocation of User access due to a disciplinary action including termination will take place prior to or together with the action.
- Requests for revocation of User access due to an employee's, contractor's, or vendor's separation from the County will be made prior to separation and normally effective no later than the end of the last day of employment, unless specifically extended by department/division management.
- Requests for modification of User access due to transfers or changes in responsibilities shall be made prior to the change and will normally be effective together with the action, unless specifically extended by department/division management.

Guidelines

Direct Supervisor Responsibilities

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Inform the Information Technology Support Desk of the requirement to change or revoke User access of an employee, contractor, or vendor prior to the action. If the situation requires special handling, work with the IT Security Officer to implement the change. Employees of the Sheriff's Office, Elections, Library Services, and Property Appraiser should contact their local IT support instead of the Information Technology Support Desk.

Information Technology Responsibilities

Ensure that User privileges are revoked or revised when informed of employee, contractor, or vendor change of responsibilities, transfer, separation, or termination.

IT Security Officer Responsibilities

Work with department/division management or designee when requested in order to coordinate changes in User privileges of an employee, contractor, or vendor requiring special handling.

Human Resources Division Responsibilities

Provide the Information Technology Support Desk with a list of employees separated or terminated on a bi-weekly basis.

Attachment: 05._Exhibit_A.3_-_County_Computing_Security_Proced (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Vendor Access to Computing Resources

Background

County computers, software, applications, and data used to provide County services may require support, installation, or modification by outside vendors. Some departmental systems may be wholly or partially supported by outside vendors. These vendors will need onsite and/or remote access to the systems to provide this support. Information Technology will provide guidance and enforce Standards for providing access to outside vendors in a secure manner. The term "vendor" is meant broadly and includes prime contractors and their subcontractors.

Procedure

Vendors providing support or services to the County for Computing Resources or solutions must adhere to the County *Computing Security Procedures*. Managers within the responsible department/division will ensure that vendors are required to read, understand, sign, and follow the County *Computing Security Procedures* as if they were County employees. Prime contractors are responsible and accountable for ensuring their subcontractors fully adhere to the County *Computing Security Procedures*.

Vendor access to the County network and Computing Resources will be implemented in a controlled, secure, and monitored environment.

Standards

The County maintains a virtual private network (VPN) solution to provide remote access by vendors and employees. The VPN solution provides for authentication of the vendors, encryption of communication, and authorization of selected Computing Resources by logon. All connectivity will be arranged through a County contact.

County intervention will be required for a vendor to gain access to the network or Computing Resources (e.g., virtual escort, enabling a vendor VPN logon). The vendor will identify the length of time that access is needed.

Vendors will promptly notify the County that temporary VPN access is no longer needed when they complete services. Information Technology will disable the VPN account until it is needed again. Vendor VPN accounts will only be enabled for pre-determined periods of time authorized by the County.

Guidelines

Department/Division Responsibilities

- Contact the Information Technology Support Desk to request a vendor account for accessing or revoking access to County Computing Resources. Employees of the Sheriff's Office, Elections, Library Services, and Property Appraiser should contact their local IT support instead of the Information Technology Support Desk.

Attachment: 05._Exhibit_A.3_-_County_Computing_Security_Proced (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

- Educate vendors on the County *Computing Security Procedures* prior to vendor accessing computing resources. Obtain the signature of the vendor's authorized representative on the acknowledgement form from the County *Computing Security Procedures* indicating knowledge of and compliance with Procedures.

- Ensure vendors comply with practices and standards as specified in maintenance contracts and the County's *Computing Security Procedures*.

Information Technology Responsibilities

- Provide County portion of remote access solution for vendors.

- Enable and disable vendor remote access as required.

- Provide support for educating vendors in access practices and requirements as specified in maintenance contracts and the County's *Computing Security Procedures*.

- Remove vendor account upon notification from department/division liaison.

- Document and maintain an approved vendor access list.

- Ensure that vendors use County Approved Encryption Methods when accessing or storing County data that is required to be protected to meet regulatory compliance.

Vendor Responsibilities

- Use County Approved Encryption Methods when accessing or storing County data that is required to be protected to meet regulatory compliance.

- Provide notification to the County when employees associated with County projects and services leave employment or are reassigned.

- Limit access to County data to only those with a legitimate need to know.

- Comply with practices and standards as specified in maintenance contracts and the County's *Computing Security Procedures*.

Attachment: 05._Exhibit_A.3_-_County_Computing_Security_Proced (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Appendix A: Definition of Terms

Approved Encryption Methods

For any protected information encrypt data in transit and at rest using the following technology:

Data in Transit
Any FIPS 140-2 certified method and at least 128 bit strength.

Data at Rest
The same as above or a FIPS 197 certified method such as BitLocker for Windows 10 and at least 256 bit strength.

The passphrase used to unlock the cipher for any encrypted file shall meet the following requirements:

i. Be at least 10 characters.
ii. Not be a dictionary word.
iii. Include at least one (1) upper case letter, one (1) lower case letter, one (1) number, and one (1) special character.
iv. Be changed when previously authorized personnel no longer require access.

CJI

Criminal Justice Information is the abstract term used to refer to all of the FBI CJIS provided data necessary for law enforcement agencies to perform their mission and enforce the laws, including but not limited to: biometric, identity history, person, organization, property (when accompanied by any personally identifiable information), and case/incident history data. In addition, CJI refers to the FBI CJIS-provided data necessary for civil agencies to perform their mission; including, but not limited to data used to make hiring decisions. The following data types are exempt from the protection levels required for CJI: transaction control type numbers (e.g. ORI, NIC, FNU, etc.) when not accompanied by information that reveals CJI or PII.

CJI Authorized Personnel

An individual, or group of individuals including contracted services, who have been appropriately vetted through a national fingerprint-based record check and have been granted access to CJI.

Computing Equipment

Includes but is not limited to workstations, laptops, mobile devices, and servers. Loosely defined as a general-purpose machine that processes data according to a set of instructions that are stored internally either temporarily or permanently.

Computing Resources

Computing Resources include, but are not limited to, all software, hardware, workstations, laptops, tablets, servers, applications, data, media, smartphones, and networks (LAN, WAN, WLAN) that belong to Volusia County, or are attached to the County network.

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County

Volusia County

County Network

All voice, data, and video networks connected to devices directly configured or supported by Information Technology staff.

ENN

Employee News Network. The County's intranet web site.

ePHI

Electronic protected health information refers to any protected health information (PHI) that is covered under Health Insurance Portability and Accountability Act of 1996 (HIPAA) security regulations and is produced, saved, transferred or received in an electronic form.

Guideline

Guidelines are steps taken in compliance with the Procedures, which include areas of responsibility.

HIPAA

The Health Insurance Portability and Accountability Act (HIPAA) of 1996 is United States legislation that provides data privacy and security provisions for safeguarding medical information.

HITECH Act

The Health Information Technology for Economic and Clinical Health (HITECH) Act, enacted as part of the American Recovery and Reinvestment Act of 2009, was signed into law on February 17, 2009, to promote the adoption and meaningful use of health information technology. Subtitle D of the HITECH Act addresses the privacy and security concerns associated with the electronic transmission of health information, in part, through several provisions that strengthen the civil and criminal enforcement of the HIPAA rules.

Information Technology

The Information Technology Division (ITD) of Business Services. There are some instances where another division or individual is responsible instead of ITD. Elections, Library Services, Property Appraiser, and Sheriff's Office have local department/division support staff for workstations and servers. These areas should substitute local department/division support for ITD, when workstations or servers are involved. ITD works in coordination with these local resources as the situation dictates.

LAN

Local Area Network. A computer network that spans a relatively small area. Most LANs are confined to a single building or group of buildings.

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PII

Personally identifiable information. This is any data that could potentially identify a specific individual.

Procedure

A Procedure is a guiding principle established by senior management that an organization or project adopts to influence and determine decisions. A Procedure demonstrates commitment from senior management to certain behaviors. It states management's commitment to a program, describing a high-level philosophy and topical coverage. Information security Procedures are brief, technology and solution-independent documents.

Protected Health Information (PHI)

Protected Health Information is defined in 45 CFR 160.103, where "CFR" means "Code of Federal Regulations", and, as defined, is referenced in Section 13400 of Subtitle D ("Privacy") of the HITECH Act. Protected health information means individually identifiable health information that is a subset of health information, including demographic information collected from an individual, and: (1) is created or received by a health care provider, health plan, employer, or health care clearinghouse; and, (2) relates to the past, present, or future physical or mental health or condition of an individual; the provision of health care to an individual; or the past, present, or future payment for the provision of health care to an individual; and (i) that identifies the individual; or (ii) with respect to which there is a reasonable basis to believe the information can be used to identify the individual.

Standard

Standard represents a specific approach, solution, methodology, product, or protocol that must be adhered to for establishing uniformity. Standards are required to maintain consistency and to avoid variance where inappropriate. Standards may be geared toward the User or the technician. Information Technology Standards evolve in step with the progression of technology.

Trusted Sites

Trusted Sites are websites that you know and trust not to damage your computer or harvest information such as passwords and credit card numbers. Examples include Staples (https://eway.com) and Amazon (https://amazon.com).

User

User refers to anyone using County Computing Resources including direct employees of the County as well as consultants, vendors, contractors, and others performing on the behalf of the County.

WAN

A wide area network is a telecommunications network, usually used for connecting computers, that spans a wide geographical area. Unlike LANs, WANs typically do not link individual computers, but rather are used to link LANs.

Attachment: 05._Exhibit_A.3_-_County_Computing_Security_Proced (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

WLAN

A wireless local area network is one in which a mobile user can connect to a local area network (LAN) through a wireless (radio) connection.

Attachment: 05._Exhibit_A.3_-_County_Computing_Security_Proced (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Appendix B: Publishing Procedures

1. Update ENN intranet home page.
2. Update IT ENN home page.
    a. Also publish supporting documents such as Smartphone_Reset_Guide.pdf, Anti_Virus_Guidelines.pdf, Jump_Drive_Procurement_Guidelines.pdf and others to Resources/Standards on the IT ENN page.
3. Send copy to Purchasing. This is used by vendors who need access to county systems.
4. Send copy to Human Resources. This is used during new employee orientation.
5. Reset the first-time login popup in Active Directory. This causes users to re-validate that they have read and accepted the document.

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Computing Security Procedures Acknowledgement

This form is used to acknowledge receipt of, and compliance with the County *Computing Security Procedures*. Management shall have employees, contractors, and vendors read the Procedures and sign this acknowledgement when first employed and annually thereafter.

Complete the following steps:

1. Read *Computing Security Procedures*. Fill in requested information in the spaces provided below including signature and date.
2. Retain a copy of this page for your records.
3. Return this page to your direct supervisor for inclusion in the department/division's personnel records.
4. Vendors and contractors return this page to the County project manager for inclusion in the County project file.

Signature

By signing below, I agree to the following terms:

i. I have been provided access to and read a copy of the *Computing Security Procedures* and understand the same;
ii. I understand that any Computing Resource provided to me by the County or accessed by me may contain confidential information about Volusia County and its citizens or its vendors, and that this is and remains the property of the County at all times;
iii. I agree that I shall not copy, duplicate or distribute any software provided to me by Volusia County without appropriate authorization;
iv. I agree that I shall not copy, duplicate or disclose, or allow anyone else to copy or duplicate, sensitive information except as required as a part of my job here at Volusia County;
v. I agree that, if I leave Volusia County for any reason, I shall immediately return to the County the original and all copies of any and all data, software, computer materials, or computer equipment that I may have received from the County that is either in my possession or otherwise directly or indirectly under my control.
vi. I understand that it is a condition of employment to sign and abide by this document.
vii. I understand and agree that I shall not install any unauthorized software without Information Technology authorization.

Employee Signature	
Employee Name	
Employee ID	
Date	
Department	
Division	

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Exhibit A.4 **19-P-153JRD**

County of Volusia Technical Infrastructure Standards
Last Update – February 8, 2019

The Respondent warrants that the proposed solution is technically compatible with the County's technical infrastructure as listed below and is in accordance with the County's Computing Security Procedure.

Network Services	
LAN	Ethernet 100/1000 Mbps 1/10G Ethernet backbone Twisted Pair, Category 5e, 6, 6A Single and Multi-mode Fiber 802.11b/g/n/ac WPA2
WAN	Metro Ethernet (100 Mbps Circuits) T1 Leased lines
Network Interface Cards	10/100/1000
Remote Access	AT&T DSL, Spectrum Cable Modem (Cisco Client VPN)
Protocol	TCP/IP
Web Application Services	MFN (My Florida Net Internet Access) (90 Mbps) DMZ
Internet Access	MFN (My Florida Net Internet Access) (90 Mbps) Spectrum (Back up Internet) (200 Mbps) Spectrum (remote location) (10 Mbps)
Network Security/Monitoring	
Firewall	Cisco ASA 5500 Series Adaptive Security Appliances (5505, 5510, 5520), Cisco Firepower Series Appliances
Routers and Switches	LAN - Cisco 2960X, 3560, 3750, 3850, 6509, 4500X, Nexus 5500, Nexus 9300 series switches WAN - Cisco 1900, 2600, 2800, 2900, AS1 series routers
Network Management	Cisco Prime Infrastructure SolarWinds Orion Network Performance Monitor SolarWinds Engineers Toolkit WhatsUp Gold Premium Edition
Monitoring (Virus & Intrusion)	Symantec Endpoint Anti-Virus Cisco Intrusion Prevention System (IPS)
Telephone Service	
Telephone System	Alcatel-Lucent Omni PCX Audio Codes analog gateways (remote locations)
Phones	Alcatel-Lucent 4068, 4038

Attachment: 06._Exhibit_A.4_-_Technical_Infrastructure_Standar (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Transmission Facilities	PRI leased circuits Centrex - State-managed AT&T-based ISDN switched services Public switched tariffed business lines
Voice Mail	AVST
Long Distance Calling	State of Florida SUNCOM network AT&T on tariffed business lines
Cellular Telephone Service	AT&T Sprint Verizon
Office Systems	
E-mail	Novell GroupWise 2014
Office Suite	Microsoft Office 2007, 2013 & 2016 Professional
Browser	Microsoft Internet Explorer – IE9 through IE11, Edge & Firefox
Anti-virus	Symantec Endpoint Protection 14
File Services	Microsoft Windows Server 2012R2
Anti-SPAM	Axway Mailgate E-mail and messaging management system (MMS)
Application Systems	
Criminal Justice Information System	
- Jail Management System	Unisys, Inc. Jail Management System® Oracle
- Mugshot System	Dynamic Imaging Systems, Inc. PictureLink® Oracle
- Inmate Banking	Aramark Correctional Services, LLC Core Banking SQL Server GTL Touchpay
- Inmate Booking Kiosk	Microsoft. BizTalk®/MSMQ® SQL/Oracle
- Message Hub	Information Builders, Inc. WebFOCUS® and iWAY Data Migrator® and iWAY Service Manager® Oracle
- Enterprise Repository Reporting System (CJIS Data Portal and Dashboards)	Unisys, Inc. Flag Manager Fingerprint Manager FDOC Manager
- CJIS Web Applications	Oracle

Attachment: 06._Exhibit_A.4_-_Technical_Infrastructure_Standar (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Electronic Document Management System	Hyland Software, Inc MS SQL OnBase® v15 by Hyland Software
Financial Management System	CGI TECHNOLOGIES AND SOLUTIONS INC. AMS Advantage Financial Management® v3.9.01 Oracle
Fire Services Reporting & Asset Management System	ACS Government Solutions Firehouse Enterprise® MS SQL
Geographic Information System	Esri ArcGIS® Suite ArcGIS Desktop v10.6.1; ArcGIS Online MS SQL 2012 (SQL/SDE) ArcGIS Server v10.6.1
Growth & Resource Management System	CSDC (AMANDA)® v6.1.5.1 current, migrating to AMANDA v7.2.10 Oracle 11G
Human Resource System	CGI TECHNOLOGIES AND SOLUTIONS INC. AMS Advantage Human Resource Management® v3.9.01 Oracle
Medical Examiner Forensic System	SQL Server database, with Microsoft Access front end. Supported in-house
Occupational Health Management	PureSafety Corporate Occupational Health Manager ®
Payment Express Credit Card Payment Gateway	Grant Street Group Payment Express® Vendor hosted
Performance Budgeting System	CGI TECHNOLOGIES AND SOLUTIONS INC. AMS Advantage Performance Budgeting® v3.9.01 Oracle
Property Appraisal System	Tyler iasWorld CAMA system Oracle 12c
Public Works Maintenance Management System	Lucity, Inc.(formerly GBA Master Series) Public Works Maintenance Management System ® v2014r2 MS SQL server 2012 Acquired by Central Square www.CentralSquare.com
Risk Management System	Marsh USA, Inc. CS STARS® Vendor hosted
Roof Asset Management System	Propeller Head Software RoofManager® MS SQL
Tax Collection & Cashiering System Business Tax Tourist Development Tax	Grant Street Group TaxSys® Vendor hosted

Attachment: 06._Exhibit_A.4_-_Technical_Infrastructure_Standar (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Time & Attendance System	Kronos, Inc. Kronos Workforce Central® v7.0 Microsoft SQL Server 2012
Value Adjustment Board System	Pioneer Technology Group, LLC AXIA® MS SQL
Water Utility Billing	Data West Corporation BillMaster® MS SQL
Data Bases Used	
	Oracle 11.2, Oracle 12c Microsoft SQL Server 2008/2010/2014
Middleware Used (Application Dependent)	
	Cold Fusion Std 11 Tomcat IIS Apache IBM HTTP Server IBM WebSphere
Reporting Tools (Application Dependent)	
	Crystal Reports MS SQL Server Reporting Services IBI WebFOCUS Developer Studio & InfoAssist Business Objects infoAdvantage
Development Tools (Application Dependent)	
	J2ee, JSP .Net XML TOAD Oracle SQL Developer
Personal Computers	
Desktop (PCs are currently refreshed on a four (4) year cycle).	**Current installation standard:** HP EliteDesk 800 G2 Small Form Factor Intel Core i5-6500 4 Core CPU (3.2 GHz) Windows 7 & 10 Professional 64-bit 22" LCD widescreen flat panels display 8GB RAM, 128GB SATA 2.5 SSD 9.5 mm Slim Desktop SuperMulti DVDRW Optical Disk Drive 4 year Next Business Day On-site warranty with Disk Retention. **Minimum current installed base:** HP Core i5-3470 Processor- 3.2 GHz, Windows 7 Professional 32-bit 4 GB Ram, 250 GB HD, 22" LCD Flat Panel display

Attachment: 06._Exhibit_A.4_-_Technical_Infrastructure_Standar (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Laptop (Laptops are currently refreshed on a four (4) year cycle).	**Current installation standard:** HP 650 G2, Intel I5 processor). Windows 7 32/64-bit & 10 Professional 64-bit 15.0" XGA TFT active matrix screens 8GB RAM, 256 GB M2 SATA-3 SSD **Minimum current installed base:** HP 6570 i5 Windows 7 Professional 32-bit 4 GB Ram, 320 GB HD 15" Display
Current Physical Data Center Deployed Servers (Minimum Specifications)	
Microsoft Windows Server 2008 R2	Blade: Cisco UCS B-series Dual CPU (4-12 core) Rack Mounted: Dell R720 dual CPU (4-8 core) All: 128GB – 384GB memory (8 - 12) 10/100/1000/10G NIC ports Redundant Power/Fans/RAID/Hot disks
Current Virtual Data Center Deployed Servers	
VMware vSphere 6.5 Supports: Win2003, Win2008, Win2012, Linux	Blade: Cisco UCS B-series Dual CPU (4-12 core) Rack Mounted: Dell R720 dual CPU (4-8 core) All: 128GB – 384GB memory (8 - 12) 10/100/1000/10G NIC ports Redundant Power/Fans/RAID/Hot disks
Storage Area Network SAN	
	Dell EqualLogics – PS - series iSCSI Dell Compellent SC8000 iSCSI
Backup & Recovery Tools	
	Quest NetVault Qualstar XLS 832700 (LTO4 tape library) Dell DR4100 & DR6300 disk backup libraries Quest vRanger vReplicator Microsoft Data Protection Manager Micro Focus-Novel GroupWise Reload

Attachment: 06._Exhibit_A.4_-_Technical_Infrastructure_Standar (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

EXHIBIT C.1 **19-P-153JRD**
INSURANCE REQUIREMENTS
EQUIPMENT/PRODUCTS & MAINTENANCE

Required Types of Insurance

The Contractor shall purchase and maintain at its own expense, during the term of the Agreement, the types and amounts of insurance with limits no less than those shown below, in the form and from companies satisfactory to the County are detailed in *Figure 1* below. *Figure 1* is a listing and general summary of insurance policies required and is not intended to be comprehensive as to the requirements of each specific policy. Contractors shall review the additional requirements in this Exhibit C.1 and ensure that the insurance policies comply with the specific terms and conditions therein.

Figure 1:

TYPE OF INSURANCE **Radio Equipment/Products & Maintenance**		
WORKERS COMPENSATION ☒ Waiver of Subrogation in favor of County	Florida Statutory Coverage	
COMMERCIAL GENERAL LIABILITY ☒ Occurrence Basis ☒ Blanket Contractual Liability ☒ Contractor, its subcontractors, & independent contractors shall name County as Additional Insured for premises/operations and products/completed operations. ☒ Policy endorsed to be primary to and non-contributory with any insurance or self-insurance maintained by or available to County. ☒ Waiver of Subrogation in favor of County ☒ Independent Contractors ☒ XCU ☒ Project Specific Limits	EACH OCCURRENCE	$ 1,000,000
	GENERAL AGGREGATE	$ 2,000,000
	Premises-Operations	$ 1,000,000
	Products & Completed Ops	$ 1,000,000
	Personal & Adv Inj.	$ 1,000,000
	Fire Damage	$
		$
AUTO LIABILITY ☒ Any Auto ☒ Contractor, its subcontractors, & independent contractors shall name County as additional insured ☒ Waiver of Subrogation in favor of County ☒ Policy endorsed to be primary to and non-contributory with any insurance or self-insurance maintained by or available to County .	Combined Single Limit	$ 1,000,000
	Bodily Injury (Per person)	$
	Bodily Injury (Per accident)	$
	Property Damage (Per Accident)	$

Attachment: 09._Exhibit_C.1,_Insurance_Requirements_-_Equipmen (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

EXHIBIT C.1 **19-P-153JRD**
INSURANCE REQUIREMENTS
EQUIPMENT/PRODUCTS & MAINTENANCE

EXCESS LIABILITY ☒ Umbrella Form (Follow Form Basis Auto & CGL) ☒ Contractor, its subcontractors, & independent contractors shall name County ☒ Waiver of Subrogation in favor of County ☒ Policy endorsed to be primary to and non-contributory with any insurance or self-insurance maintained by or available to County ☒ Project Specific Limits	$ 1,000,000 per Occurrence/Aggregate
Note: If County cannot be added as additional insured, then policy shall be endorsed to provide additional insured status if required on the primary policy.	
PROFESSIONAL LIABILITY ☒ Computer Software and Services/Technology Errors & Omissions	$ 2,000,000 Incident $ 4,000,000 Aggregate
INSTALLATION FLOATER ☒ County as Additional Named Insured and Loss Payee ☒ All-Risk ☒ Wind, Hail, Named Storm ☒ Flood if in 100 yr Flood Plane ☒ Waiver of Subrogation in favor of County	Value of equipment being installed.
CANCELLATION: Thirty (30) days written notice of cancellation is required to the Certificate Holder:	
Certificate Holder: County of Volusia Purchasing & Contracts Division 123 W. Indiana Avenue, Room 302 DeLand, FL 32720 ATTN: John Duckworth	Risk Management Division _____

A. For the purposes of indemnification of the County or an endorsement or insurance coverage under this Agreement/Contract under which the County is a "named insured", "additional named insured", or "additional insured", the term "County" includes the County of Volusia (a body corporate and politic and a subdivision of the State of Florida), including its districts, authorities, separate units of government established by law, ordinance or resolution, partners, elected and non-elected officials, employees, agents, volunteers, and any party with whom the County has agreed by contract to provide additional insured status.

B. Subcontractors and Independent Contractors. All subcontractors & independent contractors utilized by Contractor to provide services to County and its employees under this Agreement/Contract shall be required to maintain all insurance policies

Attachment: 09_Exhibit_C.1,_Insurance_Requirements_-_Equipmen (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

with the same terms, conditions, and requirements required of the Contractor in Figure 1 above and described below in this Exhibit.

C. Claims Made Basis Insurance Policies. All insurance policies written on a Claims Made Form shall maintain a retroactive date prior to or equal to the effective date of the Agreement. The Contractor shall purchase a Supplemental Extended Reporting Period ("SERP") with a minimum reporting period of not less than three (3) years in the event the policy is canceled, not renewed, switched to occurrence form, or any other event which requires the purchase of a SERP to cover a gap in insurance for claims which may arise under or related to the Agreement. The Contractor's purchase of the SERP shall not relieve the Contractor of the obligation to provide replacement coverage. In addition, the Contractor shall require the carrier immediately inform the Contractor, the County Risk Manager, and the Purchasing and Contracts Division of any contractual obligations that may alter its professional liability coverage under the Agreement.

D. Risk Retention Groups and Pools. Contractor shall not obtain an insurance policy required under this Agreement from a Risk Retention Group or Pool.

E. Minimum Required Policies and Limits. Minimum underlying policies, coverages, and limits shall include all policies listed in *Figure 1*.

F. Additional Insured, Policies, Coverages, Limits, Primary and Non-Contributory Basis. Under all insurance policies where the County is required to be an additional insured, the coverage and limits provided to the County under Contractor's insurance policies shall be that listed in *Figure 1* or the Contractor's actual limits, whichever is higher. All coverage provided to the County as an additional insured by said policies shall be primary and shall not be additional to or contributing with any other insurance carried by or for the benefit of the County with any other insurance available to the County. The Contractor shall utilize ISO Form CG 20 38 04 13 and CG 20 37 04 13 or equivalent to provide additional insured status to the County and any party to whom the County is contractually bound to provide additional insured status under a commercial general liability policy.

G. If the services provided require the disposal of any hazardous or non-hazardous materials off the job site, the disposal site operator must furnish a certificate of insurance for Pollution Legal Liability with coverage for bodily injury and property damage for losses that arise from the facility that is accepting the waste under the Agreement.

H. Workers' Compensation. Workers' Compensation insurance is required for all employees of the Contractor, employed or hired to perform or provide work or services under the Agreement or that is in any way connected with work or services performed under the Agreement, without exclusion for any class of employee, and shall comply fully with the Florida Workers' Compensation Law (Chapter 440, Florida Statutes, Workers' Compensation Insurance) and include Employers' Liability Insurance with limits no less than the statutory. Policy shall include a waiver of subrogation in favor of the County. If Contractor is using a "leased employee" or an employee obtained through a professional employer organization ("PEO"), Contractor is required to have such employees covered by worker's compensation insurance in accordance with Florida Worker's Compensation law

Attachment: 09_Exhibit_C.1,_Insurance_Requirements_-_Equipmen (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

and the insurance carrier of the PEO execute a waiver of subrogation in favor of the County, its employees and insurers.

i. Contractor and its Subcontractors, or any associated or subsidiary company doing work on County property or under the Agreement must be named in the Workers' Compensation coverage or provide proof of their own Workers' Compensation coverage, without exclusion of any class of employee, and with a minimum of the statutory limits per occurrence for Employer's liability coverage. Further, if the Contractor's Subcontractors fail to obtain Workers' Compensation insurance and a claim is made against the County by the uncovered employee of said Subcontractor of the Contractor, the Contractor shall indemnify, defend, and hold harmless the County from all claims for all costs including attorney's fees and costs arising under said employee(s) Workers' Compensation insurance claim(s).

I. Commercial General Liability Insurance. The Contractor shall acquire and maintain Commercial General Liability insurance, with limits of not less than the amounts shown above. Contractor shall not obtain an insurance policy wherein the policy limits are reduced by defense and claim expenses. Such insurance shall be issued on an occurrence basis and include coverage for the Contractor's operations, independent Contractors, Subcontractors and "broad form" property damage coverages protecting itself, its employees, agents, Contractors or subsidiaries, and their employees or agents for claims for damages caused by bodily injury, property damage, or personal or advertising injury, and products liability/completed operations including what is commonly known as groups A, B, and C. Such policies shall include coverage for claims by any person as a result of actions directly or indirectly related to the employment of such person or entity by the Contractor or by any of its Subcontractors arising from work or services performed under the Agreement. Public liability coverage shall include either blanket contractual insurance or a designated contract contractual liability coverage endorsement, indicating expressly the Contractor's Agreement to indemnify, defend and hold harmless the County as provided in the Agreement. The commercial general liability policy shall provide coverage to County when it is required to be named as an additional insured either by endorsement or pursuant to a blanket additional insured endorsement, for those sources of liability which would be covered by the latest edition of the standard Commercial General Liability Coverage Form (ISO Form CG 00 01), as filed for use in the State of Florida by the Insurance Services Office, without the attachment of any endorsements excluding or limiting coverage for Bodily Injury, Property Damage, Products/Completed Operations, Independent Contractors, Property of County in Contractor's Care, Custody or Control or Property of County on which contracted operations are being performed, Explosion, Collapse or Underground hazards (XCU Coverage, Contractual Liability or Separation of Insureds. When County is added as additional insured by endorsement, ISO Endorsements CG 20 38 and CG 20 37 or their equivalent shall be used and shall provide such additional insured status that is at least as broad as ISO form CG 20 10 11 85. If County has agreed by separate contract to require Contractor to name another party as an additional insured, Contractor shall add said party as an additional insured to the commercial general liability policy by ISO Endorsement CG 20 38. Contractor shall require its subcontractors performing work under this Agreement to add the County

Attachment: 09_Exhibit_C.1,_Insurance_Requirements_-_Equipmen (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

and any other party that the County has agreed by separate contract to require Contractor to name as an additional insured to their Commercial General Liability policy as an additional insured by ISO Endorsement CG 20 38. All commercial general liability policies shall provide a waiver of subrogation in favor of the County and any other party required by this Agreement to be named as an additional insured.

J. Excess/Umbrella Liability. Umbrella or Excess Liability policies may be used to obtain the total limits of liability required to meet the required limits of coverage stated above. These policies shall be written on a follow form basis subject to the same terms, definitions, exclusions and conditions as the primary policies. These policies shall contain a dropdown coverage provision as well as a duty to defend. Evidence of such coverage should clearly demonstrate the underlying coverages/policies that are included.

The Contractor shall obtain an excess liability policy in addition to the scheduled underlying policies (commercial general liability, business auto liability, professional, and employers' liability) with a limit of no less than the amount shown above. This insurance shall name the County as an additional insured and include either blanket contractual or a designated contract contractual coverage endorsement, indicating expressly the Contractor's agreement to hold the County harmless.

K. Motor Vehicle Liability. The Contractor shall secure and maintain during the term of the Agreement motor vehicle coverage in the split limit amounts of no less than the amounts shown in *Figure 1* per person, per occurrence for bodily injury and for property damage or a combined single limit of the amount shown above **with "Any Auto", Coverage Symbol 1, providing coverage for all autos operated regardless of ownership, and** protecting itself, its employees, agents or lessees, or subsidiaries and their employees or agents against claims arising from the ownership, maintenance, or use of a motor vehicle. The County shall be an additional insured under this policy when required in *Figure 1.*

L. Professional Liability. The Contractor shall ensure that it secures and maintains, during the term of the Agreement, Professional Liability insurance with limits of no less than the amount shown above. Such policy shall cover all the Contractor's or its Subcontractor's professional liabilities whether occasioned by the Contractor or its Subcontractors, or its agents or employees [and broad enough to include errors and omissions specific to Contractor's professional liability for direct and contingent design errors and Architect's/Engineers professional liability with no exclusions for design-build work]. The County shall be an additional insured under this policy when required in *Figure 1.*

If the Contractor fails to secure and maintain the professional liability insurance coverage required herein, the Contractor shall be liable to the County and agrees to indemnify, defend, and hold harmless the County against all claims, actions, losses or damages that would have been covered by such insurance.

M. Installation Floater. Contractor shall provide and maintain during the term of this Agreement an installation floater to cover damage to or destruction to renovations, repairs or equipment being installed and/or otherwise being handled or stored.

Attachment: 09_Exhibit_C.1,_Insurance_Requirements_-_Equipmen (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Contractor shall purchase Installation Floater on a "Special Form" (All-Risk) policy, and shall also include coverage for wind, hail, and named storm. For projects within a 100 year floodplain, Flood insurance shall be purchased. Installation Floater shall be for the full replacement cost of the Project, including periodic increases or decreases in values resulting from change orders. Coverage shall not cease until Final Acceptance. Policy shall be written on an All-Risk basis. Policy shall also include wind, hail and named storm coverage, off-site storage, and transit. The minimum protection afforded under said installation floater shall be the full replacement cost of the construction of the Project. County shall be a Loss Payee under the policy. Contractor shall provide County with an Accord Evidence of Property Form evidencing the maintenance of the policy and providing that the insurer shall notify the County thirty days prior to the cancelation of the policy.

N. Primary and Excess Coverage. Any insurance required may be provided by primary and excess insurance policies.

1. Insurance Requirements

A. General Insurance Requirements:

i. All insurance policies shall be issued by insurers licensed and/or duly authorized under Florida Law to do business in the State of Florida and all insuring companies are required to have a minimum rating of A- and a Financial category size of VIII or greater in the "Best Key Rating Guide" published by A.M. Best & Company, Inc.

ii. Approval by County of any policy of insurance shall not relieve Contractor from its responsibility to maintain the insurance coverage required herein for the performance of work or services by the Contractor or its Subcontractors for the entire term of the Agreement and for such longer periods of time as may be required under other clauses of the Agreement.

iii. Waiver of Subrogation. The Contractor hereby waives all rights against the County and its Subcontractors for damages by reason of any claim, demand, suit or settlement (including workers' compensation) for any claim for injuries or illness of anyone, or perils arising out of the Agreement. The Contractor shall require similar waivers from all its Subcontractors. Contractor's insurance policies shall include a waiver of subrogation in favor of the County. This provision applies to all policies of insurance required under the Agreement (including Workers' Compensation, and general liability).

iv. County Not Liable for Paying Deductibles. For all insurance required by Contractor, the County shall not be responsible or liable for paying deductibles for any claim arising out of or related to the Contractor's business or any Subcontractor performing work or services on behalf of the Contractor or for the Contractor's benefit under the Agreement.

v. Cancellation Notices. During the term of the Agreement, Contractor shall be responsible for promptly advising and providing the County Risk Manager and the Purchasing and Contracts divisions with copies of notices

Attachment: 09_Exhibit_C.1,_Insurance_Requirements_-_Equipmen (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

of cancellation or any other changes in the terms and conditions of the original insurance policies approved by the County under the Agreement within two (2) business days of receipt of such notice or change.

vi. Deductibles. Contractors that maintain and administer a self-insured retention or a large deductible program exceeding the insurance requirements listed in this solicitation using a formal program to fund either program may submit an exception in accordance with Section 3.9 of RFP #19-P-153JRD, Questions, Exceptions, and Addenda, to be considered for this solicitation.

The request must include a summary of the program's design, funding method, and the program's supporting financial information. If additional information is necessary, the County will request more specific information, which must be provided by the Contractor. The County Risk Manager will review the information submitted and determine whether the program is acceptable to the County.

Contractors with no formal risk management program in place to manage and fund deductibles or self-insured retentions may not be considered. Subject to County approval, Contractor may obtain a letter of credit in the amount equivalent to the deductible, which shall remain in effect during the term of the Agreement at no additional cost to the County.

vii. Contractor's obligations or services shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity or insurance defense of additional or named insureds which would otherwise exhaust or be unavailable as to a party or person described in this Agreement.

2. Proof of Insurance

A. The Contractor shall be required to furnish evidence of all required insurance in the form of certificates of insurance, which shall clearly outline all hazards covered as itemized herein, the amounts of insurance applicable to each hazard and the expiration dates.

B. The Contractor shall furnish proof of insurance acceptable to the County prior to or at the time of execution of the Agreement and the Contractor shall not commence work or provide any service until the Contractor has obtained all the insurance required under the Agreement and such insurance has been filed with and approved by the County. Upon request from the County, the Contractor shall furnish copies of all requested policies and any changes or amendments thereto, immediately, to the County, the County Risk Manager, and Purchasing and Contracts Divisions, prior to the commencement of any contractual obligations. The Agreement may be terminated by the County, without penalty or expense to County, if at any time during the term of the Agreement proof of any insurance required hereunder is not provided to the County.

C. All certificates of insurance shall clearly indicate that the Contractor has obtained insurance of the type, amount and classification required by this Section. No work or services by Contractor or its Subcontractors shall be commenced until County

Attachment: 09_Exhibit_C.1,_Insurance_Requirements_-_Equipmen (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

has approved these policies or certificates of insurance. Further, the Contractor agrees that the County shall make no payments pursuant to the terms of the Agreement until all required proof or evidence of insurance has been provided to the County. The Agreement may be terminated by the County, without penalty or expense, if proof of any insurance required hereunder is not provided to the County.

D. The Contractor shall file replacement certificates with the County at the time of expiration or termination of the required insurance occurring during the term of the Agreement. In the event such insurance lapses, the County expressly reserves the right to renew the insurance policies at the Contractor's expense or terminate the Agreement but County has no obligation to renew any policies.

3. The provisions of this Exhibit C.1, shall survive the cancellation or termination of the Agreement.

Attachment: 09._Exhibit_C.1,_Insurance_Requirements_-_Equipmen (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Volusia County
FLORIDA

BUDGET AND ADMINISTRATIVE SERVICES
Purchasing and Contracts
123 West Indiana Avenue • Room 302 • DeLand, FL 32720-4608
Phone: 386-736-5935 • Fax: 386-736-5972
e-mail: purchasing@volusia.org • www.volusia.org

October 4, 2019

Subject: ADDENDUM NO. 1 to RFP No. 19-P-153JRD, "P25 Compliant Radio System"

This addendum is being issued to clarify questions and make changes to the Request for Proposals (RFP). This document and all changes, as listed below, shall become an integral part of the RFP and shall take precedence over what was previously stated in the RFP document.

Q1 What is the estimated cost of the P25 Compliant Radio System?
A1 This competitive RFP is estimated to cost $10-$20 million dollars.

Q2 Which vendor was awarded RSQ#17-SQ-29JRD, to acquire 800MHz Radio System Consultant, on what date and for what amount?
A2 The Omnicom Consulting Group, Inc. was selected on January 18, 2018. The initial task assignment was for $143,360.

Q3 Is the P25 Compliant Radio System still expected to be funded using budget funds?
A3 Yes, the P25 Compliant Radio System is expected to be funded using budget funds.

Q4 Who is the technical/project manager?
A4 The technical/project manager is to be determined.

Q5 Is the Public Protection Department leading this effort? If not, which agency is the lead on this?
A5 The Volusia County Information Technology Division is leading the effort.

Please sign and attach this addendum to your proposal submittal. If you have any questions regarding this information, please contact John Duckworth, Procurement Analyst II, at 386-822-5792 or jduckworth@volusia.org.

Pamela Wilsky, CPPO, CPPB
Activity Project Manager

PW:jrd

Please sign and return with bid for 19-P-153JRD, "P25 Compliant Radio System"

Vendor: _____

Signed by (*Name/Position*): _____

Phone No.: _____ Date: _____

FAILURE TO RETURN THIS ENTIRE ADDENDUM WITH THE SUBMITTAL MAY CAUSE THE SUBMISSION TO BE RENDERED **NON-RESPONSIVE**.

Attachment: 12._Addendum_1 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

Volusia County
FLORIDA

BUDGET AND ADMINISTRATIVE SERVICES
Purchasing and Contracts
123 West Indiana Avenue • Room 302 • DeLand, FL 32720-4608
Phone: 386-736-5935 • Fax: 386-736-5972
e-mail: purchasing@volusia.org • www.volusia.org

October 14, 2019

Subject: ADDENDUM NO. 2 to RFP No. 19-P-153JRD, "P25 Compliant Radio System"

This addendum is being issued to clarify questions and make changes to the Request for Proposals (RFP). This document and all changes, as listed below, shall become an integral part of the RFP and shall take precedence over what was previously stated in the RFP document.

Q1 We are a vendor who manufactures radios specifically designed for the public safety market. Can we respond only to the sections discussing the radio subscriber units and not the infrastructure?

A1 No, the County is looking for a single solution provider.

Shape files have been provided and posted with the solicitation documents as "Volusia Shape Files.zip". Respondents shall utilize these resources in the creation of coverage maps for submissions.

Please sign and attach this addendum to your proposal submittal. If you have any questions regarding this information, please contact John Duckworth, Procurement Analyst II, at 386-822-5792 or jduckworth@volusia.org.

Pamela Wilsky, CPPO, CPPB
Activity Project Manager

PW:jrd

Please sign and return with proposal for 19-P-153JRD, "P25 Compliant Radio System"

Vendor: _____

Signed by (*Name/Position*): _____

Phone No.: _____ Date: _____

FAILURE TO RETURN THIS ENTIRE ADDENDUM WITH THE SUBMITTAL MAY CAUSE THE SUBMISSION TO BE RENDERED **NON-RESPONSIVE**.

Attachment: 13._Addendum_2 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

BUDGET AND ADMINISTRATIVE SERVICES
Purchasing and Contracts
123 West Indiana Avenue • Room 302 • DeLand, FL 32720-4608
Phone: 386-736-5935 • Fax: 386-736-5972
e-mail: purchasing@volusia.org • www.volusia.org

October 31, 2019

Subject: ADDENDUM NO. 3 to RFP No. 19-P-153JRD, "P25 Compliant Radio System"

This addendum is being issued to clarify questions and make changes to the Request for Proposals (RFP). This document and all changes, as listed below, shall become an integral part of the RFP and shall take precedence over what was previously stated in the RFP document.

Revisions to Solicitation Documents

1. **Exhibit A - Technical Specifications, page 4-9, Table 1 contains an error.** On page 4-9 Table 1 – P25 Tower Sites. The Edgewater site coordinates have been corrected to 28-57-18.17 N, 080-53-19.79 W. The County is working on an FCC license modification to correct the information.

2. **Exhibit A - Technical Specifications, page 4-10, Table 3 contains an error.** On page 4-10 Table 3 - System "B" Frequency Plan, the last Rx freq. reads 2481.2375. This in incorrect. It has been corrected to 813.2625.

3. **Exhibit A - Technical Specifications, Section 16.6.7 - A and B shall be replaced with:**

   16.6.7 Coverage Test Results and Report

   A. For each grid tested, the outbound and inbound automated BER tests shall be evaluated together in that a failure of the outbound automated BER test or failure of the inbound automated BER test for a particular grid constitutes a failure of the grid.

   B. For grids in which only one test measurement (inbound or outbound) was successfully completed, the Contractor is required to re-test grids, wherever possible, for the purpose of successfully completing both inbound and outbound BER test measurements. If it is not possible to collect both inbound and outbound BER measurements, the grid will be eliminated from the pass/fail calculation if the successfully completed test was a PASS, and will be considered a FAIL if the successfully completed test was a FAIL.

4. **Exhibit A - Technical Specifications, Section 16.8.4 - F and G shall be replaced with:**

   16.8.4 Subjective Voice Quality Testing

   F. If the voice quality of both test messages meet or exceed the test criteria, as agreed to by a majority of the test evaluation team, the grid is considered to have passed.

   G. If the voice quality of either test messages does not meet the test criteria, as agreed to by a majority of the test evaluation team, the grid is considered to have failed.

5. **Exhibit A - Technical Specifications, the title for Section 4.13.1 - Simulcast VHF FSA System (Option 1) shall be changed to, 4.13.1 – Simulcast 800 MHz Analog FSA System (Option 1).**

Attachment: 15._Addendum_3 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

6. **Exhibit B – Pricing Sheets, the title for Section 1.32 - Primary FSA VHF Simulcast System Equipment and Services (Option 1) shall be changed to, Section 1.32 - Primary 800 MHz Analog FSA Simulcast System Equipment and Services (Option 1). The subheading which currently reads, FSA VHF Simulcast System Equipment and Services shall be changed to FSA 800 MHz Analog Simulcast System Equipment and Services.**

7. **Exhibit A - Technical Specifications, Table 25 – Farmton Tower Loading, pages 12-12 through 12-13 has been replaced in Exhibit A – Technical Specifications – Revision 1. Carrier Heavy has been defined as 150-ft² Effective Projected Area (EPA) per centerline for this RFP.**

8. **Exhibit A - Technical Specifications, Section 12.11 - Plantation Bay Communication Site Development Tasks has had an additional task added, as follows:**

   B. The Contractor shall add a cable ladder to the southwest portion of the tower from the top of the ice bridge to the top of the tower.

9. **Exhibit A - Technical Specifications, Figure 4 - P25 System Microwave Design Overview on page 14-3 has been replaced in Exhibit A – Technical Specifications – Revision 1. EOC-B has been added to the diagram.**

Exhibit A – Technical Specifications – Revision 1 and Exhibit B – Pricing Sheets – Revision 1 have been posted. Respondents shall use the revised documents when preparing their submittal. Failure to submit pricing on Exhibit B -Pricing Sheets -Revision 1 may cause the submittal to be deemed non-responsive.

Questions and Answers from Pre-Solicitation Meeting and Site Visits

These questions and answers are documented as a result of the mandatory pre-solicitation meeting and site visits which occurred on October 15, 2019, October 16, 2019, and October 17, 2019. If a vendor does not see their question addressed, please submit the question as specified in RFP document Section 3.9 - Questions, Exceptions, and Addenda Concerning RFP 19-P-153JRD.

Pre-Solicitation Meeting

Q1 **Regarding the Farmton site, will the County provide updated geotechnical surveys if the site location moves?**

A1 Yes, the County will provide updated surveys.

Q2 **Regarding the Farmton site, what is the required loading for carriers? (How many carriers?)**

A2 The site will be designed for Carrier Heavy per the ANSI/TIA 222-G specification. The site will accommodate 4 carriers plus the County's 800 MHz public safety system.

EOSCC

Q3 **Would it be possible to get floor layouts for the various sites?**

A3 Due to security requirements of the facilities, plans of the radio sites will only be available to those prime Contractors who have attended the mandatory pre-solicitation site visits.

1. Prior to Scheduling

   a. Contractors must provide a letter with the following information on company letterhead:

Attachment: 15._Addendum_3 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

i. The name, title, address, email and cellular phone number of the individual responsible for ensuring the representatives viewing the documents on their behalf understand and will adhere to the requirements and procedures for viewing the documents.

ii. A list of all individuals (with the same information as above) approved to view the documents on behalf of the company (including proposed Subcontractors).

b. The letter and Exhibit D - Authorization to Review Site Plans shall be executed by a company authorized signatory and submitted to John Duckworth, Procurement Analyst, jduckworth@volusia.org.

2. Schedule

Drawings will be available **BY APPOINTMENT ONLY** as scheduled by Volusia County Purchasing and Contracts. A ninety (90) minute time slot to review the site plans will be made available per prime Contractor.

3. Location

3rd Floor Purchasing Conference Room, Purchasing and Contracts Division 123 W. Indiana Ave Room 300 DeLand, FL 32720.

4. Viewing Process

a. No cell phones or cameras are allowed in the conference room.
b. All phones are to be left with the receptionist at check in.
c. IDs shall be required to confirm the individual is on the approved list.
d. The Purchasing staff will provide one set of drawings to each Contractor for review. All County provided documents must be returned at end of visit.

Q4 **How old is the EOSCC facility?**
A4 The facility was opened in 2013.

Q5 **What controls the tower light at each console station?**
A5 There are buttons at each station which employees can activate.

Q6 **When have the dispatch consoles been last updated?**
A6 The consoles have been updated within the past month.

Q7 **Is the clock on a network?**
A7 The Spectracom Netclock is on the County's radio network and runs the consoles, the logging recorders, and the CAD system.

Q8 **Are the current consoles P25 compliant?**
A8 Yes, the current consoles are P25 complaint.

Q9 **Is the green ground wire tied to the ground grid?**
A9 Yes, the ground wire is tied to the ground grid.

Q10 **Does all cabling go down beneath the floor?**
A10 Yes, cabling is run beneath the raised floor.

Attachment: 15._Addendum_3 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

Q11 What is the depth between the floor in the communications dispatch room and finished concrete?
A11 Between 1 - 2 feet.

Q12 Are the backup radios tied to a combiner?
A12 Yes, the backup radios are tied to a combiner.

Q13 Is there redundant fiber to the EOC-A tower?
A13 There is a minimal amount of single mode fiber available between the EOSCC and 49 Keyton. There is redundant multi-mode fiber between 49 Keyton and EOC-A tower site.

Q14 Are backup radios preferred to be placed at EOSCC or the current backup dispatch area at the Sheriff's IT building?
A14 The backup radios will reside in the Dispatch area in console positions at the EOSCC. The backup dispatch facility at 59 Keyton has backup radios.

Q15 Is the County looking to place microwave at this location (EOSCC)?
A15 No, the County is not looking to place microwave at this location.

Q16 Does every radio position have a control screen?
A16 Yes, every radio position has a control screen.

Q17 Where does the communications dispatch room electrical panel go?
A17 The communications dispatch room electrical panel is located in the mechanical room in the EOSCC.

Q18 What do the FIRE1 and FIRE2 consoles handle?
A18 East side of the county and west side of the county.

Q19 What are the dimensions of the communications dispatch room?
A19 The dimension of the dispatch room are approximately 114' by 57'.

Q20 Where are the network management terminal locations?
A20 The Radio Control Point Building, and the IT Room at the EOSCC.

Q21 Are there empty cabinets in the IT room at the EOSCC?
A21 Yes, there are empty cabinets in the IT room at the EOSCC.

Q22 Are the radios in the cabinets in the IT room at the EOSCC P25 compliant?
A22 Yes, the radios are P25 compliant.

Q23 What is the asset manager program?
A23 Lucity.

Q24 What is the capacity of the UPS?
A24 The capacity of the UPS units in the mechanical room is 450kva. There are two 450kva units.

Q25 Shall the combiners at the EOSCC be reused?
A25 Yes, the combiners can be reused.

Q26 How are the radios terminated?
A26 The RF portion is terminated into a 50 ohm combiner. The radio head on the backup radio is terminated to the RF unit in the IT Communications room with an RS485 canned cable.

Attachment: 15._Addendum_3 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

Q27 **Are the combiners 6 port or 8 port?**
A27 They are 2 x 4 port for a total of 8 ports.

Q28 **Do RF cables go out to the tower at the EOSCC?**
A28 Yes, RF cables go to the tower at this location.

Q29 **Please identify the multi-band radio?**
A29 The Unity Harris multi-band radio is located in the Supervisor pod.

Q30 **Where is the antenna for the multi-band radio?**
A30 The antenna is located on the 80' tower in the back of the EOSCC.

Q31 **Does each combiner have its own antenna?**
A31 Yes, each combiner has its own antenna.

Q32 **Please identify the fire retardant system in use and any requirements regarding work/cabling.**
A32 The fire suppression system is an Ansul Sapphire system that was installed by United Fire Protection.

Q33 **What is the star-like antenna on the EOSCC tower?**
A33 It is a Harris Unity radio antenna.

Q34 **What are the long wires with insulators near the EOSCC tower?**
A34 HAM radio antennae.

Q35 **When the consoles lose connection, what happens?**
A35 When the consoles go down it falls back to the back-up radios.

Q36 **Do the two consoles in the war room have independent antennae?**
A36 No, they do not have independent antennae.

Q37 **Is there a separate IT room for the equipment/consoles in the war room?**
A37 No. The equipment utilizes the same IT room as the other equipment.

Radio Control Point

Q38 **Is the network management client in the same room as the backup console?**
A38 The network management console will be located in the Radio Shop room at 49 Keyton. The Symphony console at 49 Keyton is also located in the Radio Shop room.

Q39 **Is there a backup control station in the radio control point building?**
A39 No. There are radios, but they are not associated with a console.

Q40 **Where are the primary and secondary cores?**
A40 Primary core at dispatch, secondary core at radio control point.

Q41 **Is there microwave at this building?**
A41 No, there is no microwave at this location.

Q42 **Where is the demarc for the fiber?**
A42 The fiber demarc is located in the radio control point room.

Attachment: 15._Addendum_3 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

Q43 Is the fiber all single mode?
A43 The fiber is multi-mode.

Q44 Does the fiber between the EOC-A and EOC-B tower locations route through this radio control point building?
A44 Yes, the fiber is routed through the radio control point building.

Q45 Where are the logging recorders?
A45 The primary logging recorder is located in the EOSCC and the secondary recorder is at 59 Keyton Drive.

Q46 Is it all 4-wire audio?
A46 Yes, it's all 4-wire E&M signaling.

Q47 How many conventional interfaces?
A47 There are 48 conventional interfaces at 49 Keyton and 48 at the EVAC tower site. This is specified in Exhibit A - Technical Specifications – Revision 1, Section 2.7 – Voice Logging Recorder.

Q48 Is the EOC-A prime control point at the radio control point building or the EOC-A tower site?
A48 At the radio control point located at 49 Keyton Drive.

Q49 Can the County provide a T-1 plan?
A49 The County plans to convert all T1 services on the Legacy EDACS network to IP. If there is a specific need for the T1 Plan, please submit the request, and reason, as an additional question.

Q50 What is the height of the raised floor in the radio control point building?
A50 There is no raised floor but there is a trough in the floor which leads to the Telephone room at 49 Keyton.

Sheriff IT - Backup Dispatch

Q51 How many backup console positions?
A51 Eleven (11) total backup consoles.

Q52 Is there a combiner?
A52 Yes, there is a combiner.

Q53 Are the backup consoles being replaced?
A53 Yes, The County will provide the computer but the vendor must provide their computer specifications.

Q54 Are all of these new console applications?
A54 These are existing console positions.

Q55 Where is the ground system?
A55 The ground system is located under the floor which leads outside to the outside grounding counterpoise for 59 Keyton.

Q56 Do you have any lightning issues here?
A56 There have been very few lightning issues since fiber installation.

Attachment: 15._Addendum_3 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

EOC-A Tower Site

Q57 Where is the fiber demarc?
A57 The fiber demarc is in the microwave rack.

Q58 Is there dedicated fiber from this site to the radio control point building?
A58 Yes. The fiber run to the EOC-A tower site is multimode.

Q59 Can the County provide building specifications for all tower sites? Floor loading is a concern with battery weight.
A59 Shelter specifications and building type for tower sites are listed in the table below. No additional information is available.

Shelter Specifications and Construction Type (if available)					
Site Name	**Manufacturer**	**Model**	**Construction type**	**Load Rating**	**Size**
Plantation Bay	Rohn		Concrete floor	200 PSF	12' X 36' X 9' H
Ormond Beach	Miller				12' X 20' X 9' H
EVAC	Custom Built	N/A	Concrete floor		26' X 24' X 9' H
Pierson	Rohn	ESB20249	Wood joists	200 PSF	20' X 14' X 9' H
EOC - A	VFP	3820	Concrete floor	125 PSF	14' X 32' X 9.2 'H
EOC - B	Rohn	ESB20249	Wood joists	200 PSF	20' X 14' X 9' H
Radio Control Point	Custom Built	N/A	Concrete floor		16' X 31' X 10' H
Port Orange	Custom Built	N/A	Concrete floor		27' X 18' X 9' H
DeLeon Springs	Miller				12' X 20' X 9' H
DeLand FDOT	Custom Built	N/A	Concrete floor		13' X 11' X 9' H
New Smyrna	Miller				12' X 20' X 9' H
Edgewater	Rohn	ESB20249	Wood joists	200 PSF	20' X 14' X 9' H
Orange City	Rohn	ESB20249	Wood joists	200 PSF	20' X 14' X 9' H
Deltona	VFP	3820	Concrete floor	125 PSF	14' X 32' X 9.2 'H
Debary (Paola)					12' X 32' X 9' H
Farmton Shelter	Andrew	RCS1020355T195	2" thick concrete slab	200 PSF	20' X 10' X 9' H

Q60 Exhibit A - Technical Specifications, page 14-3 shows EOC-A in Figure 4, but not EOC-B. Will the County be keeping EOC-B?
A60 Yes, the county will be keeping EOC-B. Figure 4 on page 14-3 of Exhibit A – Technical Specifications has been updated.

Q61 How recently has grounding been updated?
A61 The grounding system has been updated within the past two years.

Q62 Is the Net-Guardian controlled by County IT?
A62 Yes, the Net-Guardian is controlled by County IT.

Attachment: 15._Addendum_3 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

Q63 Who shall be responsible for any opening(s) which must be cut through the shelter wall?
A63 The selected radio system vendor.

EOC-B Tower Site

Q64 Can the County provide a current structural analysis for the tower?
A64 No, the County does not have a current structural analysis for this tower.

Q65 Does the County require additional permission to add equipment to the tower?
A65 Yes per our lease agreement with Crown Castle.

Q66 Is there redundant fiber to the radio control point?
A66 Yes, there is redundant fiber to the radio control point.

Q67 The multi-mode jumpers do not seem to match the multi-mode cables. Can you explain?
A67 The jumpers and the fiber are multi-mode.

Q68 What is the high frequency of the Harris radio?
A68 The Harris microwave, it is 6GHz.

Q69 Is the fiber between EOC-A and EOC-B multi-mode?
A69 Yes, there is multi-mode fiber between EOC-A and EOC-B..

Q70 What is the fiber distance between EOC-A and EOC-B?
A70 The main buried multimode fiber run is 1,788 ft. and the backup aerial multi-mode fiber run is 2,218 ft.

Plantation Bay Tower Site

Q71 Will electrical at this site be completed by the County?
A71 Electrical service to the radio shelter will be provided by the County.

Q72 Who is responsible for any electrical changes if required?
A72 It depends on the type of electrical changes. The County will provide required changes to the basic electrical service. Other changes will be the vendor's responsibility.

Q73 When will electrical work be done?
A73 The electrical service at Plantation Bay will be complete by the end of November 2019.

Q74 Is there a 100' ground well tied to the ground ring?
A74 Yes, there is a 100' well tied to the ground ring.

Q75 Who will be responsible to run a bridge from the shelter to the tower?
A75 Flagler County is responsible for running the bridge via their vendor.

Q76 Will there be a generator installed at this site?
A76 Yes, a generator will be installed.

Cody's Corner Flagler Tower Site

Q77 What space is the County able to use? Please provide location for the new equipment.
A77 The County will have approximately one complete communications rack of space available.

Attachment: 15._Addendum_3 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

Q78 Will the County utilize Flagler's rectifier?
A78 Yes the County will utilize the DC power available in the shelter.

Q79 With the County be able to utilize the Flagler power distribution unit?
A79 Yes, the power distribution unit will be able to be utilized by the County.

Q80 What is the height of the tower?
A80 The height of the tower is 320 feet.

Q81 Where does the existing microwave go?
A81 The existing microwave equipment is owned by Flagler County and the specifics for that equipment are unknown.

Q82 Is this a microwave relay site for Volusia County?
A82 Yes, this will be a microwave relay site for Volusia County and a coverage site for Flagler County.

Q83 Will the County be able to stack on the existing cable rack?
A83 Yes, the County will be able to stack on the existing cable rack.

Ormond Beach Tower Site

Q84 Are cameras on the tower utilized by the County?
A84 The cameras are not currently active.

Q85 What does this tower cover?
A85 Ormond Beach and the southern part of the north peninsula.

EVAC Tower Site

Q86 Is the microwave equipment still in service?
A86 Yes, there is still microwave equipment in service.

Q87 What height on the tower is the 800MHz equipment?
A87 The County's Bogner antennas are located at the top of the tower, approximately 300'.

Q88 What is being logged on the LRIM?
A88 Nothing is logged on the LRIM.

Q89 What is the fiber used for at this location?
A89 The fiber is no longer in use.

Port Orange Tower Site

Q90 Does the microwave require its own power supply?
A90 The microwave system at this site has its own 48vdc power system.

Q91 Regarding the decommissioning of UPS, how will they be disposed?
A91 The County will send them to auction.

Q92 Is there a backup battery for the microwave system?
A92 There is no separate battery backup for the microwave. The 48vdc batteries are sourced from AC street or generator power.

Attachment: 15._Addendum_3 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

Q93 What is the fiber used for at this location?
A93 The fiber is no longer in use.

Q94 There is no power box in the shelter, all power seems secondary. How can we assure sufficient power for the new system?
A94 The selected vendor will provide a 48vdc power system for all sites. The AC power is fed from a separate building owned by the City of Port Orange.

Q95 Who owns the tower?
A95 The tower is owned by Crown Castle South LLC.

New Smyrna Beach Tower Site

Q96 Where is the ground bus line?
A96 The copper entry panel for the feedline is the ground bus line.

Q97 Can the County provide a list of generator capacities at each site?
A97 All sites have a 60kw generators except for the FDOT site which has a 20kw generator.

Edgewater Tower Site

No questions.

Debary Tower Site

Q98 How long has the County been in this shelter?
A98 The County has been in this shelter since 2018.

Q99 There are three antennae on the tower. Do they all belong to the County, and what are their purposes?
A99 The antennas belong to Volusia County. There are two transmit and one receive antennas for the 800 MHz public safety system.

Deltona Tower Site

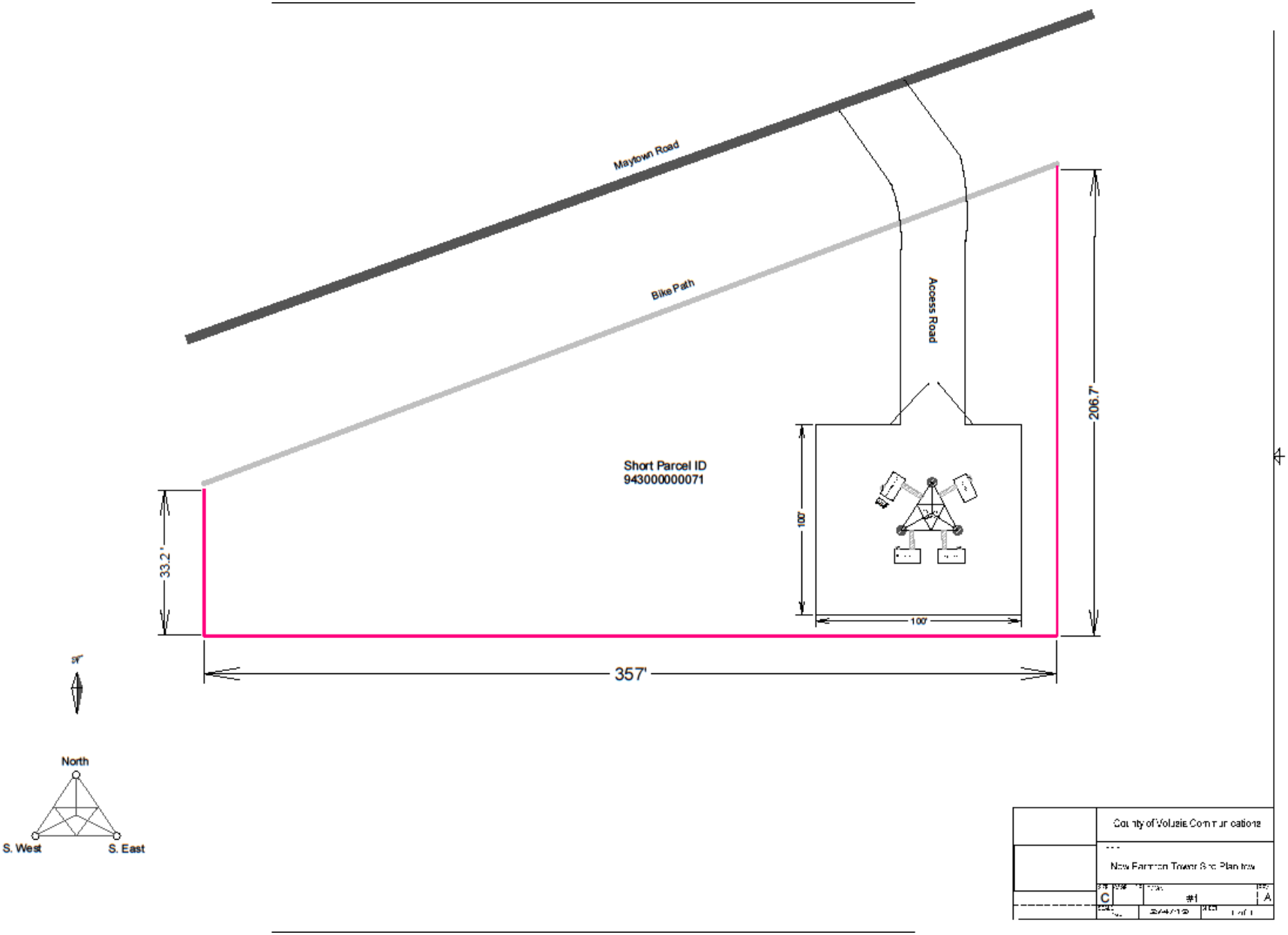
Q100 There seems to be an extra antenna on the tower. Can you provide the purpose?
A100 The additional antenna is no longer used.

Q101 Do you know the origins of the shelter?
A101 There shelter was provided by the vendor who built the radio site.

Farmton Future Tower Site

Q102 Is there a site plan?
A102 The Farmton site layout is provided below.

Attachment: 15._Addendum_3 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)


Maytown Road
Bike Path
Access Road
Short Parcel ID
943000000071
206.7'
33.2'
100'
100'
357'
North
S. West
S. East

Q103 Is there a survey available?
A103 The County has currently engaged an engineering survey firm to complete a boundary survey which will be made available to vendors by the end of November 2019.

Q104 Is the County delivering the shelter for the site?
A104 Yes, the County will deliver the shelter.

Q105 Are specifications available for the shelter?
A105 The shelter was manufactured by Andrew Corporation and the County can provide the specs when we provide the site floor plans.

Orange City Tower Site

Q106 For what purpose was the plywood added to the wall?
A106 The plywood was added for a special project, but ultimately never used.

Q107 Was this always a Volusia County site?
A107 Yes, this was always a Volusia County site.

FDOT Tower Site

No questions.

DeLeon Springs Tower Site

Q108 Are the cable bundles on the tower fine as is? They do not seem to meet the specifications as required for the new Farmton site.
A108 The County expects that the selected vendor address any cable bundles issues as part of the installation of its equipment at the site.

Pierson Tower Site

Q109 Is the mutual aid system currently in use?
A109 Yes, the mutual aid system is currently in use.

[The remainder of this page has been purposefully left blank.]

Attachment: 15._Addendum_3 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

Please sign and attach this addendum to your proposal submittal. If you have any questions regarding this information, please contact John Duckworth, Procurement Analyst II, at 386-822-5792 or jduckworth@volusia.org.

Pamela Wilsky, CPPO, CPPB
Activity Project Manager

PW:jrd

Please sign and return with proposal for 19-P-153JRD, "P25 Compliant Radio System"

Vendor: _____

Signed by (*Name/Position*): _____

Phone No.: _____ Date: _____

FAILURE TO RETURN THIS ENTIRE ADDENDUM WITH THE SUBMITTAL MAY CAUSE THE SUBMISSION TO BE RENDERED **NON-RESPONSIVE**.

Attachment: 15._Addendum_3 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

Volusia County
FLORIDA

BUDGET AND ADMINISTRATIVE SERVICES
Purchasing and Contracts
123 West Indiana Avenue • Room 302 • DeLand, FL 32720-4608
Phone: 386-736-5935 • Fax: 386-736-5972
e-mail: purchasing@volusia.org • www.volusia.org

November 8, 2019

Subject: ADDENDUM NO. 4 to RFP No. 19-P-153JRD, "P25 Compliant Radio System"

This addendum is being issued to clarify questions and make changes to the Request for Proposals (RFP). This document and all changes, as listed below, shall become an integral part of the RFP and shall take precedence over what was previously stated in the RFP document.

Revisions to Solicitation Documents

1. **Exhibit A - Technical Specifications, Table 10 – Contractor-Guaranteed Service Area Reliability for Simulcast Systems, page 5-39 has been replaced in Exhibit A – Technical Specifications – Revision 2. Table 10 has been modified to reflect a single countywide coverage polygon for mobile and portable coverage.**

2. **Exhibit A - Technical Specifications, Section 16.9.9 - A shall be replaced with:**

   16.9.9 Coverage Test Failures

   A. The CATP shall be considered to have failed if any of the following conditions are demonstrated:

      a. Unauthorized changes to the system or equipment under test.

      b. The Contractor has failed to demonstrate that they have met their minimum SAR coverage commitment and the contractual requirements for radio coverage within the County jurisdictional area.

Exhibit A – Technical Specifications – Revision 2 has been posted. Respondents shall use the revised documents when preparing their submittal.

Questions and Answers

Q1: Will weighting be applied to the individual evaluation criteria items described in section 3.29? Will numeric values be applied to the criteria to achieve objective scoring? If so, please furnish details.

A1: Weighted scoring will not be utilized for this solicitation.

Q2: Will the County have both an Evaluation Committee and a separate Technical Review Committee? If so, can you describe the responsibilities of each committee during the process and provide the names of the committee members?

A2: The committee has not been finalized by management at this time.

Attachment: 19._Addendum_4 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

Q3: **Exhibit A, Pg. 2-3, C. The C3 MaestroIP™ dispatch consoles are at End of Life so to ensure the maintainability of dispatch operations, the thirty(30)Harris C3 MaestroIP™ consoles will be replaced with Harris Symphony consoles prior to commencement of the P25Project. Are the Symphony consoles P25 equipped?**

A3: Please refer to the answers for Q6 and Q8 in Addendum 3.

Q4: **What are all the specific P25 features and functions of the recently installed dispatch consoles now in use by the County?**

A4: The current dispatch consoles support all the standard P25 features defined in the APCO P25 Specifications.

Q5: **Is the new console system equipped with CSSI as envisioned under the P25 standard?**

A5: No, because the Symphony consoled are tied directly to the VIDA switch there is no need for a CSSI.

Q6: **Were the two VIDA cores upgraded for P25 operation either in conjunction with the console replacement project or separately? If so, please furnish details regarding the P25 capabilities of the hardware and software upgrades.**

A6: No, the VIDA core was upgraded in 2017 when the DeBary site was added. The VIDA core and the Symphony consoles meet all APCO P25 standards.

Q7: **Exhibit A Pg. 2-5, Is the current DeBary site connected to the Region 5 PSIC core in Lake County?**

A7: No, it is not currently connected. The County plans to eventually make it a PSIC site.

Q8: **License WQWG235 is in Termination Pending status for failure to meet buildout requirements, according to the FCC website. This was granted in 2015 to extend System A's frequencies to DeBary site. Has any action been taken on this license?**

A8: Yes, a petition for reconsideration was filed in April of 2019 and was granted in September of 2019.

Q9: **Exhibit A, Pg. 4-21, Is the test antenna demarcation point at the bulkhead surge suppressor?**

A9: Yes, this is used for testing the TTA and the service monitor is hooked to the test antenna at the bulkhead.

Q10: **During site walks at the EOSCC we noted the current control station operation. How are the control stations wired to the headset and footswitch so that they switch to the control stations when powered up?**

A10: They are wired to an interface box which the audio is routed to the headset that is powered by the backup radio power supply. When this power supply is turned on it activates the relay and routes the radio audio to the headset.

Q11: **Exhibit A, Pg. 4-24, Can the County provide a technical contact for Lucity (Central Square Technolgies)?**

A11: Nicole Schmidt (nschmidt@lucity.com)

Q12: **Exhibit A, Pg. 5-39, Table 10 divides the outdoor service area into System A and System B. As we understand it, there is no hard boundary between System A's coverage and System B's coverage. Table 10 includes separate rows for System A and System B. Should the county boundary be treated as a single coverage polygon for outdoor coverage? Please clarify.**

A12: Table 10 has been modified in Exhibit A – Technical Specifications – Revision 2 as noted above.

Attachment: 19._Addendum_4 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

Q13: Exhibit A, Pg. 6-2, Table 13 lists receiver antenna heights. This appears to conflict with section 4.13.1.F which describes the FSA as a transmit-only system. Please clarify.

A13: Ignore the receive antennas heights in Table 13 - The FSA system is transmit only.

Q14: Exhibit A Pg. 11-3, Can the County please furnish the flooring specification for the existing shelters if available to determine the necessary weight compensation for batteries?

A14: Please refer to the answer for Q59 in Addendum 3.

Q15: Exhibit A, Pg. 12-6, c. Furnish and install the foundation for a County-provided 12-foot x 20-foot prefab concrete communication shelter. Can the County provide specifications for the shelter?

A15: Please refer to the answer for Q59 in Addendum 3. The Farmton shelter specifications were provided.

Q16: Exhibit A, Pg. 14-10, What are the existing communication systems, applications and services currently supported by the existing microwave backhaul network?

A16: The microwave system supports all 800 MHz radio traffic, all conventional traffic, and T1s for Cisco router networking and switching.

Q17: Can the County please provide a list of attendees for the site walks?

A17: The sign-in sheet for the pre-solicitation meeting is attached to this Addendum. Verification was made at each site to confirm at least one representative from each prime-contractor was present.

Q18: Section 5.4 of Exhibit A – Technical Specifications please provide additional shape files that represent System A and System B service areas.

A18: Please refer to the modified Table 10 in Exhibit A – Technical Specifications – Revision 2.

Q19: Section 12.35 Farmton Site – Is the automatic transfer switch located on the interior or exterior of the shelter?

A19: The transfer switch for the Farmton site will be located inside the radio site shelter.

Please sign and attach this addendum to your proposal submittal. If you have any questions regarding this information, please contact John Duckworth, Procurement Analyst II, at 386-822-5792 or jduckworth@volusia.org.

Pamela Wilsky, CPPO, CPPB
Activity Project Manager

PW:jrd

Please sign and return with proposal for 19-P-153JRD, "P25 Compliant Radio System"

Vendor: _____

Signed by (*Name/Position*): _____

Phone No.: _____ Date: _____

FAILURE TO RETURN THIS ENTIRE ADDENDUM WITH THE SUBMITTAL MAY CAUSE THE SUBMISSION TO BE RENDERED **NON-RESPONSIVE**.

Attachment: 19._Addendum_4 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

Volusia County
FLORIDA

Sign-In Sheet

P25 Compliant Radio System - No. 19-P-153JRD

Meeting Date/Time: Tuesday, October 15, 2019 @ 9:00am

Meeting Place: 123 W. Indiana Avenue, DeLand, FL - Purchasing Conference Room

Name	JOHN DUCKWORTH
Company	COUNTY OF VOLUSIA
Address	123 W. INDIANA AVENUE
	DELAND, FL 32720
Phone	386. 822. 5792
Fax	386. 736. 5972
Email	JDUCKWORTH@VOLUSIA.ORG

Name	BILL BROWN
Company	EXPERT CONSTRUCTION MANAGERS, INC.
Address	815 S KINGS AVE, BRANDON, FL 33511
Phone	813. 335. 4765
Fax	813. 571. 0875
Email	bill@brown.org

Name	Michelle Poole
Company	Motorola Solutions Inc
Address	5208 Pheasant Run Ct
Phone	Ponte Vedra Beach FL
~~Fax~~	904 814 9938
Email	michelle.poole@motorolasolutions.com

Name	Stacy Chick
Company	Motorola Solutions
Address	19062 Centerville Rd Tlh FL 32308
Phone	800- 933 5430
Fax	
Email	S.Chick@motorolasolutions.com

Attachment: 19._Addendum_4 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

Volusia County
FLORIDA

Sign-In Sheet

P25 Compliant Radio System - No. 19-P-153JRD

Meeting Date/Time: Tuesday, October 15, 2019 @ 9:00am

Meeting Place: 123 W. Indiana Avenue, DeLand, FL - Purchasing Conference Room

Name	Rich Wolochatiuk
Company	C1
Address	4450 US HWY 1, Vero Beach
Phone	772-205-5863
Fax	
Email	rwolochatiuk@ask4c1.com

Name	LEE MORENO
Company	MICROWAVE NETWORKS
Address	1624 NORWOOD LN TLH FL 32312
Phone	850-228-1236
Fax	
Email	LEEM@MICROWAVENETWORKS.COM

Name	Trent Skille
Company	County of Volusia
Address	49 Keyton Dr
Phone	386-323-3503
Fax	
Email	tskille@volusia.org

Name	Greg Kelley
Company	County of Volusia
Address	49 Keyton Dr
Phone	386-624-3191
Fax	
Email	gkelley@Volusia.org

Attachment: 19._Addendum_4 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

Volusia County
FLORIDA

Sign-In Sheet

P25 Compliant Radio System - No. 19-P-153JRD

Meeting Date/Time: Tuesday, October 15, 2019 @ 9:00am

Meeting Place: 123 W. Indiana Avenue, DeLand, FL - Purchasing Conference Room

Name	ANDY DENT
Company	MOTOROLA SOLUTIONS INC.
Address	8000 W. SUNRISE BLVD
	PLANTATION, FL 33322
Phone	954 632 9640
Fax	
Email	ANDREW.DENT@MOTOROLASOLUTIONS.COM

Name	Robert Damuth
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Attachment: 19._Addendum_4 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

Volusia County
FLORIDA

Sign-In Sheet

P25 Compliant Radio System - No. 19-P-153JRD

Meeting Date/Time: Tuesday, October 15, 2019 @ 9:00am

Meeting Place: 123 W. Indiana Avenue, DeLand, FL - Purchasing Conference Room

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Volusia County
FLORIDA

Sign-In Sheet

P25 Compliant Radio System - No. 19-P-153JRD

Meeting Date/Time: Tuesday, October 15, 2019 @ 9:00am

Meeting Place: 123 W. Indiana Avenue, DeLand, FL - Purchasing Conference Room

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Attachment: 19._Addendum_4 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

Volusia County
FLORIDA

Sign-In Sheet

P25 Compliant Radio System - No. 19-P-153JRD

Meeting Date/Time: Tuesday, October 15, 2019 @ 9:00am

Meeting Place: 123 W. Indiana Avenue, DeLand, FL - Purchasing Conference Room

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Attachment: 19._Addendum_4 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

Volusia County
FLORIDA

Sign-In Sheet

P25 Compliant Radio System - No. 19-P-153JRD

Meeting Date/Time: Tuesday, October 15, 2019 @ 9:00am

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Attachment: 19._Addendum_4 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

Volusia County
FLORIDA

Sign-In Sheet

P25 Compliant Radio System - No. 19-P-153JRD

Meeting Date/Time: Tuesday, October 15, 2019 @ 9:00am

Meeting Place: 123 W. Indiana Avenue, DeLand, FL - Purchasing Conference Room

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Attachment: 19._Addendum_4 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

EXHIBIT A
TECHNICAL SPECIFICATIONS
REVISION 2

VOLUSIA COUNTY, FLORIDA
P25 COMPLIANT RADIO SYSTEM
REQUEST FOR PROPOSALS
RFP NO. 19-P-153JRD
11/8/2019

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1. INTRODUCTION AND OVERVIEW

1.1 Project Introduction

A. Volusia County is seeking a technically advanced, value-conscious partner to modernize its public safety land mobile radio system and to help integrate current and future broadband technologies into its public safety communications system.

B. First Responders are encountering a diverse set of challenges that are accelerating, fast moving, and compressing the need for the capabilities of a modern wireless broadband network. Specialized public safety-based applications like data intensive criminal justice applications, transmission of video and text location technology, messages for emergency and management purposes, and drone technology are a few of the drivers that are creating the need for much more than the capabilities found in the traditional land mobile radio network.

C. The first step toward this future communication system is detailed and requested in this RFP. Volusia County intends to modernize the current thirteen (13) site Harris radio system to a Project 25 (P25) trunked simulcast radio system that dynamically supports P25 Phase 1 and Phase 2 radio communications.

D. The County plans to replace its legacy microwave system with a modern MPLS-based microwave system.

E. The County intends to expand the radio system to include two new radio towers. One tower will be a partnership with Flagler County to be located at 1250 Old Dixie Highway, Bunnell, 32174 and the second tower, the construction of which is included as part of the scope of this RFP, will be located at 3757 Maytown Road, Oak Hill, 32759 in the southern part of the County. These towers will improve coverage in the northeast and southern areas of the County.

F. The County recognizes that P25 is not a broadband technology that provides high-speed communication or capacity to integrate data, video, voice, and the public safety applications being envisioned today, on a single network. The capabilities and features of smartphones built into modern cellular networks are only marginally included in P25 vendor offerings. P25 is an upgrade to the County's current public safety wireless communication system and is a step to avoid the obsolescence of its land mobile radio system and to enhance the reliability of its communication system.

G. The Federal government has set a direction to provide public safety agencies with a modern mission critical broadband-based network by allocating frequency and funds toward the use of AT&T's nationwide "FirstNet" network. Many of the standards necessary for this to technically happen are still in development. Insights regarding the capacity levels, network hardening, coverage, and project timelines are yet to be disclosed. The use of FirstNet as a principal emergency dispatch and First Responder network at the local government level with its many agencies may be realistic in the

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future as FirstNet matures, but it still appears several years off for the Volusia County area. It is critical that the County's public safety land mobile radio be upgraded to a modern P25 system now to ensure the continued reliability of public safety communication.

H. Volusia County is looking for a partner that has broad and diverse experience developing multiple communications technologies, such a satellite, terrestrial IP-based networks, wireless broadband/LTE networks, mobile networks, specialized public safety applications, and large scale public safety government networks. A vendor who can integrate its P25 radio network with multiple LTE-based carriers will improve the competitive cellular carrier environment for public safety. The technology cross-pollination that results from this kind of experience will provide First Responders with better public safety communication products that have value-conscious, value-added features now and in the future.

1.2 Project Overview

A. The County desires to upgrade their current 800 MHz proprietary communication system with a new state-of-the-art, Association of Public Safety Communications Officials (APCO) Project 25 (P25) communication system that dynamically supports both P25 Phase 1 and Phase 2.

B. The County desires to maintain a high level of system reliability through the implementation of geo-redundant core and control point sites.

C. The County desires to implement a ring topology for the new IP-based microwave backhaul network.

D. The County desires to implement a P25 Phase 2 technology system to accommodate the increasing demand for radio traffic capacity, and the anticipated FCC mandates for increased radio spectrum efficiency.

E. The County desires to improve radio coverage outdoors and within buildings, and has identified four (4) area polygons within the County where additional signal margins are required to overcome specific building losses.

F. The County must maintain the operation of their analog paging and fire station alerting (FSA) system when they upgrade to P25.

G. The County desires to maintain interoperability with agencies that use Florida Interoperability Network (FIN), Mutual Aid channels, and VHF frequencies.

H. The County desires to improve interoperability with agencies from surrounding counties such as Flagler, Seminole, Brevard, and Lake County through the implementation of a P25 open standard communication system architecture.

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I. The County desires to expand the availability of communication system options such as encryption, location services, over-the-air programming, and over-the-air rekeying of encryption keys.

1.3 General Scope of Work

A. The Contractor's proposed solution shall include the design, engineering, equipment and installation, software, licenses, implementation services, operator and technical training, and continued maintenance services for a state-of-the-art P25 public safety trunked radio system.

B. The P25 system shall provide all of the components of an APCO Project 25 standards-based digital communications network to meet the current and the foreseeable future needs of the regional public safety community.

C. The Contractor shall assume complete responsibility for the system design, engineering, hardware, software, functionality, radio coverage, licensing, installation, optimization, testing, training, cutover, and maintenance of the P25 compliant, digital trunked communications system, based upon the performance specifications and features contained in this document and in the P25 standards.

D. The Contractor shall complete and pass all acceptance tests of system components, including hardware, software, radio coverage, reliability, and the required functionality per the requirements of this RFP and the P25 standards.

E. The Contractor shall propose a complete and fully operational system that meets or exceeds the requirements herein.

F. If the Contractor's system, as installed, does not meet the contractual technical and functional requirements, all additions or modifications required in meeting those technical and functional requirements to satisfy the communication needs of the County shall be at the sole expense of the Contractor.

1.4 Definitions

A. Unless stated otherwise in the document, the following definitions shall control the meanings of certain words and phrases as used within this document.

a. **60-Day Performance Period** means that the system infrastructure shall perform as specified for sixty (60) consecutive days without a Major Failure prior to the County's consideration of Final System Acceptance.

b. **AC** means alternating current.

c. **APCO** means the Association of Public-Safety Communications Officials.

d. **Backhaul** means a network that provides network communications between RF transmission sites, communications centers where consoles are located, and the master core network control location.

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e. **Backup Dispatch Center** is located at 59 Keyton Drive, Daytona.

f. **BER** means bit error rate.

g. **CAI** means Common Air Interface for a P25 radio network.

h. **Contract** means a binding agreement between two or more persons or parties for the supply of goods and services at a fixed price.

i. **Contractor** means the offeror/proposer/respondent and any/all subcontractor(s) collectively.

j. **Contractor's Project Manager** means the person designated by the Contractor to represent the Contractor during the length of the project.

k. **Conventional Channel** means a non-trunked radio channel.

l. **County** means Volusia County, Florida.

m. **County IT** means Volusia County Information Technology staff.

n. **County's Project Manager** means an employee designated by the County to represent the County during the project and approve all purchase orders.

o. **Coverage Acceptance Test** means the automated and subjective voice testing of the radio system coverage throughout the Service Area.

p. **Coverage Acceptance Test Plan** is a listing of the criteria and methodology to be used to determine that the radio system coverage meets or exceeds the contractual requirements.

q. **CPC** means Channel Performance Criterion which is the specified design performance level in a faded channel per TSB-88, latest edition.

r. **CSSI** means Console Sub-system Interface for a P25 radio network.

s. **DAQ** is an acronym for Delivered Audio Quality.

t. **DC** means direct current.

u. **Detailed Design Review** will be performed by the contractor and will occur after contractor selection and prior to contract execution.

v. **Division 27** is a document that shall govern installation and cabling requirements in County IT environments including the EOSCC IT equipment room and the Backup Dispatch Center.

w. **EOSCC** is Sheriff's Office at the Emergency Operation and Sheriff's Communications Center (EOSCC) located in Daytona Beach

x. **Factory Acceptance Test** is a comprehensive testing of the fixed infrastructure system and equipment at the Contractor's factory location prior to shipment of the system to the field for installation.

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y. **Factory Staging and Acceptance Test** means that the communication system will be assembled to the fullest extent possible at the Contractor's factory location for the purpose of testing the system as a whole, and for the purpose of demonstrating its functionality to the County prior to shipment to the field.

z. **FCC** means the Federal Communications Commission.

aa. **FDMA** means frequency division multiple access.

bb. **Final System Acceptance** means that the Contractor has implemented the entire system, successfully completed all components of the System Acceptance Test Plan including the 60-Day Performance Period, and the County's Project Manager has provided written notice of Final System Acceptance to the Contractor's Project Manager.

cc. **Fixed Network Equipment (FNE)** means all hardware and software used to transmit and receive radio signals, including but not necessarily limited to, the system's 700/800 MHz transceivers, comparator/voter, system control systems, combiners, multiplexers, antennas, microwave transceivers and dishes, network dispatch consoles, etc.

dd. **FSI** means Fixed Station Interface that specifies a set of mandatory messages supporting digital voice, data, encryption and telephone interconnect necessary for communication between a Fixed Station and P25 RF Subsystem.

ee. **Functional Acceptance Test Plan** means a test procedure and check list specific for their system that exercises and demonstrates each and all of the required and proposed features, functions and capabilities including those of the user equipment and dispatch consoles.

ff. **In-building coverage** means the amount of signal margin in decibels (dB) provided in a radio system design for the purpose of overcoming signal attenuation due to the building structure in order to provide the minimum received signal level necessary to provide acceptable portable radio communications inside a building.

gg. **Intrinsically Safe** is an equipment design protection method for Division 1 which encompasses hazards that may be present under normal operating conditions or frequently present during maintenance and repair work.

hh. **ISSI** means Inter RF Sub-system Interface for a P25 radio network.

ii. **Major System Failure** means any of the following failure modes:

  i. System in non-trunked fallback mode or failsoft

  ii. System in "site trunking"

  iii. Groups of mobiles or portables receiving a denial or busy tone

  iv. The loss of more than two (2) dispatch console operator positions

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v. The loss of voice communications

vi. The loss of data communications, if applicable

vii. Failure of the trunked system switch/controller

viii. The loss of two (2) or more trunked repeater channel resources

ix. A simulcast failure affecting one (1) or more sites

x. Loss or failure of the system configuration database

xi. Loss or failure of the user database

xii. Failures that prevent acceptance criteria from being achieved

xiii. Any component infected with a virus, malware or any security breach

jj. **Minor System Failure** means any of the following failure modes.

i. Failure of any equipment which does not cause the interruption of trunking operation or dispatch console functionality, provided that redundant equipment automatically switches into operation in accordance with the RFP

ii. Momentary (10 seconds) system outages during switching to redundant control equipment

iii. The failure of one (1) repeater channel, provided that such failures are corrected within the maintenance response time required by the RFP

iv. Failure of a single dispatch console position that is not attributable to other system failures

v. Failure of a site frequency standard provided that redundant equipment automatically switches into operation in accordance with the RFP

vi. Failure of a single tower-top amplifier or multicoupler

kk. **MHSB** means Monitored Hot Standby.

ll. **MPLS** means MultiProtocol Label Switching.

mm. **Network Site** means a location for the installation of the fixed network equipment.

nn. **NPSPAC** means the National Public Safety Planning and Advisory Committee.

oo. **PIM** means passive intermodulation and is a form of intermodulation distortion that occurs in components normally thought of as linear, such as cables, connectors, and antennas.

pp. **Prime,** when referenced to a backup power generator, means the output available with varying load for an unlimited time; average power output is 70% of the prime power rating; typical peak demand of 100% of prime-rated eKW with 10% of

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overload capability for emergency use for a maximum of 1 hour in 12; overload operation cannot exceed 25 hours per year.

qq. **Project** means the collaborative effort of the Contractor and the County to complete the planning, design, implementation, testing and acceptance of the system.

rr. **Project 25 or P25** means a standard for digital radio communications, as published in the TIA-102 series, for use by federal, state/province, and local public safety agencies in North America to enable them to communicate with other agencies and mutual aid response teams in an emergency.

ss. **Repeater** means an electronic device designed to instantly retransmit the transmission of a subscriber at a higher power.

tt. **RF** means Radio Frequency.

uu. **RSL** means Received Signal Level.

vv. **Service Area** is a specific user's geographic bounded area of concern.

ww. **Service Area Reliability (SAR)** is the probability of achieving the desired CPC over the defined Service Area.

xx. **Sheriff's Office IT** mean Sheriff's Office Information Technology staff

yy. **Standby**, when referenced to a backup power generator, means the output available with varying load for the duration of the interruption of the normal source power; average power output is 70% of the standby power rating; typical operation is 200 hours per year (Emergency Standby) with a maximum expected usage of 500 hours per year (Standby).

zz. **System** means all electronics, hardware, and software components routinely employed to operate the 700/800 MHz digital trunked network including, but not limited to, fixed network equipment, antenna, transmission lines, electronic control consoles, microwave system, towers, tower grounding systems, associated subsystems, etc., resulting in a fully operational, licensable, highly reliable 700/800 MHz digital trunked public safety radio communications capability meeting the requirements of and intended to be part of this procurement.

aaa. **Talk Group** means a virtual talk path in a trunked system that is analogous to a radio channel in a conventional system.

bbb. **Talk In** means from the 'mobile equipment' inbound to the fixed-end receiver system equipment, also referred to as a reverse-link or up-link.

ccc. **Talk Out** means from the fixed-end system equipment transmitters outbound to the 'mobile' units, also referred to as a forward-link or down-link.

ddd. **TDM**A means time division multiple access.

eee. **TDR** means time-domain reflectometer.

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fff. **Turnkey Solution** means that if the Contractor's system, as engineered and installed, does not meet the contractual technical and functional requirements, all additions or modifications required in meeting those technical and functional requirements to satisfy the communication requirements of the County as specified in this RFP and resulting Contract, shall be provided and performed at the sole expense of the Contractor.

ggg. **Terminal Equipment** is synonymous with User Equipment and refers to non-infrastructure equipment such as mobile and portable radios, control stations and remotes, and pagers.

hhh. **Test Tile** is the location where the random subsamples for CPC are taken.

iii. **User Equipment** refers to non-infrastructure equipment such as mobile and portable radios, control stations and remotes, and pagers.

jjj. **VAC** means volts alternating current.

kkk. **VDC** means volts direct current.

lll. **700 MHz** means the radio spectrum between 763 and 805 Megahertz as currently authorized by the FCC.

mmm. **800 MHz** means the radio spectrum between 806 and 862 Megahertz as currently authorized by the FCC.

1.5 Standards of Work

A. The applicable sections or portions of the standards, regulations, and codes of the entities listed below shall apply to the Contractor for the equipment and site preparation and for the installation, operation, maintenance, and service of the system by the Contractor.

a. APCO Project 25 System and Standards Definition and Functional Requirements as defined in TIA-102 Standards documents, latest revisions.

b. FCC Rules and Regulations, Code of Federal Regulations, Title 47, Chapter I, including:

i. Part 17 - Construction, Marking and Lighting of Antenna Structures

ii. Part 90 - Private Land Mobile Radio Services

iii. Part 101 - Fixed Microwave Services

c. Division 27 - Shall govern installation and cabling requirements in County IT environments including the EOSCC and the Backup Dispatch Center

d. FAA Regulations

i. Vol. XI - Objects affecting Navigable Airspace Part 77

ii. Advisory Circular 70/7460-1L

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e. Electronic Industries Association (EIA) Standards:

   i. EIA-152 Minimum Standards for Land Mobile Communications, FM, or PM Transmitters

   ii. EIA-204 Minimum Standards for Land Mobile Communication FM or PM Receivers (25-927 MHz)

   iii. EIA-210 Terminating and Signaling Equipment for Microwave Communication Systems

   iv. EIA-220 Minimum Standards for Land Mobile Communications Continuous Tone Controlled Squelch Systems (CTCSS)

   v. EIA-232 Interface between data terminal equipment and data circuit-terminating equipment employing serial binary data interchange

   vi. EIA-310 Racks, Panels, and Associated Equipment

   vii. EIA-316 Minimum Standards for Portable/Personal Radio Transmitters, Receivers, and Transmitter/Receiver Combination Land Mobile Communications FM or PM Equipment, 25-1000 MHz

   viii. EIA-329 Minimum Standard for Land Mobile Communications Antennas, Part I - Base or Fixed Station Antennas, and Part II - Vehicular Antennas

f. Telecommunications Industry Association Standard TIA-603 latest revision

g. Telecommunications Industry Association Standard Technical Service Bulletin TSB-88 latest revision

h. Telecommunications Industry Association / Electronic Industries Association (TIA/EIA) Standard TIA-222 latest revision for communications towers

i. IEEE - Institute of Electrical and Electronic Engineers

j. Military Standard 810 - where specified, radio equipment shall meet specific requirements of parts of Military Standard 810 C, D, E, F, and G

k. National Electrical Code

l. Local Electrical and Building Codes

m. NEMA - National Electrical Manufacturer's Association

n. National Fire Protection Association - (NFPA):

   i. NFPA #1221 - Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems

   ii. NFPA #70 - National Electrical Code

   iii. NFPA #37 - Combustion Engines

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iv. NFPA #78 - Lightning Protection Code

v. NFPA #110 - Emergency and Standby Power Systems

vi. NFPA #58 - Liquefied Petroleum Gas Code

B. The Contractor shall be responsible for meeting the requirements of the latest revisions of each document at the time of installation regardless of the revision level in place at the time of proposal submittal.

C. At time of installation, the Contractor shall update any non-compliant equipment to the latest specification at no additional cost to the County.

D. In addition to the standards and codes referenced above, it is the intent of this document to specify a full and complete system that adheres to the objectives and requirements of P25, Phase 1 and Phase 2.

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2. CURRENT SYSTEM DESCRIPTION

2.1 Overview

A. The County's 800 MHz trunked communication system consists of Harris Corporation's proprietary EDACS technology, with two (2) geo-redundant control sites, 12 simulcast tower sites, two (2) interconnected 6-site simulcast cells, and the EVENT system.

B. The system also includes a P25 Public Safety Interoperable Communications (PSIC) tower site at DeBary.

C. All communication sites are connected to the County's geo-redundant, Harris SR10A.3 VIDA cores.

D. The County operates a consolidated public safety answering point (PSAP) which is operated by the Sheriff's Office at the Emergency Operation and Sheriff's Communications Center (EOSCC) located in Daytona Beach.

E. The EOSCC contains 32 Harris C3 MaestroIP™ model radio dispatch consoles which includes the two (2) operator positions in the Emergency Operations Center (EOC) room housed within the EOSCC facility.

F. The communications system infrastructure sites are linked together using a combination of Aviat DVM6-45, Nokia MDR-8000, and MNI Proteus MX digital microwave links, as well as County-owned fiber.

G. There are fifty-seven (57) fire stations that use a combination of Zetron Model 25 tone alerting technology and Zetron IP-based fire station alerting (FSA) systems. The County has twenty (20) fire stations and the cities have thirty-seven (37) fire stations.

H. The fire stations that are alerted by the Zetron Model 25 tone system use the EDACS radio system for the transmission of the alerting tones and the stations alerted by the Zetron IP system utilize leased IP data connectivity from Spectrum (formerly Brighthouse).

I. The communication system supports approximately 10,000 users from the County, Cities, the State, and surrounding mutual aid partners.

J. The County's towers, equipment shelters, and backup generators are generally in good physical condition and it is anticipated that they will support the new P25 system equipment; however, a small number of towers may require structural reinforcement to meet current wind loading requirements based on Contractor proposed design.

K. The shelters have adequate floor space to support parallel systems during the transition.

L. New -48VDC battery plant uninterruptable power systems shall be implemented at all communication tower sites.

M. Some sites may need floor reinforcement to support the DC battery plant and the Contractor shall note appropriately during the pre-bid site visits.

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N. The EOSCC is capable of supporting the equipment of the new communication system.

2.2 EDACS and DeBary P25 Systems Configuration

A. The County's EDACS trunked system consists of two (2) geo-redundant control sites, two (2) interconnected 6-site simulcast cells, (System A and System B), a single-site cell called System C or the EVENT system, and a single-site P25 cell called System D or the DeBary P25 system.

B. The geo-redundant control sites consist of SR10 VIDA cores which are connected to:

a. The primary and backup dispatch console systems

b. Two (2) Unified Audio Cards (UACs) for conventional analog interfaces

c. System A

d. System B

e. System C

f. System D

C. System A is a 6-site, 14-channel EDACS simulcast system that supports communications in the west side of the County.

D. System B is a 6-site, 16-channel EDACS simulcast system that supports communications in the east side of the County.

E. System C or EVENT is a single-site, 5-channel EDACS system that supports communications for special events in the east side of the County from the EVAC tower site.

F. System D, the DeBary P25 Phase 2 System, is a 5-channel P25 system that supports PSIC communications for some public safety communications events in the southwest side of the County from the DeBary tower site in Seminole County.

2.3 Infrastructure Tower Sites

A. The System A tower sites are Pierson, De Leon Springs, EOC-A, DeLand-FDOT, Orange City, and Deltona.

B. The System B tower sites are Ormond Beach, EVAC, EOC-B, Port Orange, New Smyrna Beach, and Edgewater.

C. The System C is located at the EVAC tower site.

D. The System D tower site located at the DeBary tower site in Seminole County.

2.4 Unified Audio Cards for Conventional and Analog Interfaces

A. There are a number of secondary conventional radio channels and ancillary analog communication systems connected to the EDACS system through two centralized UACs.

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B. The UACs are located at the EOC-A Control Point and at the EVAC tower site.

C. Audio and control from the remaining communication sites are routed to the UACs through connections to the existing channel banks.

D. These resources will be interconnected to the new P25 system and a complete listing of these resources may be found in the appendices.

2.5 BeOn Service for Smartphone Access

A. The County SR10 VIDA cores are equipped with the BeOn virtual server which enables properly equipped smartphones to access the communication system from commercial carrier systems.

B. The County currently has 100 server & client licenses on a server that is capable of supporting 400 licenses.

2.6 Dispatch Facilities

A. The primary dispatch center is located at the 43,000 square-foot EOSCC facility and the backup dispatch is at the Sheriff's Office IT facility.

B. The EOSCC also contains the 4,000 square-foot EOC.

2.6.1 EOSCC Primary Dispatch Center and EOC

A. The EOSCC is located at 3825 Tiger Bay Road in Daytona Beach.

B. The 6,500 square-foot dispatch center is equipped with 30 Harris C3 MaestroIP™ dispatch console positions and the associated electronics.

C. The C3 MaestroIP™ dispatch consoles are at End of Life so to ensure the maintainability of dispatch operations, the thirty (30) Harris C3 MaestroIP™ consoles will be replaced with Harris Symphony consoles prior to commencement of the P25 Project.

D. There are two (2) fire dispatch positions, each equipped with a Zetron Model 25 two-tone encoder interfaced with CAD for dispatch.

E. The two (2) encoders have all the individual station buttons in the two (2) fire dispatch positions.

F. In the second position, or "Pod", there is a third Zetron Model 25 encoder with a limited number of station buttons that is connected to a control station radio that serves as a manual backup FSA system.

G. Supporting electronics equipment is installed in the County's IT equipment room within the EOSCC.

H. The EOC contains approximately 100 desks, each with a telephone and a computer data connection to support the various agencies that respond to the EOC during an emergency.

I. The EOC has a full array of audiovisual capabilities and is equipped with two (2) Harris C3 MaestroIP™ dispatch consoles.

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J. The C3 MaestroIP™ dispatch consoles are at End of Life so to ensure the maintainability of dispatch operations, the two (2) Harris C3 MaestroIP™ consoles will be replaced with Harris Symphony consoles prior to the commencement of the P25 Project.

2.6.2 Backup Dispatch Center

A. The Sheriff's Office IT facility is located at 59 Keyton Drive, Daytona Beach and the backup dispatch facility is collocated within the IT office space.

B. The dispatch console equipment consists of eleven (11) Harris VIP model dispatch software applications running on County-owned computers.

C. Accessories include a footswitch and a headset jack at each operator position.

D. Each VIP console position is equipped with a stand-alone Harris desktop M7100 series control station radio installed in a closed cabinet with the VIP computer.

E. The control stations are connected to a control station antenna combining network in the back equipment room and is connected to an outdoor antenna system.

2.7 Voice Logging Recorder

A. The County currently utilizes two (2) voice logging recorder systems to log telephone and radio communications traffic

B. The primary recorder is an Exacom system located at the EOSCC Sheriff's IT equipment room. The Exacom recorder records sixty-four (64) Intrado VIPER positions with sixty-four (64) 9-1-1 lines, forty-eight (48) trunked voice network interfaces, and sixteen (16) analog channels for a total of one hundred twenty-eight (128) channels.

C. The secondary recorder is a Verint system located at the 59 Keyton Backup Dispatch Center equipment room. The Verint recorder records twenty (20) Intrado VIPER positions with twenty (20) 9-1-1 lines, sixty (60) Admin lines, and twelve (12) analog Crisis Link Lines.

D. Analog radio audio from the EDACS system is provided to the voice logging recorders through the Migration Gateway.

2.8 Communication System Frequencies

A. The EDACS and DeBary P25 PSIC radio systems operate in the 800 MHz frequency band.

B. The County presently holds five (5) 800 MHz FCC licenses for trunking operations, and two (2) licenses for conventional, non-trunked, operations as follows:

a. WNHE867 authorizes a total of thirty (30) frequency pairs for the EDACS System A and System B at each of the following six (6) fixed sites.

i. EOC-A

ii. EOC-B

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iii. EVAC

iv. Port Orange

v. Edgewater

vi. Pierson

b. WPFQ272 authorizes a total of fourteen (14) frequency pairs for the EDACS System A at the following six (6) fixed sites.

i. Orange City

ii. Ormond Beach

iii. New Smyrna Beach

iv. De Leon Springs

v. Deltona

vi. DeLand-FDOT

c. WPFQ272 authorizes an additional sixteen (16) frequency pairs for the EDACS System B at each of the following five (5) fixed sites.

i. Orange City

ii. Ormond Beach

iii. New Smyrna Beach

iv. De Leon Springs

v. Deltona

d. WPFQ272 authorizes an additional three (3) frequency pairs at the Orange City fixed site that include 857/812.9375, 858/813.9375, and 860.9375/815.9375 MHz.

e. WQWE318 authorizes a total of five (5) frequency pairs for the DeBary P25 PSIC System at the DeBary tower site in Seminole County.

f. WQWG235 licenses the current fourteen (14) frequency pairs for System A at the DeBary site when the DeBary site is integrated to the System A simulcast system.

g. WPPW666 authorizes a total of five (5) frequency pairs for the EDACS EVENT system at the EVAC tower site.

h. WQFN278 authorizes the MAFLA mutual aid channel at each of the following fixed sites.

i. Orange City

ii. Edgewater

iii. EVAC

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iv. Pierson

i. WPQC890 authorizes a total of four (4) frequency pairs for National Mutual Aid Channels, 8CALL90, 8TAC92, 8TAC93, and 8TAC94 at each of the following fixed sites.

i. EOC-B

ii. EVAC

iii. Port Orange

iv. Edgewater

v. Pierson

vi. Orange City

2.9 Backhaul Network

A. The County's current microwave backhaul network shall be replaced with a new MPLS-based microwave network.

B. A diagram of the current system can be found in the appendices.

2.10 Paging and Fire Station Alerting

A. The County's current Zetron IP FSA system is used for the alerting of eight (8) fire stations and is not dependent upon the EDACS system other that for the voice messages transmitted following the alerting of the station. Wireline circuits are utilized to alert these stations. Two (2) stations in Orange City use Zetron Model 6204 equipment. Six (6) stations in Deltona use Zetron Model 6 equipment.

B. The County's current Zetron Model 25 FSA system supports fire station alerting for fifty-one (51) stations by broadcasting the analog alerting tones over the Fire 1 and the Fire 2 talk groups on the current EDACS system.

C. The County is studying the replacement of the current Zetron Model 25 FSA system with a network-based IP FSA system that will eliminate the need to broadcast the alerting tones over the P25 voice radio system.

D. If the EDACS system is replaced with a P25 system prior to the implementation of a new network-based IP FSA system, then an interim solution is required to maintain the analog alerting operation of the Zetron Model 25 FSA system.

E. The VHF Fire Paging system provides the secondary method of fire station alerting in the event of failure of the primary EDACS system.

F. The VHF Fire Paging system is interconnected with the current radio and microwave systems and will be upgraded with the EDACS radio system.

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2.11 Interoperability

A. There is good interoperability capability with agencies within the County because they all share the EDACS system.

B. Interoperability capability with surrounding agencies is somewhat limited because of disparate technologies.

C. Interoperability with the Florida Interoperability Network (FIN) network is accomplished by patching FIN to the appropriate talk group on the dispatch consoles.

D. For County agencies operating with other proprietary trunked technologies, and for agencies operating in other frequency bands such as UHF for hospitals or VHF for Forestry, a radio "cross-patch" is initiated either by the Harris C3 MaestroIP™ dispatch consoles or through the FIN system.

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3. SYSTEM IMPLEMENTATION PLAN

A. Contractors shall include a detailed System implementation plan in their proposal.

B. The System implementation plan shall include the complete installation, optimization, and testing of the infrastructure equipment comprised of repeater tower sites, microwave and fiber backhaul networks, base station repeater radios, trunked system controllers and network management systems, dispatch consoles and associated subscriber equipment.

C. All equipment furnished by the Contractor shall meet the requirements of this RFP and the manufacturers' published specifications, comply with all Federal, State, and Local laws, rules, regulations, and ordinances at the time of delivery, and reflect high quality workmanship throughout, and be suitable for the intended purposes delineated herein.

D. The Contractor shall include detailed plans of processes for tracking and controlling the Project in their proposal.

E. The Contractor shall include a high-level Project plan in their proposal for the overall Project schedule, work breakdown structure, project communications, quality assurance, change control procedures, project training, and a transition and cutover plan for each agency.

F. The Project plan shall be a dynamic document that shall be continually updated and evaluated as the Project progresses.

G. Within 60 days after completion of the Detailed Design Review, the Contractor shall provide a detailed Project plan and schedule

H. The County will work with the Contractor to determine the schedule for all radio programming of County and City agencies.

3.1 Project Communications Plan

A. The Contractor shall provide a communications plan in their proposal that includes contact information for the members of the project team and escalation procedures to be followed if there is an issue that may put the Project or a portion of the Project at risk.

B. The County shall require the Contractor’s Project Manager to keep notes of every meeting and to circulate them to the County project team.

C. The Contractor’s Project Manager will request feedback on the previous meeting’s minutes at the beginning of every project meeting and publish any clarifications.

D. The communications plan must show all levels of Project reporting throughout the Project lifecycle.

E. The County requires a regularly scheduled bi-weekly (every two (2) weeks) Project meeting or teleconference starting immediately after the Contract signing.

F. At the County’s discretion, the frequency of the regularly scheduled Project meetings or teleconferences shall increase in frequency to weekly as the pace of the Project escalates.

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G. As required, the County may schedule additional meetings.

H. Items to be included in the communication plan include the following at a minimum.

a. Project team contact information

b. Escalation procedure

c. Scheduled meetings

d. Meeting cycles

e. Meeting agendas

f. Meeting report sample

g. Required attendees by title (engineer, user, executive, etc.)

h. Project status reports

i. Status report sample

j. Status report cycle

k. Content to be provided in the status report

l. Status report recipients

m. Secure web site for document sharing

3.2 Project Schedule

A. Within 30 days after Contract execution, the Contractor shall provide a detailed Project Schedule that commences on the Contract execution date.

B. The Project Schedule shall include important milestones and logical breakpoints during which the County and the Contractor will assess the progress to date, and prepare for the remaining project tasks.

C. The first milestone of the Contractor's schedule shall be Contract execution. All other events shall be referenced in number of days from Contract execution.

D. The Project Schedule shall clearly identify the tasks to be performed by both the County and the Contractor including the following tasks and milestones:

a. Notice to Proceed

b. System Factory Staging completed and equipment shipped to the field

c. Completion of infrastructure installations at the fixed end locations

d. Infrastructure acceptance testing successfully completed

e. Technical, management systems, and user/operator training

f. Coverage testing successfully completed

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g. Test documentation submitted to the County

h. 60-Day Performance Period test successfully completed

i. System infrastructure accepted and warranty begins

j. Completion of the transition of all agencies to the system

k. Decommissioning and disposal of the old equipment

l. Project completion and Final System Acceptance

3.3 Extension of the Project Schedule

A. Installation and satisfactory operation of the system shall be completed within the time period established in the Contract.

B. Requests for Contract time extensions shall be considered as described in the Contract.

3.4 Work Breakdown Structure

A. Within 60 days after completion of the Detailed Design Review, the Contractor shall provide a work breakdown structure that provides a detailed listing of the physical work and tasks to be accomplished by the Contractor and the County consistent with the Contract.

B. The work breakdown structure may be a part of the Project Schedule, but it shall include, at a minimum, the following:

a. Task description

b. Responsibility for completion of work task

c. Date scheduled for completion

3.5 Quality Assurance Plan

A. The Quality Assurance Plan is a physical guideline of the steps taken to demonstrate that system implementation is proceeding in a manner that is consistent with the County expectations and industry standards.

B. Prior to Final System Acceptance, the Contractor shall provide the Quality Assurance Plan.

C. The Quality Assurance Plan shall include a narrative and/or photos of the acceptable final product of each phase of the installation and physical inspection points shall be indicated and include the following as a minimum guideline:

a. The system design review

b. System design documentation

c. Site development and construction

i. Civil work completed

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ii. Tower construction

iii. Equipment shelter foundations

iv. Equipment shelter installation

v. Grounding and bonding

vi. Electrical installation

d. Factory system and equipment staging

e. Equipment inspection and inventory

f. Steps of inspection throughout the implementation process

i. Before installing electronic equipment

ii. After installation of electronic equipment

iii. Before installation of antennas

iv. After installation of antennas

g. As-built documentation

h. Final System Acceptance

D. The County and the Contractor shall have the appropriate representatives inspect and approve the quality of work before moving to the next step and the inspection points shall be a part of the Project Schedule.

3.6 Transition, Cutover, and Fallback Plan

A. The proposal shall include a plan to transition agencies from the existing EDACS systems to the new system and the steps required to complete the cutover.

B. The Contractor shall clearly define their plan to provide a smooth transition/migration of the County users from their current EDACS system to the new P25 communication system, especially considering that both systems may share a common set of 800 MHz frequencies.

C. The Contractor shall provide a detailed transition and cutover plan within 60 days from the Detailed Design Review for County review and approval.

D. The proposal shall also include a plan to transition agencies from the existing Zetron Model 25 FSA RF system, the VHF Paging system, and the RMACS system to the new systems and define the steps required to complete the cutover.

E. The proposal shall also include a plan to transition systems from the existing microwave and fiber backhaul networks and channel banks to the new microwave and fiber IP backhaul networks.

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F. The Contractor shall consider the structural limitations of the towers when planning the transition/migration of microwave backhaul systems and 800 MHz and VHF antenna system loads.

G. During transition, an agency must not have communications on the existing system disrupted and the cutover shall be planned and scheduled in such a manner as to have minimal disruptions to agency operations.

H. The Contractor shall consider the use of gateways, radio patches, timing, training, and/or other methods to minimize disruptions to operations.

I. The cutover plan shall include a fallback plan to transition back to the old systems in the event that serious problems occur during each phase of the cutover phase.

J. The cutover plan shall include well-defined decision points for the County to determine if they are agreeable to the cutover of communications.

K. The County will work closely with the Contractor's Project Manager to develop a comprehensive and successful plan.

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4. COMMUNICATION SYSTEM REQUIREMENTS

4.1 General Overview

A. The Contractor shall propose and implement one 8-site (West side) and one 7-site (East side) linear simulcast, P25 Phase 1 and Phase 2 compliant trunked communications system.

B. In general, the County prefers a highly reliable system design with distributed intelligence that eliminates single points of failure in the network wherever possible.

C. The County prefers commercial off-the-shelf (COTS) hardware and software rather than proprietary radio system equipment.

D. The Contractor shall implement a countywide system comprised of two (2) simulcast cells configured in a similar manner that mirrors the current EDACS system.

E. Each simulcast cell requires geographical redundant control points and core sites.

   a. It is required that each simulcast cell be able to support two (2) or more control points and core sites in the most cost effective manner.

F. The Contractor shall integrate three (3) new tower sites into the simulcast network:

   a. The first site is the Plantation Bay tower site at 1250 Old Dixie Highway, Bunnell, 32174 shared with Flagler County

   b. The second site is the Farmton site that will be located at 3757 Maytown Road, Oak Hill, 32759 in the southern area of the County

   c. The third site is the existing DeBary site at 4901 Wayside Drive, Sanford, FL 32771 which will serve as both a stand-alone 5-channel trunked site and as a simulcast site.

G. The P25 communications system must provide improved radio coverage throughout Volusia County, including improved portable radio coverage within buildings in the defined polygon areas, and improved interoperability with surrounding agencies and technologies.

H. The EVENT system will remain a single-site cell and will be upgraded to P25 Phase 1 and Phase 2 operation, and integrated into the P25 system.

I. The current 5-channel DeBary P25 system is a Region 5 PSIC overlay that will remain a single-site cell and will be integrated into the P25 system.

   a. The current DeBary PSIC frequencies should be combined into the new simulcast antenna systems if frequency spacing permits.

J. The County intends to simulcast their VHF Fire Paging and 800 MHz regional mutual aid communication system (RMACS) channels.

K. The County intends to replace the current dispatch consoles.

   a. Thirty-seven (37) dispatch consoles will be located in the EOSCC, and

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b. One (1) console will be located at 49 Keyton Drive for a total of 38 consoles.

L. The County requires that the Contractor replace all existing radio consoles in a manner that does not affect the daily operation of the dispatch center.

M. Installation of the required cabling shall, likewise, be done in a manner that does not affect the daily operation of the dispatch center.

N. The display monitors at each dispatcher position must be compact LED-type (22 inch or larger) and capable of presenting real time alphanumeric display of pre-configured talk groups, call status, and per-call user identification.

O. The console system must be able to present alias information to the console operator.

P. The new communications system shall provide direct interoperability between participating agencies and shall be capable of interoperable communications at the CAI, and ISSI levels with surrounding P25 systems.

Q. The Contractor shall decommission and completely remove the existing EDACS system equipment upon written notification to proceed from the County.

R. The County intends to implement a new high-reliability, IP-based microwave backhaul network to replace their current network.

S. The County intends to implement a new -48VDC power plant at each of the tower sites for powering of all radio system and backhaul equipment.

T. To ensure a high level of system availability, the system shall be configured with distributed geo-redundant control and network equipment, and subsystems in key areas that affect the delivery of wide-area, trunked radio system communications such that a single point of failure shall not inhibit or otherwise interrupt wide-area communications including dispatch operations.

U. The Contractor shall clearly indicate in their proposal if diversity receive antennas are required to support P25 Phase 2 operation.

V. It is preferable that the proposed P25 system have the capability to share a single user Alias between multiple radios and the Contractor shall describe how this function would be configured and operate.

W. The Contractor's proposed P25 system shall support the State of Florida assigned LID address range of 5,400,000 through 5,499,000 for Volusia County as this will permit Volusia County to user the same LID on multiple P25 networks; the Contractor shall describe how this can be implemented and configured in the P25 radio system and how it will affect radio programming. The preferred programming process shall be simple and straight forward.

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X. The County requires that both simulcast cells appear as one system in the radio profile or template when viewed from the LCD display on the radio and the radio user shall never have to manually touch the radios to switch between simulcast cells.

Y. The radio subscriber or terminal platform must support Long Term Evolution (LTE) 4G at a minimum and WIFI for voice and data communications internal to the radio.

Z. The radio subscriber or terminal platform shall support AT&T's First Network Band 14 as well as other major carriers and the Contractor shall provide a list of brands and carriers supported.

AA. The Contractor shall state the highest data rate supported by the P25 system and describe any methods available on the P25 system to increase data throughput for GPS or other packet data.

BB. The Contractor shall provide complete description of all failover scenarios in their response including in the event of a simulcast system failure or control point or prime site failures.

CC. The Contractor shall describe in detail what happens in the event of a core or prime site failure and the transition time required to full system restoration.

DD. The Contractor shall furnish and install a commercial carrier interface that shall provide authorized smartphone users with a licensed client application to access talk groups on the Phase 1 and Phase 2 P25 communication systems. The desired functionality includes compatibility with IOS, Android and Windows 10 devices, and supports AES256 encryption from end user radios to the broadband device.

EE. The proposed P25 system shall provide seamless interoperability between P25 radio networks via an Inter-Sub-System Interface (ISSI).

a. The ISSI interface shall adhere to the 1022.BACA-B published standards

b. The Contractor shall describe how the proposed P25 network solution can be interfaced to other regional P25 networks now in operation, under development or in procurement planning as required by the ISSI specifications

c. The Contractor shall state how Automatic ISSI Roaming is supported among common and different manufacturer P25 systems

d. The Contractor shall describe whether its automatic roaming implementation requires additional bandwidth.

FF. The Contractor shall discuss whether its proposed system will support text messaging and whether the texts are archived.

4.2 APCO Project 25 Compliance

A. The system architecture shall conform to the objectives and user requirements outlined in the current APCO Project 25 standards (see TIA/EIA-102 family of specifications) in

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terms of digital modulation, spectral efficiency, enhanced audio quality, conventional and trunking modes and signaling, ID methodology, and direct interoperability with equipment from other system and equipment manufacturers.

B. The Contractor shall adhere to the P25 standards for all features that are included in the P25 TIA/EIA 102 specifications, but the County will accept Contractor-specific solutions for those features currently outside of the P25 scope.

C. The Contractor has the full responsibility to demonstrate P25 conformance for those subscriber and network infrastructure features contained in the P25 standards, while clearly delineating those features that have been developed with proprietary solutions.

4.2.1 P25 Compliance Assessment Program

A. Proposals shall include complete and comprehensive detail for all fixed network equipment P25 conformance testing for the systems and equipment being offered to the County.

B. All equipment that deviates from the P25 standards shall be clearly identified in the Contractor's proposal.

4.3 Trunked Simulcast Infrastructure System

A. The proposed design approach shall be modular in nature and provide the flexibility to readily add channel capacity and add tower sites to increase radio coverage.

B. The replacement system shall include replacement of the microwave backhaul network, all base stations and antenna systems, system synchronization, management and control systems, and replacement dispatch consoles.

C. To ensure a high level of system availability, the system shall be configured with distributed, redundant and geo-redundant control and network equipment and subsystems in key areas that affect the delivery of wide-area, trunked radio system communications such that a single point of failure shall not inhibit or otherwise interrupt wide-area communications including the dispatch console operations.

D. The County prefers that all virtualized products make use of VMware.

E. Linear Simulcast technology – As linear modulation is allowed by the P25 standard, the Contractor shall describe the features of its linear simulcast technology and the Contractor shall detail its effect on overlap zones, in-building and outdoor coverage, antenna choice, and audio quality.

4.3.1 Channel Capacity

A. The Contractor shall design the new P25 communications System A with a total of fourteen (14) trunked repeater channels.

B. The Contractor shall design the new P25 communications System B with a total of sixteen (16) trunked repeater channels.

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C. The Contractor shall design the new P25 EVENT communications System C with a total of five (5) trunked repeater channels.

D. The Contractor shall design the DeBary 5-channel P25 PSIC communications System D with a total of five (5) trunked repeater channels.

4.3.2 P25 Phase 1 and Phase 2 Operations

A. The entire P25 system infrastructure shall be designed, licensed, equipped, configured, and implemented to immediately and dynamically support both Phase 1 and Phase 2 transmissions on all base station channels, dispatch consoles, all system talk groups, and all user equipment provided under this RFP.

B. The system shall dynamically determine the most efficient way to process a P25 call without having to dedicate specific channels and talk groups to Phase 1 or Phase 2 radios.

C. The County's long-term goal is for all County system users to operate in the Phase 2 mode.

4.3.3 Trunked ISSI Connections

E. The Contractor shall provide an Inter RF Sub-system Interface (ISSI) that meets P25 standard requirements.

F. The ISSI shall support manual and automatic roaming.

G. The Contractor shall describe in their proposal any operational and functional limitations on automatic roaming when connected to an ISSI from the same or a disparate system manufacturer.

H. The Contractor shall identify in their proposal their specific system implementations where automatic roaming between their system and systems from the same or a disparate system manufacturer have been implemented.

I. The Contractor shall be able to provide automatic roaming with the same or a disparate system manufacturer, at the date of their proposal.

J. The Contractor is required and shall be prepared to demonstrate prior to award to County personnel, their automatic roaming operation where automatic roaming between their system and systems from the same or a disparate system manufacturer have been implemented.

K. The ISSI shall have the ability to support a minimum of six (6) simultaneous connections.

L. Connectivity to the State of Florida Radio System is dependent on direction from the State and state-provided funding.

M. The Contractor shall provide the system with five (5) ISSI connections to each master core to support ISSI connections to the following counties.

a. Flagler County

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b. Putnam County

c. Seminole County

d. Brevard County

e. Lake County

N. The Contractor shall provide in their proposal all hardware, software, and firmware licenses necessary to make operational the five (5) ISSI connections above.

O. The ISSI shall support a minimum of twenty (20) concurrent talk-paths across each connection.

P. The Contractor shall provide, in their proposal, line item pricing for each additional ISSI connection.

Q. The Contractor shall describe in their proposal, in technical and operational detail, the system features and functionalities that are available for users on each system when they are interconnected through an ISSI, including any operational and functional limitations imposed by the ISSI connection.

R. The ISSI shall meet the following minimum functional requirements:

a. Talk group Call

b. Emergency Call

c. Encrypted Voice

d. P25 Phase 1 Vocoder

e. Manual Inter-WACN Roaming

f. Manual Inter-system Roaming

g. Automatic Inter-WACN Roaming

h. Automatic Inter-system Roaming

i. Automatic Intra-system Roaming

j. RFSS Service Capability Polling

k. Transport of PTT-ID

l. Priority Call

m. Emergency Alarm

n. Emergency Alarm Cancellation from one (1) system (Alarm cancellation on interoperability talk groups must be done from one (1) system and filtered to other systems involved so that the alarm only needs to be cleared by one jurisdiction)

o. Group Emergency Alarm

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p. Busy Processing (Busy Queuing and Callback)

q. Subscriber Unit Registration

r. Transport of Authentication Credential

s. Secure Subscriber Unit Registration

t. Subscriber Unit Deregistration

u. Group Affiliation

v. Call Restriction

S. The ISSI may meet the following requirements; please indicate your level of compliance in your response:

a. Selective Call

b. Selective Alert ("Call Alert")

c. P25 Data

d. Short Message / Pre-Programmed Data Message

e. Radio Check

f. Radio Monitor

g. Radio Inhibit/Uninhibit

h. Radio Status Query/Status Update

i. Over-the-Air Rekeying

j. Text Messaging

k. Priority Level Access and Queuing

l. Emergency Preemption (Ruthless Preemption)

m. Dynamic Regrouping

T. The Contractor shall include a listing of the current features supported by their ISSI interface.

U. The Contractor shall include in their proposals some examples of systems where they have connected other manufacturers' P25 systems via ISSI.

V. The County's goal and requirement is that after an initial talk group assignment by the Dispatch Center that the First Responder selects that talk group, and then does not have to further select another talk group when transiting between other vendor P25 network systems.

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4.3.4 P25 Talk Group and User ID Capacity

A. The system shall have the capacity to support, at a minimum, 16,000,000 individual user IDs, without additional hardware.

B. There shall be no licensing costs associated with individual user IDs. This shall include day-to-day users and interoperability users. The Contractor shall affirmatively state in its response that all licensing costs are included in this proposal and that the County may add at no cost up to 16,000,000 user IDs to the system, over the full life of the system, as required to support the County's and its interoperability partners' needs.

C. The system shall be equipped, licensed and configured to support a minimum of 2,000 talk groups and have the capacity to support, at a minimum, 5,000 talk groups without additional hardware.

4.4 Tower Sites and System Infrastructure Equipment

W. The System A communication system base station repeater tower site equipment shall be located at the following tower site facilities:

a. Pierson

b. De Leon Springs

c. DeLand-FDOT

d. Orange City

e. Deltona

f. DeBary

g. Farmton (To be built as part of this RFP)

h. EOC-A

X. The System B communication system base station repeater tower site equipment shall be located at the following tower site facilities:

a. Plantation Bay (Flagler County site to be added as part of this SOW)

b. Ormond Beach

c. EVAC

d. EOC-B

e. Port Orange

f. New Smyrna Beach

g. Edgewater

Y. The following table is a summary of the communications system communications system sites:

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Tower Site	Coordinates	ASR	Structure (ft)	Overall (ft)
Plantation Bay	29-24-11.0 N 081-10-39.0 W	1310365	320	350
Ormond Beach	29-17-07.0 N 081-04-01.4 W	1029742 (Crown)	253	267
EVAC	29-13-36.8 N 081-02-01.4 W	1203757 (New Cnglr)	298	310
Pierson	29-12-56.5 N 081-27-01.1 W	1207957 (Crown)	284	304
EOC-A	29-08-24.3 N 081-08-43.9 W	1265910 (County)	320	340
EOC-B	29-08-13.0 N 081-08-38.3 W	1030518 (Crown)	305	325
Port Orange	29-07-18.0 N 081-01-03.0 W	1029729 (Crown)	284	297
De Leon Springs	29-07-12.7 N 081-19-26.7 W	1040443 (ATC)	285	313
DeLand FDOT	29-01-01.0 N 081-18-09.0 W	1062081 (State of Florida)	267	285
New Smyrna Beach	29-00-59.0 N 080-56-30.0 W	1030513 (Crown)	180	186
Edgewater	28-57-18.17 N 080-53-19.79 W	1203405 (County)	250	264
Orange City	28-56-13.5 N 081-17-32.2 W	1203437 (County)	350	375
Deltona	28-52-20.7 N 081-09-58.5 W	1269078 (County)	300	320
DeBary	28-48-40.2 N 081-20-25.3 W	None	180	200
Farmton Greenfield	28-48-43.95 N 080-57-40.41 W	TBD	320	345

Table 1 - P25 Tower Sites

Z. The coordinates of the Farmton Greenfield site tower in Table 1 above are preliminary and may change pending the final location.

4.5 800 MHz Frequency Plan

AA. The County has a large inventory of 800 MHz-only, P25 capable, trunked user equipment that must be utilized on the new P25 system.

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BB. The Contractor shall utilize the frequency plans listed below developed by the County. These plans are based upon the implementation of existing County 800 MHz frequencies.

Tx	Rx	Tx	Rx
855.2125	810.2125	855.7375	810.7375
856.7375	810.2125	856.7625	811.7625
857.2625	812.2625	857.7375	812.7375
855.9875	810.9875	858.7125	813.7125
858.7625	813.7625	859.4875	814.4875
859.7375	814.7375	860.2625	815.2625
860.7125	815.7125	860.7625	815.7625

Table 2 - System A Frequency Plan

Tx	Rx	Tx	Rx
856.2625	811.2625	857.4875	812.4875
856.9875	811.9875	858.7375	813.7375
857.7625	812.7625	859.2625	814.2625
858.4875	813.4875	859.7625	814.7625
859.7125	814.7125	860.7375	815.7375
860.4875	815.4875	854.3625	809.3625
855.4625	810.4625	856.9375	811.9375
856.4875	811.4875	858.2625	813.2625

Table 3 - System B Frequency Plan

Tx	Rx	Tx	Rx
856.7125	811.7175	857.2125	812.2125
858.2125	813.2125	859.2125	814.2125
860.2125	815.2125		

Table 4 - EVENT System C Frequency Plan

Tx	Rx	Tx	Rx
853.5125	808.5125	852.8250	807.8250
853.8000	808.8000	853.2000	808.2000
851.7750	806.7750		

Table 5 - DeBary Site PSIC System D Frequency Plan

4.5.1 Intermodulation Analysis

A. Prior to implementation and for each tower site, the Contractor shall perform an intermodulation analysis for all County frequencies deployed at each tower site.

B. The Contractor shall perform an interference analysis for all predicted intermodulation hits up to and including 5th order products.

C. The Contractor shall provide in writing the results of the analysis to the County.

4.6 Network Control Point Equipment and Sites

CC. The communications system network control point equipment shall be mounted in freestanding equipment racks or equipment cabinets, and shall be provided in a

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geo-redundant, fault-tolerant configuration with redundant components including power supplies.

DD. All communications system control point equipment shall be integrated to the Network Control and Management System and provide self-diagnostics and alarms when faults are detected.

EE. The communications system control point equipment shall be located at County facilities as listed in subsections 4.6.1 Master Core Equipment, .4.6.2 Simulcast Control Point System A, 4.6.3 Simulcast Control Point System B.

4.6.1 Master Core Equipment

FF. A geo-redundant master core shall be located at the EOSCC in the I.T. equipment room.

GG. The geo-redundant secondary master core shall be located at the EOC-A Control Point equipment room at 49 Keyton Drive.

HH. The County shall require that master core equipment function in a hot standby mode with transition to the secondary core upon failure of the primary to be less than 30 seconds.

II. Database synchronization shall occur to provide data consistency and immediate update between the databases when switching between the primary and secondary cores. The Contractor shall describe how this is accomplished in their system.

4.6.2 Simulcast Control Point System A

JJ. The primary control point for System A shall be located at the EOC-A Control Point equipment room at 49 Keyton Drive.

KK. The geo-redundant control point for System A shall be located at the Orange City tower site.

4.6.3 Simulcast Control Point System B

A. The primary control point for System B shall be located at the Port Orange Tower site.

B. The geo-redundant control point for System B shall be located at the EOC-B radio tower site.

4.6.4 Receiver Voting Systems

A. The Contractor shall clearly describe how their “voting technology” functions, the voting time interval, and the effect on voice quality.

4.7 System Reliability, Redundancy, and Backup Requirements

4.7.1 Single Point Failure Modes

A. The Contractor shall design their proposed system to prevent the loss of wide-area trunked communications due to any single point failure within the system.

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B. The Contractor shall demonstrate in their proposal that their proposed system design will not suffer a loss of wide-area trunked communications due to any single point failure within the system. The remaining sites shall continue to provide trunked simulcast communications. Fallback to conventional radio operations is not acceptable.

C. The Contractor shall describe how security is maintained if a core or simulcast site fails, and how authentication is maintained. How is the user validated under these circumstances?

4.7.2 Simulcast Site Failure

A. In the event of the failure of one (1) or more simulcast tower sites within a simulcast cell, the remaining simulcast sites within the simulcast cell shall maintain full trunked operation.

4.7.3 Simulcast Base Station Failure

A. Should a single base station (repeater) fail, the site shall continue to operate in the trunked mode and the failed channel shall be removed from the trunked pool of frequencies.

4.7.4 Control Channel Reliability

A. In the event that the control channel of a simulcast cell or single-site fails, the failure shall be detected and any of the remaining channels shall be automatically assigned to transmit the control signaling.

B. The failed channel shall be automatically removed from service and be reported to the network management alarm monitoring computer.

4.7.5 Dispatch Console System Failure

A. The console system shall be equipped with a number of self-diagnostic subsystems that shall continuously monitor and verify the correct operation.

B. Diagnostic capability shall be distributed among independent and redundant subsystems and shall not rely upon one central diagnostic circuit.

C. Should a fault be detected, the supervisory consoles shall be notified via the Network Monitoring and Control System.

D. Redundant equipment shall be automatically activated, and diagnostic information shall be logged.

E. Diagnostic messages displayed shall be presented in an easy to understand format.

F. Diagnostic systems that require the dispatch supervisor to cross-reference an error code to a fault message shall not be acceptable.

G. In the event of the failure of one (1) or more console operator positions, the remaining dispatch console operator positions shall maintain full operation.

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4.7.6 Dispatch Console Fallback

A. When link connectivity is lost to the P25 simulcast network, a link failure message shall prominently appear on all operator and supervisor console displays to notify them that the console system is no longer in contact with the radio infrastructure system.

B. The console system shall maintain connectivity and functionality with local network resources such as conventional interfaces, gateways, and control stations.

C. The operator shall be able to select the desired talk group on a backup control station or portable radio to communicate with field personnel.

D. The Contractor shall include descriptions of failure scenarios and discuss all redundant features that include dual circuitry and network components, switchover circuitry and the outage time to accomplish switchovers.

E. An alarm indicating that the failure and switchover occurred shall be reported at the supervisor consoles.

4.7.7 Infrastructure Power Systems Failure

A. In the event of the failure of commercial power, the trunked system infrastructure and dispatch consoles shall be powered by a suitably sized uninterruptible power source of sufficient capacity to maintain full operation of the equipment during the transition to the backup power generator system.

B. The requirements for the uninterruptible power systems (UPS or DC Power Plant) are defined in Section 11.

4.7.8 Catastrophic System Failure

A. Should a portion or the entire trunked radio system fail to the point that wide-area trunking can no longer be maintained, then the trunking system shall revert to what is commonly known as a “site trunking” or in some cases a "failsoft" mode of operation.

B. Contractors shall fully describe in their proposals their various fall back scenarios in the event of losing wide-area simulcast trunking and for individual site failures.

4.8 Trunked System Functional Requirements

4.8.1 P25 Data Communications

A. The system shall be equipped and licensed to provide P25 data services to support data communications with subscriber equipment for features such as over-the-air-rekeying (OTAR), over-the-air-programming (OTAP), and other features such as text messaging and AVL that require data communications.

B. The Contractor shall provide pricing in Exhibit B for P25 Data in their proposal.

C. Speech Encoding Vocoder technology – The County is aware that P25 radios using different digital protocols may want to communicate with each other. The Contractor

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shall describe how its system handles different vocoder technologies and which vocoder types it supports.

4.8.2 Voice Encryption

A. The system infrastructure shall support Advanced Encryption Standard 256 (AES256) end-to-end digital voice encryption for all dispatch consoles, voice logging recorders, and for properly-equipped user equipment.

B. The Contractor shall provide pricing in Exhibit B for P25 AES256 encryption in their proposal for a total of 100 encrypted talk groups.

C. The Contractor shall identify whether its system will permit a radio using DES encryption to communicate with a radio using AES256 encryption.

4.8.3 Over-the-Air-Rekeying

A. The system shall be capable, configured and operable for Over-The-Air-Rekeying (OTAR) of the AES256 encryption algorithms.

B. The Contractor shall describe their system's capability for OTAR, including any limitations that rekeying subscribers over-the-air has over traditional methods, and describe the process by which the rekeying takes place and the timeframe required to rekey an individual radio and a group of 100 radios.

C. The Contractor's description of this process should include all factors affecting the timeframe required to complete the rekeying of the 100 radio example.

4.8.4 Over-the-Air Programming

A. The County is interested in programming subscriber radio code plugs "Over-the-Air" (OTAP) to reduce the amount of time and effort required in making changes to the radio fleet in the event of system changes or expansions.

B. The Contractor shall describe their system's capability for OTAP (P25, Wi-Fi, LTE), including any limitations that programming of subscribers over-the-air has over traditional methods.

C. The Contractor shall describe the process by which the reprogramming takes place and the timeframe required to fully reprogram an individual radio and a group of 100 radios based upon the expected size of the radio programming.

D. The Contractor shall describe any capability to perform differential reprogramming where only a portion of the radio's programming is changed and the timeframe required to differentially program a small programming change of an individual radio and a group of 100 radios (provide explanation of the small programming change used in calculations).

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E. The Contractor shall provide a complete listing of the programming capabilities of their OTAP offering including the programming of subscriber equipment personalities and flash firmware code plugs.

F. The Contractor shall include in their response how subscriber radios from other manufacturers can be programmed via OTAP.

G. The Contractor shall provide pricing for OTAP in their proposal.

4.8.5 GPS and AVL (Optional)

A. The Contractor shall describe their system's capability to support GPS.

B. The Contractor shall include all required system hardware to provide GPS data as an Application Programming Interface (API) that can be used by manufacturers of CAD, GIS, etc.

C. The Contractor shall provide a complete listing of the capabilities of their GPS offering including the minimum location refresh rate required for a group of 100 users, and the ability to manually "ping" a unit from dispatch to acquire its present location.

D. The Contractor shall include in the proposal the associated licenses to enable each available option for all subscriber radios.

E. The County prefers an in-band GPS capability in which GPS information is sent as part of the actual call data and audio transmission.

F. GPS and AVL shall be performed via P25 standards based data calls and compliant with P25 Tier 2 Location Services.

G. The Contractor shall include optional pricing for enabling proprietary modes to improve GPS/AVL throughput for system and subscribers, such as Enhanced Data, Location-on-PTT, and Location-on-Receive.

H. The County desires an easy-to-use application, which is GIS based, that allows personnel to identify geographic areas on a map of Volusia County and display the location of GPS-enabled radios in that area. Historical data and Presence information would be valuable features of this application.

I. The Contractor shall describe the "Presence" capabilities of its P25 radios and system.

4.8.6 P25 System Features and Services

A. The Contractor's proposed P25 system shall support all P25 specifications including ISSI.

B. The Contractor shall identify any specifications that they do not currently support, and provide the date that the specification will be available.

C. The proposed system shall be able to provide public safety features and services based upon the most current P25 guidelines.

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D. The proposed system shall provide the following functions and services at a minimum:

a. Affiliation
b. Announcement Group Call
c. Broadcast Voice Call
d. Busy Queuing and Call Back
e. Call Alert
f. Call Interrupt
g. Call Restriction
h. Call Routing
i. Channel Marker
j. Continuous Assignment Updating
k. Discreet Listening
l. Dynamic Regrouping
m. Emergency Call
n. AES256 Encryption
o. Group Voice Call
p. Individual Voice Call
q. Misdirected Radio Protection
r. Multiple Algorithms
s. Multiple Key Encryption
t. Multiple Priority Levels
u. Out-of-Range Indicate
v. Over-the-Air Rekeying
w. Priority Call
x. Recent User Priority
y. Preemptive Priority Call
z. Radio Check
aa. Radio Unit Inhibit
bb. Radio Unit Uninhibit
cc. Radio Unit Monitoring

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dd. Registration

ee. Roaming

ff. Silent Emergency

gg. Status Request

hh. Status Update

ii. System Call

jj. Talk Group Call

kk. Talking Party Identification

ll. Talk Prohibit Tone

4.8.7 Interoperability with Legacy and Conventional Systems

LL. The Contractor shall describe in their proposal, in technical and operational detail, how their proposed system will provide the County's P25 users, interoperability with users on legacy and conventional systems.

MM. At a minimum, these interfaces shall include functionality for the following:

a. Fixed Station Interface

b. New control station radios connected to the dispatch console systems to communicate with users on disparate systems

c. Future 2-wire and 4-wire tone-controlled wireline base stations

d. Local PTT/COR/E&M control for local base stations

e. Other 2-wire and 4-wire analog sources

4.8.8 Commercial Carrier Smartphone Interface

A. The Contractor shall furnish and install a commercial carrier interface that shall provide authorized smartphone users with specially equipped cellular smartphone handsets to access talk groups on the P25 communication system.

B. The Contractor shall support the proposed smartphone commercial carrier solution in a redundant, high-availability configuration from both the primary and the redundant system master core control points. The smartphone server shall be redundant and communicate across both cores.

C. The Contractor shall provide in their proposal a comprehensive technical and operational description of their offering.

D. The Contractor-proposed smartphone commercial carrier solution shall be capable of supporting a minimum of 2000 smartphone users.

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E. The Contractor shall provide in Exhibit B a listing of the costs for all required hardware, software and licensing fees for a quantity of one-thousand (1000) smartphone users that would have access to 80 total talk groups consisting of a minimum of 20 encrypted talk groups.

F. The Contractor shall provide in Exhibit B a listing of the costs for additional blocks of 100 users and 10 talk groups.

G. Additionally, the Contractor shall state whether the software licensing is per concurrent user or per individual unit, and whether the license is perpetual in term or not.

H. It is desired that the Contractor-proposed smartphone commercial carrier solution will support real-time video streaming. The Contractor shall provide a detailed description of its video streaming capabilities for its commercial carrier smart phone interface.

4.9 Trunked and Conventional Base Station Repeater Equipment

A. All base station repeater equipment shall be certified to be FCC type accepted and meet all applicable FCC technical standards and the Contractor shall provide the FCC type acceptance numbers in their proposals.

B. All trunked and conventional base stations and repeaters shall be rated for a transmitter power output of 100 watts and be capable of operating at a 100% duty cycle at the full rated transmitter power output.

C. All trunked base stations and repeaters shall be of the same model and power rating.

D. All conventional base stations and repeaters shall be of the same model and power rating.

E. All trunked stations shall meet the performance standards and specifications as specified in TIA-102.CCAB and performance recommendation.

F. The trunked repeater base stations shall be capable of supporting the radio frequency signals and modulation modes defined in the P25 Standard for Phase 1 and for Phase 2 modulations.

G. The trunked repeater base stations shall support linear simulcast modulation modes for Phase 1 and for Phase 2 modulations.

H. All trunked repeaters shall be configured to be powered from the new -48 VDC power system.

I. The Contractor shall provide extensive specifications and documentation for the proposed base station equipment and related systems such as:

   a. Station construction details (enclosure type, chassis type, etc.)

   b. Transmitter specifications

   c. Receiver specifications

   d. Tuning procedures

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e. RF devices such as isolators, filters, duplexers, shielding, transmitter combiners, receiver multi-couplers, tower top amplifiers

f. Station ID devices

g. Power supplies

4.9.1 Precision Frequency Source

A. The precision frequency source shall be redundant, and shall be provided at each simulcast site to stabilize frequency synthesizers in the repeater base stations, and to provide synchronization of simulcast transmission equipment.

B. The precision frequency source shall be a redundant "off-the-air" GPS frequency locked source.

C. The precision frequency source shall be capable of maintaining the proper frequency stability and synchronization of the system upon failure/loss of the primary GPS reference signal receiver.

D. The Contractor shall state in their response the hold time and frequency source that will be utilized when GPS synchronization is lost. The precision frequency source shall be provided with redundant power supplies.

E. The GPS frequency source systems alarms shall be integrated to the Network Control and Management System.

4.10 800 MHz Antenna Systems

A. The Contractor shall furnish and install the antenna systems at each of the tower sites including all antennas and mounts, pigtails, transmission lines, ground kits, surge suppressors, and transmitter combiners.

B. The antenna systems for the two (2) P25 simulcast cells shall include at a minimum, the following antenna system configurations:

a. The implementation of a minimum of two (2) transmit antennas and two (2) transmitter combiner systems at each tower site

b. The implementation of a receive antenna system, tower-top preamp and receiver multicoupler systems at each tower site

C. The antenna systems for the RMACS and the EVENT systems shall include at a minimum, the following antenna systems configuration:

a. The implementation of omni-directional transmit and receive antenna systems at each tower site

b. The implementation of a minimum of one (1) transmit antenna and transmitter combiner systems at each tower site

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c. The implementation of a minimum of one (1) receive antenna system, tower-top preamp and receiver multicoupler systems at each tower site

D. All base station antennas and transmission lines shall be furnished with 7/16-inch DIN connectors wherever possible.

E. The Contractor shall furnish low PIM model transmit and receive antennas wherever possible with DIN connectors.

F. Adapters in any transmission lines are not permitted and will be rejected.

4.10.1 Transmission Lines

A. The Contractor's transmit and receive antenna systems design shall utilize at a minimum, solid-jacketed, 1-5/8-inch transmission lines for transmit and 7/8-inch transmission lines for receive where tower-top preamp systems are used.

B. The transmission lines for the tower-top-preamp test ports shall be solid-jacketed 1/2-inch.

C. All transmission lines and interconnecting jumpers shall be continuous length, 100% shielded, foam polyethylene dielectric, UV resistant, as manufactured by CommScope, or a County-approved equivalent, and sized as required to meet the Contractor's engineering specifications.

D. Connectors shall be properly installed and shall match the appropriate mating connectors.

E. Splices or adapters in any transmission lines are not permitted and will be rejected.

F. Standard stainless bolt-in hangers shall be used and snap-in hangers are not acceptable without County approval.

4.10.2 Transmitter Combiner

A. The Contractor shall provide transmitter combiners at each tower site and any spare ports shall be properly tuned and terminated.

B. Repeater-to-combiner RF interconnect cables shall be ½-inch Superflex minimum or approved equivalent.

C. Combiner-to-bulkhead RF interconnect cables shall be ½-inch LDF minimum or approved equivalent.

D. Low-loss transmitter bandpass filters shall be provided on each combiner output at all sites where the transmit and receive antennas are mounted at the same height and vertical separation cannot be achieved.

E. The Contractor shall submit their proposed combiner plan in their proposal.

F. The proposal shall state the manufacturer and model numbers of the combiners and filters proposed for each site and provide the complete specifications including insertion losses per port.

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4.10.3 Receiver Multicoupler

A. The Contractor shall provide a receiver multicoupler and tower-top preamplifier system for each receive site.

B. The multicoupler system shall consist of a redundant tower-mounted preamp, preselector filter, tower-top amplifier test port, and equipment shelter based receiver distribution system including power supply and associated controls.

C. Receiver-to-multicoupler RF interconnect cables shall be ¼-inch Superflex minimum or approved equivalent.

D. Multicoupler-to-bulkhead RF interconnect cables shall be ½-inch LDF minimum or approved equivalent.

E. The tower-mounted preamplifier shall be redundant, and it shall be possible to switch the "main" or "backup" preamp into service or bypass them altogether from the switching controller located in the shelter.

F. The tower-mounted preamplifier shall provide a failure mode where the preamps are bypassed in the event of a failure of both preamps.

G. The tower-top amplifier test port shall allow the preselector input to be transferred to an internal termination load for testing purposes.

H. An internal coupler and a front panel mounted test port shall be provided to permit injection of test signals between the termination and the preselector filter.

I. The antenna multicoupler systems shall be expandable to accommodate 25% growth beyond the channel requirements of the fully implemented communications system.

J. The receiver multicoupler system shall be integrated to the Network Control and Management System for alarm monitoring purposes.

4.10.4 800 MHz Test Antenna

A. The Contractor shall furnish and install a test antenna system at the Plantation Bay and Farmton tower sites including all antennas and mounts, pigtails, transmission lines, ground kits, and transmission line surge suppressors.

B. The test antenna system shall consist of a low gain fiberglass antenna, dbSpectra DS8A03F36U-N or approved equivalent, solid-jacketed, 1/2-inch LDF transmission line, and a transmission line surge suppressor, PolyPhaser IS-50NX-C2 or approved equivalent.

C. The test antenna system shall be installed on the tower at the same elevation as the P25 receive antenna.

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4.11 Network Control and Management System

NN. The Contractor shall furnish and install a Network Control and Management System (NCMS). The NCMS shall provide system administrators with access to databases for data entry and retrieval, record keeping, adjustment of the system operating parameters, and system usage statistics.

OO. The NCMS shall support multiple users and a minimum of four (4) concurrent sessions including remote access users.

PP. The NCMS user terminals shall be installed at the following County locations:

a. The IT computer room at the EOSCC

b. The EOC-A Control Point equipment room at 49 Keyton Drive, Daytona Beach, Florida

QQ. The NCMS shall provision and monitor the integrity of all major communications system components and subsystems, and routinely poll system devices to determine their status.

RR. This shall include, but not be limited to, the trunked system controller status, system and equipment diagnostics, fault reporting and alarms.

SS. The NCMS shall allow operators to create, change, and delete items such as sites, talk groups, aliases, channels, and updating subscriber units.

TT. The NCMS and user terminals shall be powered from 120 VAC 60Hz and be equipped with a UPS backup with a 30-minute run time minimum.

UU. The NCMS and user terminals shall be equipped with 22-inch LCD display monitors.

4.11.1 Remote Access

A. The system shall provide the County access to the NCMS from remote locations including infrastructure sites on the proposed backhaul network and external unspecified locations.

B. Access shall be possible using a Windows-based computer.

C. The Contractor shall provide in their proposal a detailed description of the remote access capabilities of their proposed system and clearly depict the functionality available via remote access, the method of connectivity proposed, and the security measures provided to prevent unauthorized system access.

4.11.2 NCMS Network Security

A. The Contractor shall provide in their proposal a detailed description of their proposed security measures to protect physical network components (routers/switches, buildings, etc.) and how the network and the information on the network will be kept secure.

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B. The Contractor shall describe its complete security and disaster recovery process that shall include virtualized snapshot, backup and recovery of servers, anti-virus and security updates, and router security updates.

C. The Contractor shall describe the process of isolating software-based malware including the estimated time to recover a server and data.

D. The County shall require that any NCMS Internet-facing servers receive hourly anti-virus updates from the Contractor's proposed supplier.

4.11.3 System Manager Access Levels

A. The NCMS system management application shall have multiple levels of security access. The system management function shall be password protected and keep a log of all login and entries into the system by date, time, and authorized individual.

4.11.4 Database Partitioning

A. The NCMS system management application shall be capable of partitioning the database such that different managers have secure access and control over the units and groups for which they have been authorized.

4.11.5 Communication System Failure Notification and Alerting

A. The NCMS system shall provide the capability for e-mail and text alerts to be sent to designated administrators and personnel when critical failures occur on the communications system.

4.11.6 System Database Management

A. The NCMS system shall maintain a System database of system configuration information, such as talk group configurations and radio ID ranges.

B. The System database shall be maintained to simultaneously store and update system user profiles such as user group access, priority levels, dynamic regrouping plans, authorization codes, call statistics, traffic recordings for each radio, talk group, fleet map and agency, etc.

C. The Contractor shall provide a detailed list of the data and information types kept in its System database.

D. Additionally, whenever a field unit is powered on and is within radio coverage of the communication system, the unit's discrete address and user group selection shall be recorded into the system database.

E. The System database shall permit user defined sorting of calls by units, groups, time of day, duration of call, channel, site, and priority.

F. The System database shall be continuously backed up in real time, and the backup System database shall act as a "fault tolerant" database that is automatically kept current.

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G. Should there be a failure with the System database, the backup System database shall automatically be activated for system access with no drop in service.

H. The System database shall have sufficient capacity to store all system profiles, as well as the capacity to store a minimum of 365 days of system activity for report generation.

4.11.7 Lucity (Central Square Technologies) Database

A. The County is developing a Lucity™ database to track maintenance and inventory changes in the Contractor's core database. The primary purpose of the Lucity™ database is to track radio maintenance activities and document radio inventory at all times. The County's intention is that county and city agencies and radio system vendor will be able to manage their own radio inventories and obtain up-to-date software and hardware maintenance information by accessing the Lucity™ database. The County will locate the Lucity™ database in the DMZ area of its data network.

   a. The Contractor shall make this data available to the County at all times.

B. The Contractor shall describe the process of how the County can access the information in the System database and extract data into the Lucity™ database .

   a. The Lucity™ application is based on Microsoft SQL Server and is an application that is used to manage and maintain assets and manage maintenance activities.

   b. The County currently downloads the SQLdatabase from the Harris Communications System Director (CSD) every night and imports it into Lucity™ .

   The County currently pulls the following data fields from the Harris CSD:

Unique_Id
Unit_Name
Unit_Type
Template_Unique_Id
Home_Network
Home_Node
Home_Group
Home_Agency
Home_Fleet
Home_Subfleet
Dedicated_Line
Operator
Agency
Department
Equipment
Software_Version
Serial_Number
Physical_Id
Asset_Number

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Property_Asset
Description
Last_Modified_By
Last_Modified_At
Node_Unique_Id
Unique_Id
Unit_Name
Unit_Type
Template_Unique_Id
Home_Network
Home_Node
Home_Group
Home_Agency
Home_Fleet
Home_Subfleet
Dedicated_Line
Operator
Agency
Department
Equipment
Software_Version
Serial_Number
Physical_Id
Asset_Number
Property_Asset
Description
Last_Modified_By
Last_Modified_At
Node_Unique_Id

4.11.8 Alias Database Management

A. The NCMS system shall include functionality that provides a single alias database and update process for all system, consoles, and subscribers.

B. It is not acceptable to require the County to maintain separate alias databases for consoles and subscribers and have multiple processes to update the alias database in these components.

C. The Contractor shall describe the alias database functionality and update process in detail in their response.

D. The Alias Database shall be able to associate a single Alias with multiple P25 communication devices.

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4.11.9 System Management Report Generation

A. The NCMS system shall include a monitoring/management terminal, with software that allows for detailed system and summary reports, individual radio reports and other customized radio reports based upon a given set of parameters.

B. System status information shall be accessible from the system management terminals.

C. The system manager application shall be capable of generating system management reports to provide management personnel with pertinent system information and reports to make informed decisions regarding the system capacity and grade of service, and the operational effectiveness of the various components of the communication system.

D. The system shall be capable of archiving a minimum of 365 days of data and reports and shall include at least 12 months of system activity.

E. The Contractor shall provide in their proposal a detailed description of the standard and optional reporting capabilities, including the ability to create ad-hoc reports of their proposed system and include 1-page samples of each report.

F. Describe the reporting system administrative security model that supports database partitioning.

4.11.10 System Ancillary and Site Alarms, and Controls

A. Authorized personnel shall be able to query and retrieve alarm conditions pertaining to the alarm status of the communication systems and equipment.

B. When activated, the alarm system shall provide audible and visual notice on the NCMS computers located at 49 Keyton Drive and the EOSCC IT equipment room.

C. The NCMS system management and monitoring terminals shall be equipped with a minimum of 22-inch display monitors.

D. The NCMS system shall include the ability to alert service personnel via email and text messaging.

4.11.11 Remote Terminal Units

A. The County has DPS Telecom NetGuardian remote terminal units (RTU) at each site. The County intends to keep the NetGuardian RTUs in operation for monitoring of the existing environmental alarms. The County operates a separate network management system for monitoring of the alarms.

B. The Contractor is not required to interface the NetGuardian RTUs into the Contractor's NCMS.

C. The Contractor shall provision the necessary VLAN on the new backhaul network to support the existing NetGuardian RTUs and coordinate with the County to migrate the RTUs to the new backhaul network.

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D. The Contractor shall coordinate with the County for any system alarms from the proposed system requiring an RTU interface at each communications site.

E. At all communication sites, the Contractor shall furnish and install an RTU demarcation punch block at each communications site and cross-connect the local site alarms to the RTU.

F. Any alarm conductors that connect to equipment located outside of the equipment shelter shall be protected by an appropriately-rated surge suppression device, installed as close as reasonably possible, to the location where these conductors enter the equipment room or shelter.

4.12 Conventional and Analog System Interface Gateways

A. The new P25 communication system shall be equipped with interface gateways that will generally perform the functions of the centralized UACs.

B. The gateways shall be collocated with the analog radio equipment at the communication sites and be connected to the new IP-based backhaul network.

C. The Contractor shall furnish and install conventional channel and analog interface gateways to facilitate the connection to the P25 communication system.

D. The conventional channel and analog interface gateways shall be configured to support the system resources currently supported by the UACs as depicted in Appendix B: Universal Audio Card Connections.

E. The County understands that some of the individual resources presently connected to the UACs will change because of the requirements for simulcasting of the VHF Fire Paging and the RMACS radio channels.

F. The Contractor shall be responsible for the provision and implementation of the conventional channel and analog interface gateways.

G. The Contractor shall provide four (4) spare conventional gateway ports at each tower site with analog equipment for future growth.

4.13 Primary FSA 800 MHz Analog Simulcast System

The County will consider two options for replacing the Primary Fire Alerting System over EDACS. Option 1 will be a Simulcast VHF system and Option 2 will be fire alerting over the P25 Phase 2 radio system. The County will select the desired option during negotiation of the Contract.

4.13.1 Simulcast 800 MHz Analog FSA System (Option 1)

A. The Zetron Model 25 analog FSA encoder equipment will not be replaced in this project and the Contractor shall furnish and install a new conventional analog simulcast radio channel to replace the functionality currently supported by the analog EDACS system.

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B. The Zetron Model 25 analog FSA system and the new simulcast 800 MHz radio channel will be the primary method of alerting fire stations.

C. The Zetron Model 25 FSA system broadcasts the paging tones and voice simultaneously over the 800 MHz and VHF radio channels.

D. The Contractor shall furnish and install a new six (6)-site, single channel, analog simulcast 800 MHz FSA system radio channel.

E. The Contractor shall furnish and install continuous duty transmitters with a rated output of 100 watts minimum.

F. The new FSA analog simulcast system shall be transmit-only and a receiver voting system is not required.

G. The Contractor shall integrate the system into the new P25 radio and dispatch console systems, and to the Zetron Paging Encoder system.

H. The Contractor shall connect the new FSA base stations and the associated network and control equipment to the -48VDC battery plant at each site.

I. The Contractor shall work with VCSO Dispatch and County IT to determine the dispatch radio console screen layout and interface for the simulcast FSA system.

4.13.2 FSA over P25 Alternative (Option 2)

A. The Contractor shall be allowed to propose an alternative solution to support the Zetron Model 25 FSA system over the new P25 communication system; however, the Contractor shall explain in full detail how they will guarantee the reliability of broadcasting analog paging signals over a P25 network.

B. The Contractor shall assume full responsibility for the reliability of the FSA system, and shall be responsible for all costs associated with any remedial equipment and/or services that may be required to correct any issues encountered.

4.13.3 Cutover and Programming of FSA Fire Station Radios

A. The Contractor shall furnish all materials and services necessary for the cutover of the Zetron Model 25 FSA operations from the EDACS system to the conventional 800 MHz FSA radio channel and frequency.

B. The Contractor shall furnish all materials and services necessary to reprogram and test the operation of the FSA radio and tone decoder system at each of the fire stations operating on the new conventional frequency.

C. The Contractor shall not be responsible for the repair of defective equipment discovered during the work.

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4.14 RMACS 800 MHz Simulcast System

A. The Contractor shall furnish and install a new analog simulcast 800 MHz Regional Mutual Aid Communication System (RMACS) system.

B. The Contractor shall furnish and install continuous duty transmitters with a rated output of 100 watts minimum.

C. The new analog simulcast system channels shall be configured to provide receiver voting capabilities.

D. The Contractor shall replace the current 8CALL90 channel simulcast equipment and integrate it into the new P25 radio and dispatch console systems.

E. The Contractor shall upgrade the current 8TAC92, 8TAC93, 8TAC94 and MA-FLA channels to simulcast and integrate them into the new P25 radio system.

F. The Contractor shall replace the 800 MHz RMACS antenna system, combiner system and multicoupler system at each site.

G. The Contractor shall connect the new RMACS base stations and the associated network and control equipment to the -48VDC battery plant at each site.

H. The RMACS simulcast system base stations shall be deployed at the following tower sites:

a. Edgewater

b. EVAC

c. Orange City

d. Pierson

e. Port Orange

f. EOC-B (8CALL90 channel only)

I. The Contractor shall work with VCSO Dispatch and County IT to determine the dispatch radio console screen layout and interface for the Simulcast RMACS system.

4.15 Backup or Secondary VHF Fire Paging Simulcast System

VV. The Zetron Model 25 analog FSA system and the VHF simulcast radio channel is the secondary method of alerting fire stations.

WW. The Zetron Model 25 FSA system broadcasts the paging tones and voice simultaneously over the 800 MHz and VHF radio channels.

XX. The Contractor shall furnish and install a VHF analog simulcast system equipment to replace the existing multisite VHF system and integrate into the new P25 radio and dispatch console systems.

YY. The Contractor shall use the County's current VHF frequency 154.3400 MHz.

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ZZ. The Contractor shall furnish and install continuous duty transmitters with a rated output of 100 watts minimum.

AAA. The VHF simulcast system base stations (repeater) shall be deployed at the following tower sites:

a. Edgewater

b. EOC-A

c. Orange City

d. Pierson

e. Port Orange

f. EVAC (This will be a new VHF simulcast paging site)

BBB. The Contractor shall furnish and install a new DB224 or equivalent VHF antenna system with LDF5-50 transmission line at each site. All antennas are omnidirectional except Port Orange that is offset to the East.

CCC. The Contractor shall connect the new VHF base stations and the associated network and control equipment to the -48VDC battery plant at each site.

DDD. The Contractor shall work with VCSO Dispatch Operations and County IT to determine the dispatch radio console screen layout and interface for the new VHF Fire Paging Simulcast system.

4.16 VHF Hazmat Communications System

A. Volusia County Fire Services currently utilizes a VHF Simplex system consisting of 16 ICOM intrinsically safe portable radios with throat microphones, external push to talk, lapel microphones, individual chargers and extra batteries.

B. The Hazmat team desires to eliminate the need to carry two radios on a Hazmat incident and would like to use the P25 network with one Encrypted Hazmat talk group and one non-encrypted Hazmat talk group for interoperation with surrounding Counties.

C. The Contractor shall propose a package solution for Hazmat communications including the latest technology in throat microphones, bone microphones, and ear bud microphones.

4.17 Volusia County Hospital Subscriber Gear

A. The Contractor shall extend subscriber equipment and accessory pricing to all hospitals located in Volusia County for the term of the Contract.

4.18 Voice Logging Recorder System

A. The existing voice logging recorder system shall be upgraded or replaced in order to continue to record E911 and administrative telephone lines, 800 MHz radio talk group audio, conventional radio channel audio, and dispatch position console audio after the transition to the new P25 Phase 2 radio system.

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B. For the purposes of sizing the upgraded or new voice logging recorder system, the Contractor shall utilize the following information:

Source Description	Number of Channels
Select TX and RX combined audio from each operator position at Primary 911 Dispatch	64
Select TX and RX combined audio from each operator position at Backup 911 Dispatch	20
Total P25 Phase 2 (28 TDMA working channels) system trunked voice paths	56
EVENT System (4 working channels) system trunked voice paths	8
Analog Conventional Resources	64
RMACS 800 MHz Simulcast System conventional voice channels	5
Client Licenses and QA Package	25

Table 6 – Voice Logging Recorder System Configuration

4.18.1 Upgrade of the Existing Voice Logging Recorder Systems

A. As part of the Contractor's response to this RFP, the Contractor shall indicate whether it is possible to utilize the existing recording systems to record talk group audio after the transition to the P25 Phase 2 radio system.

B. If the existing voice logging recorder equipment is upgraded or replaced, the upgrade or replacement shall include the capability to decrypt AES256 data and audio.

C. If the existing equipment can be utilized with the new P25 radio system, the Contractor shall propose all necessary equipment, services, and all necessary API interfaces required to integrate the existing equipment.

D. Additionally, the Contractor shall clearly state the limitations of utilizing the existing voice logging equipment with the new P25 system.

E. If the existing recording equipment cannot be utilized to record P25 Phase 2 audio, the Contractor shall indicate this in their response.

4.18.2 Backup Voice Logging Recorder System (Optional Purchase)

A. Regardless of whether it is possible or not to utilize the existing voice logging equipment, the Contractor shall propose a single platform replacement voice logging recorder system.

B. It is anticipated that client work stations for the new voice logging system will be required at the EOSCC primary dispatch and at the 59 Keyton Drive backup dispatch center.

C. The Contractor shall include detailed pricing in Exhibit B – Pricing Sheets for the complete replacement of the existing voice logging recorder systems with a voice logging recorder that is compatible with P25 Phase 2 trunking systems, and able to record trunked

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talk group audio, P25 dispatch console audio, E911 and administrative telephone lines, and conventional radio channel audio.

D. The voice logging recorder shall be redundant with master voice logging recorder installed at the primary 911 dispatch center and backup voice logging recorder installed at the backup 911 dispatch center.

E. The master and backup voice logging recorders shall remain synchronized and appear as a single voice logging recorder to the users.

F. The voice logging system shall be partitioned such that each agency's recorded data is private and cannot be accessed by other agencies.

G. The voice logging recorder shall support AES256 encryption.

4.19 P25 System Security, Backup, and Recovery Operations

A. The Contractor shall describe all security functions in their proposed radio network, particularly all anti-virus and malware protection provided to all P25 software systems.

B. Specific attention shall be paid to address security protection for servers which face the Internet or wireless LTE carrier networks.

C. The Contractor shall include the security processes and procedures necessary for both the Contractor and County personnel to maintain system security from external and internal threats.

D. The Contractor shall describe all server or other component backup and software/hardware recovery procedures necessary for recovery of all critical server or other system equipment and the description shall include any virtualized software backup procedures.

E. The Contractor shall describe how unauthorized users can be kept from obtaining or programming personalities to operate on the County's network.

F. The Contractor shall describe what mechanisms can be used to prevent and identify duplicate addresses on the Contractor's proposed networks.

G. The Contractor shall describe all components of the proposed P25 radio system that could be subject to outside security attacks and the defense remedies that it provides to a customer to protect the system.

H. The Contractor shall describe any network monitoring services it offers to customers including what specific events or conditions the service monitors, and how the user is alerted when abnormalities occur.

4.20 Contractor Reuse of P25 Capable Infrastructure Equipment

A. The Contractor may propose the reuse of components of the County's existing communications system infrastructure that are of current manufacture and can be supported in the same manner as new equipment.

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B. The reuse of any existing equipment shall be done in a manner that does not diminish the operation of the existing EDACS system or the new P25 system, or impede their ability to support critical public safety communications.

C. The Contractor shall provide in their proposal, a detailed description of the following:

   a. The proposed equipment and the components to be reused

   b. The end-of-life and the end of support schedule for the equipment

   c. A description of the loss of any functionality on the new and existing communication systems during transition

   d. The cost savings of equipment reuse verses the cost of new equipment as specified in the Pricing Sheets

D. The County shall approve in writing, the reuse of any and all equipment.

E. The Contractor shall update all firmware and software of the reused equipment to the most current version.

4.20.1 Reused Equipment Hardware Refresh

A. The Contractor shall perform a Technology Update on any reused equipment that has been in service for more than three (3) years.

B. The Contractor shall provide the County with a list of all equipment that requires a Technology Update.

C. The Technology Update shall include the replacement of critical components of the network master core systems that include the following components:

   a. Network core servers

   b. Network core storage systems

   c. Network core routers

   d. Network core switches

   e. Network firewalls

D. The Contractor shall conform to the Technology Update schedule and requirements during the maintenance period, years three (3) through 17 as required in this RFP.

4.20.2 Warranty Requirements

A. The Contractor shall warrant all equipment reused the same as “new”.

B. The Contractor shall warrant that all equipment reused shall conform to the specifications provided within this RFP, and that it shall be free from defects in materials, functionality, and workmanship for a period of at least two (2) years from the date of Final System Acceptance.

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C. The Contractor shall provide warranty support on reused equipment in compliance with the requirements of this RFP for new equipment.

4.20.3 Maintenance Requirements

A. The Contractor shall include the cost to extend the system infrastructure corrective and preventative maintenance, inclusive of the reused equipment, on an annual basis for a period of 15 years following the expiration of the Warranty period.

B. The Contractor shall propose maintenance support on reused equipment in compliance with the requirements of this RFP for new equipment.

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5. 800 MHZ P25 RADIO COVERAGE AND DESIGN REQUIREMENTS

5.1 General Requirements

A. A primary consideration in the development of the P25 standard is to enable a common air interface to facilitate communications, and thus interoperability, between systems and user equipment from disparate manufacturers.

B. Because the user equipment from disparate manufacturers will communicate on the County's new P25 system, the Contractor shall model and depict their predicted radio coverage using the technical parameters specified in this RFP.

C. It is the County's goal to achieve 97% service area reliability (SAR) for portable radios equipped with a 1/2-wave antenna, worn on the belt and operating outdoors, and 95% SAR for portable radios equipped with a 1/2-wave antenna, worn on the belt and operating within the specified buildings with a minimum Delivered Audio Quality (DAQ) of 3.4.

D. All references to coverage reliability in this document refer to SAR.

5.2 Radio Coverage Definition

A. Radio coverage is defined as the ability to successfully complete inbound (field-to-dispatch), outbound (dispatch-to-field), and radio-to-radio communications throughout the designated service area with the required minimum delivered audio quality DAQ 3.4.

B. In the TIA/EIA Technical Service Bulletin TSB-88, the Telecommunications Industry Association (TIA) defines the delivered audio quality that is a subjective numeric rating of the intelligibility of speech as described in the abbreviated DAQ Table 7 below.

Delivered Audio Quality	Subjective Performance Description
DAQ 4.0	Speech easily understood. Occasional Noise/Distortion.
DAQ 3.4	Speech understandable with repetition only rarely required. Some Noise/Distortion.
DAQ 3.0	Speech understandable with slight effort. Occasional repetition required due to Noise/Distortion.

Table 7 - Delivered Audio Quality

5.3 Radio Coverage Requirements

5.3.1 Radio System Service Area

A. The jurisdictional boundaries of Volusia County and the defined Urban Area Polygons (Figure 1) for in-building radio coverage shall define the coverage requirements for the system.

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B. The Contractor shall utilize the County's shapefile of the Volusia County boundary for the preparation of all coverage prediction maps submitted by the Contractor. The shape file is located at http://maps.vcgov.org/gis/download/shapes.htm, listed under (Countywide Data) Shapefiles, County Boundary (aka vcbnd or vcbnd400).

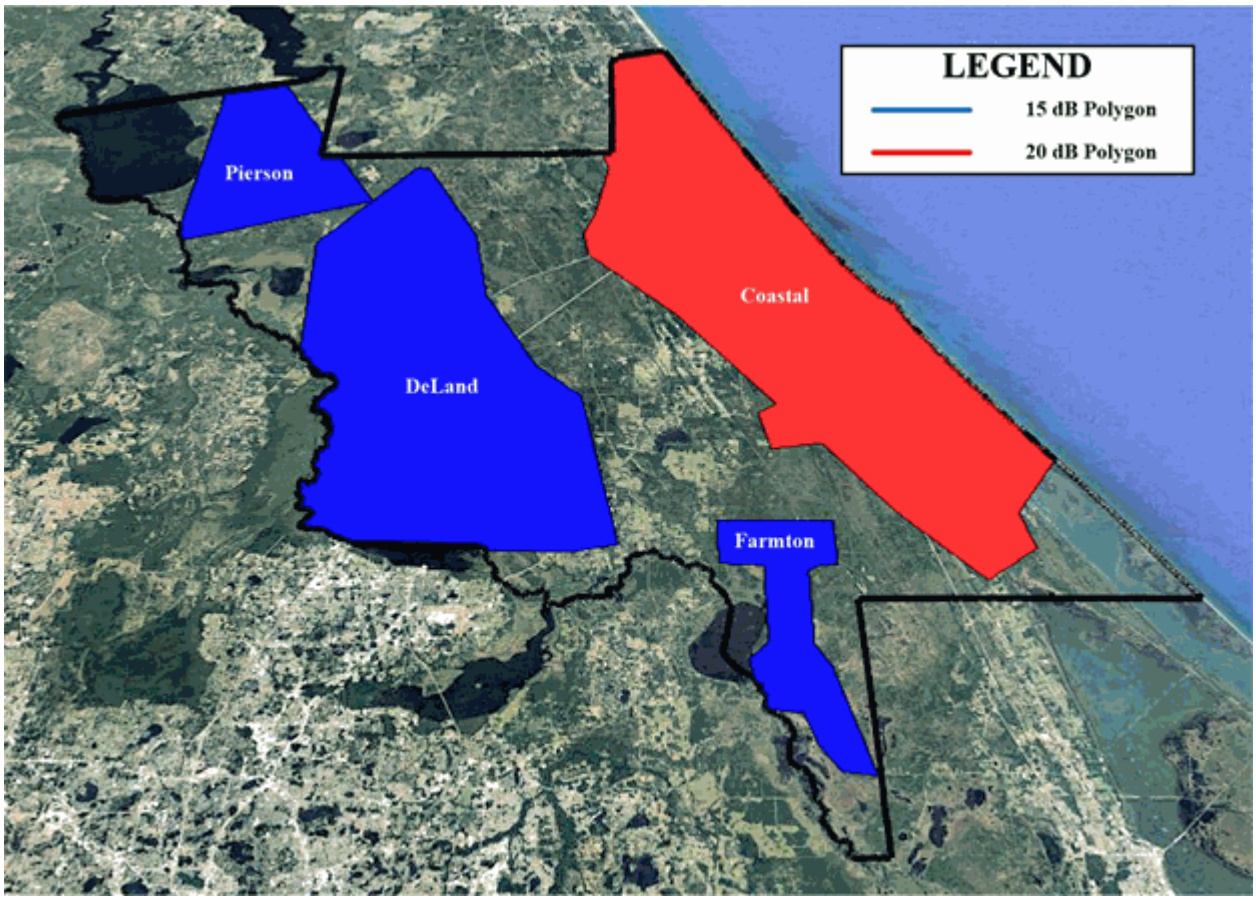

Figure 1 - Urban Area Polygons

5.3.2 Coverage Requirements

A. The Contractor's proposed system design radio coverage goal is as follows:

a. A minimum of 97% SAR for portable outdoor coverage countywide

b. A minimum of 95% SAR for portable in-building coverage utilizing the designated building loss specified for each Urban Area Polygon

5.3.3 Infrastructure System Sites and Antenna Heights

A. The antenna heights contained in Table 8 below were determined by the County and the County's technical consultant during the Needs Assessment phase of the County's project.

B. For system engineering purposes, the Contractor shall utilize the tower sites and the antenna mounting heights to the antenna base from Table 8 below.

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Tower Site	Transmit Hgt-Base AGL (ft)	Receive Hgt-Base AGL (ft)
DeBary	165	165
DeLand FDOT	267	267
De Leon Springs	285	285
Deltona	280	300
Edgewater	250	250
EOC-A	320	320
EOC-B	305	305
EVAC	298	298
Farmton Greenfield	300	320
Plantation Bay	300	320
New Smyrna Beach	180	180
Orange City	350	350
Ormond Beach	253	253
Pierson	284	284
Port Orange	284	284

Table 8 - Tower Site and Antenna Height Parameters

5.3.4 User Equipment Configuration

A. For system engineering purposes, and for the modeling and test verification of radio coverage, the Contractor shall utilize the following user equipment configurations for inbound and outbound communications:

   a. A portable radio with a 1/4-wave antenna, worn on the belt for transmit and receive with the technical parameters in Table 9 below

   b. A portable radio with a 1/2-wave antenna, worn on the belt for transmit and receive with the technical parameters in Table 9 below

   c. A mobile radio with a 1/4-wave antenna mounted in the center of the roof for transmit and receive with the technical parameters in Table 9 below

5.3.5 User Equipment Technical Parameters

A. The user equipment technical parameters specified in this RFP are generic in nature and are not based upon the technical parameters of any specific equipment.

B. The information in Table 9 below depicts the user equipment required technical parameters that the Contractor shall use for the system coverage modeling and the coverage acceptance testing.

C. Portable antenna body loss parameters are inclusive of antenna gain/loss and body shielding loss and the Contractor shall not include any other adjustments.

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P25 Mobile and Portable Radio Parameters for Calculation of Coverage				
P25 Phase 1 LSM Portable	Portable rated receiver sensitivity	-119.0	dBm	5.0% BER
	CPC DAQ 3.4	-108.5	dBm	2.0% BER
	Portable rated transmitter power	34.8	dBm	3-Watts
	Body Loss, 1/4-wave on hip at 3.3' AGL	15.4	dB	
	Adjustment for the loss of a 1/4-wave magnetic mount test antenna referenced to a 1/2-wave dipole	3.0	dB	
	Height adjustment attenuation for test vehicle at 5.0' AGL	1.3	dB	
P25 Phase 2 LSM Portable	Portable rated receiver sensitivity	-119.0	dBm	5.0% BER
	CPC DAQ 3.4	-109.9	dBm	2.4% BER
	Portable rated transmitter power	34.8	dBm	3-Watts
	Body Loss, 1/4-wave on hip at 3.3' AGL	15.4	dB	
	Adjustment for the loss of a 1/4-wave magnetic mount test antenna referenced to a 1/2-wave dipole	3.0	dB	
	Height adjustment attenuation for test vehicle at 5.0' AGL	1.3	dB	
P25 Phase 1 LSM Portable	Portable rated receiver sensitivity	-119.0	dBm	5.0% BER
	CPC DAQ 3.4	-108.5	dBm	2.0% BER
	Portable rated transmitter power	34.8	dBm	3-Watts
	Body Loss, 1/2-wave on hip at 3.3' AGL	10.3	dB	
	Adjustment for the loss of a 1/4-wave magnetic mount test antenna referenced to a 1/2-wave dipole	3.0	dB	
	Height adjustment attenuation for test vehicle at 5.0' AGL	1.3	dB	
P25 Phase 2 LSM Portable	Portable rated receiver sensitivity	-119.0	dBm	5.0% BER
	CPC DAQ 3.4	-109.9	dBm	2.4% BER
	Portable rated transmitter power	34.8	dBm	3-Watts
	Body Loss, 1/2-wave on hip at 3.3' AGL	10.3	dB	
	Adjustment for the loss of a 1/4-wave magnetic mount test antenna referenced to a 1/2-wave dipole	3.0	dB	
	Height adjustment attenuation for test vehicle at 5.0' AGL	1.3	dB	
P25 Phase 1 LSM Mobile	Mobile rated receiver sensitivity	-119.0	dBm	5.0% BER
	CPC DAQ 3.4	-108.5	dBm	2.0% BER
	Mobile rated transmitter power	44.0	dBm	25-Watts
	Adjustment for the loss of a 1/4-wave antenna referenced to a 1/2-wave dipole	3.0	dB	
P25 Phase 2 LSM Mobile	Mobile rated receiver sensitivity	-119.0	dBm	5.0% BER
	CPC DAQ 3.4	-109.9	dBm	2.4% BER
	Mobile rated transmitter power	44.0	dBm	25-Watts
	Adjustment for the loss of a 1/4-wave antenna referenced to a 1/2-wave dipole	3.0	dB	

Table 9 - P25 User Equipment Required Technical Parameters

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5.4 Simulcast Systems Contractor-Guaranteed Service Area Reliability

A. The Contractor shall state in their proposal their Contractor-Guaranteed SAR for Phase 1 FDMA and Phase 2 TDMA, for each line item depicted in Table 10 below.

B. Contractors shall assume a receiver sensitivity specification for mobile and portable equipment of -119.0 dBm for 5% BER and utilize faded CPC DAQ 3.4 outdoor target signal levels as follows:

   a. A signal level of -108.5 dBm for Phase 1 FDMA

   b. A signal level of -109.9 dBm for Phase 2 TDMA

C. Contractors shall utilize the mobile and the portable specifications as stated in Table 9.

Contractor-Guaranteed Percentage of Service Area Reliability for Radio Coverage		
	Phase 1 FDMA %	Phase 2 TDMA %
Countywide Service Area, Mobile, 1/4-Wave on Roof at 5.0' AGL		
Countywide Service Area, Portable, 1/2-Wave on Hip at 3.3' AGL, body loss of 10.3 dB Outdoors		
Coastal Polygon, Portable, 1/2-Wave on Hip at 3.3' AGL, body loss of 10.3 dB in 20 dB loss Buildings		
DeLand Polygon, Portable, 1/2-Wave on Hip at 3.3' AGL, body loss of 10.3 dB in 15 dB loss Buildings		
Pierson Polygon, Portable, 1/2-Wave on Hip at 3.3' AGL, body loss of 10.3 dB in 15 dB loss Buildings		
Farmton Polygon, Portable, 1/2-Wave on Hip at 3.3' AGL, body loss of 10.3 dB in 15 dB loss Buildings		

Table 10 - Contractor-Guaranteed Service Area Reliability for Simulcast Systems

5.5 Simulcast Systems Coverage Maps

A. The Contractor shall provide in their proposal individual coverage maps for the following radio configurations:

   a. P25 Phase 1, Contractor-Guaranteed SAR, Countywide Service Area, for both inbound and outbound communications for a mobile with a 1/4-wave antenna mounted on the roof at 5.0-feet AGL

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b. P25 Phase 2, Contractor-Guaranteed SAR, Countywide Service Area, for both inbound and outbound communications for a mobile with a 1/4-wave antenna mounted on the roof at 5.0-feet AGL

c. P25 Phase 1, Contractor-Guaranteed SAR, Countywide Service Area, outdoors for both inbound and outbound communications for a portable with a 1/2-wave antenna on hip at 3.3-feet AGL

d. P25 Phase 2, Contractor-Guaranteed SAR, Countywide Service Area, outdoors for both inbound and outbound communications for a portable with a 1/2-wave antenna on hip at 3.3-feet AGL

e. P25 Phase 1, Contractor-Guaranteed SAR, Countywide Service Area, within 10 dB loss buildings for both inbound and outbound communications for a portable with a 1/2-wave antenna on hip at 3.3-feet AGL

f. P25 Phase 2, Contractor-Guaranteed SAR, Countywide Service Area, within 10 dB loss buildings for both inbound and outbound communications for a portable with a 1/2-wave antenna on hip at 3.3-feet AGL

g. P25 Phase 1, Contractor-Guaranteed SAR, Coastal Polygon in 20 dB buildings for both inbound and outbound communications for a portable with a 1/2-wave antenna on hip at 3.3-feet AGL

h. P25 Phase 2, Contractor-Guaranteed SAR, Coastal Polygon in 20 dB buildings for both inbound and outbound communications for a portable with a 1/2-wave antenna on hip at 3.3-feet AGL

i. P25 Phase 1, Contractor-Guaranteed SAR, DeLand Polygon in 15 dB buildings for both inbound and outbound communications for a portable with a 1/2-wave antenna on hip at 3.3-feet AGL

j. P25 Phase 2, Contractor-Guaranteed SAR, DeLand Polygon in 15 dB buildings for both inbound and outbound communications for a portable with a 1/2-wave antenna on hip at 3.3-feet AGL

k. P25 Phase 1, Contractor-Guaranteed SAR, Pierson Polygon in 15 dB buildings for both inbound and outbound communications for a portable with a 1/2-wave antenna on hip at 3.3-feet AGL

l. P25 Phase 2, Contractor-Guaranteed SAR, Pierson Polygon in 15 dB buildings for both inbound and outbound communications for a portable with a 1/2-wave antenna on hip at 3.3-feet AGL

m. P25 Phase 1, Contractor-Guaranteed SAR, Farmton Polygon in 15 dB buildings for both inbound and outbound communications for a portable with a 1/2-wave antenna on hip at 3.3-feet AGL

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n. P25 Phase 2, Contractor-Guaranteed SAR, Farmton Polygon in 15 dB buildings for both inbound and outbound communications for a portable with a 1/2-wave antenna on hip at 3.3-feet AGL

o. Any areas that have less than the desired DAQ 3.4 level shall be clearly visible on the coverage maps

p. The Contractor shall consider simulcast time delay interference (TDI) zones where a high BER (less than DAQ 3.4) may be encountered and shall clearly depict these areas on their coverage maps

5.5.1 Simulcast Systems Technical Parameters

A. For the purpose of the evaluation and validation of the Contractor's proposed radio coverage, the Contractor shall furnish the following information for each map and each tower site:

a. Transmit and receive antenna models, gain, beamwidth, azimuth, downtilt, sidearm length, and mounting height referenced to base and center of radiation

b. Transmission line type and length for transmit and receive antenna systems

c. Insertion loss and gain values noted in decibels for all proposed transmit combiners, receiver multicouplers, filters, duplexers, connectors, circulators, lightning arrestors, jumper cables, attenuators, etc.

d. Transmitter power level for all base station transceivers and subscriber units

e. The effective radiated power level for each site

f. Net amplification gain for the tower top amplifier system

g. Receiver sensitivity specifications for all base station transceivers

h. The faded performance margin (Cf/(I+N)) utilized per TSB-88 for the required CPC (channel performance criterion) requirement for DAQ 3.4 and BER

i. The minimum base station RSL for DAQ 3.4 and BER

B. The Contractor shall provide in their proposal a complete schematic diagram for each transmit and receive antenna system per site noting all proposed antennas, transmission lines, tower top amplifiers, receiver multicouplers, transmit combiners, circulators, filters, connectors, etc.

C. The Contractor shall provide in their proposal product data sheets for all proposed antennas, transmission lines, tower top amplifiers, receiver multicouplers, transmit combiners, circulators, filters, connectors, attenuators, etc.

D. The coverage maps included in the proposal shall be provided to the County in 11-inch x 17-inch size, high-resolution in both printed and electronic PDF document format.

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E. Coverage maps shall indicate the County's boundaries, urban area polygons, base site locations, interstate and primary roads, and any areas of non-coverage.

5.6 EVENT System Contractor-Guaranteed Service Area Reliability

A. The Contractor shall state in their proposal their Contractor-Guaranteed SAR for Phase 1 FDMA and Phase 2 TDMA, for each line item depicted in Table 11 below.

B. Contractors shall assume a receiver sensitivity specification for mobile and portable equipment of -119.0 dBm for 5% BER and utilize faded CPC DAQ 3.4 outdoor target signal levels as follows:

a. A signal level of -108.5 dBm for Phase 1 FDMA

b. A signal level of -109.9 dBm for Phase 2 TDMA

C. Contractors shall utilize the portable specifications as stated in Table 9.

Contractor-Guaranteed Percentage of Service Area Reliability for Radio Coverage		
	Phase 1 FDMA %	Phase 2 TDMA %
The area encompassing an 8-mile radius around the EVAC tower site, Portable, 1/2-Wave on Hip at 3.3' AGL, body loss of 10.3 dB Outdoors		

Table 11 - Contractor-Guaranteed Service Area Reliability for the EVENT System

5.7 EVENT System Coverage Maps

A. The Contractor shall provide individual coverage maps in their proposal for the following radio configurations:

a. P25 Phase 1, Contractor-Guaranteed SAR, within the area encompassing an 8-mile radius around the EVAC tower site, outdoors for both inbound and outbound communications for a portable with a 1/2-wave antenna on hip at 3.3-feet AGL

b. P25 Phase 2, Contractor-Guaranteed SAR, within the area encompassing an 8-mile radius around the EVAC tower site, outdoors for both inbound and outbound communications for a portable with a 1/2-wave antenna on hip at 3.3-feet AGL

5.7.1 EVENT System Technical Parameters

A. For the purpose of the evaluation and validation of the Contractor's proposed radio coverage, the Contractor shall furnish the following information in their proposal for each map and each tower site:

a. Transmit and receive antenna models, gain, beamwidth, azimuth, downtilt, sidearm length, and mounting height referenced to base and center of radiation

b. Transmission line type and length for transmit and receive antenna systems

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c. Insertion loss and gain values noted in decibels for all proposed transmit combiners, receiver multicouplers, filters, duplexers, connectors, circulators, lightning arrestors, jumper cables, attenuators, etc.

d. Transmitter power level for all base station transceivers and subscriber units

e. The effective radiated power level for each site

f. Net amplification gain for the tower top amplifier system

g. Receiver sensitivity specifications for all base station transceivers

h. The faded performance margin (Cf/(I+N)) utilized per TSB-88 for the required CPC (channel performance criterion) requirement for DAQ 3.4 and BER

i. The minimum base station RSL for DAQ 3.4 and BER

B. The Contractor shall provide a complete schematic diagram for each transmit and receive antenna system per site noting all proposed antennas, transmission lines, tower top amplifiers, receiver multicouplers, transmit combiners, circulators, filters, connectors, etc.

C. The Contractor shall provide product data sheets for all proposed antennas, transmission lines, tower top amplifiers, receiver multicouplers, transmit combiners, circulators, filters, connectors, attenuators, etc.

D. The coverage maps shall be provided to the County in 11-inch x 17-inch size, high-resolution in both printed and electronic PDF document format.

E. Coverage maps shall indicate the County's boundaries, an eight (8) mile radius circle centered on the EVAC site, base site locations, interstate and primary roads, and any areas of non-coverage.

5.8 DeBary PSIC System Contractor-Guaranteed Service Area Reliability

A. The Contractor shall state in their proposal their Contractor-Guaranteed SAR for Phase 1 FDMA and Phase 2 TDMA, for each line item depicted in Table 12 below.

B. Contractors shall assume a receiver sensitivity specification for mobile and portable equipment of -119.0 dBm for 5% BER and utilize faded CPC DAQ 3.4 outdoor target signal levels as follows:

a. A signal level of -108.5 dBm for Phase 1 FDMA

b. A signal level of -109.9 dBm for Phase 2 TDMA

C. Contractors shall utilize the portable specifications as stated in Table 9.

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Contractor-Guaranteed Percentage of Service Area Reliability for Radio Coverage		
	Phase 1 FDMA %	Phase 2 TDMA %
The area encompassing an 8-mile radius around the DeBary tower site, Portable, 1/2-Wave on Hip at 3.3' AGL, body loss of 10.3 dB Outdoors		

Table 12 - Contractor-Guaranteed Service Area Reliability for the DeBary PSIC System

5.9 DeBary PSIC System Coverage Maps

A. The Contractor shall provide individual coverage maps in their proposal for the following radio configurations:

   a. P25 Phase 1, Contractor-Guaranteed SAR, within the area encompassing an 8-mile radius around the DeBary tower site, outdoors for both inbound and outbound communications for a portable with a 1/2-wave antenna on hip at 3.3-feet AGL

   b. P25 Phase 2, Contractor-Guaranteed SAR, within the area encompassing an 8-mile radius around the DeBary tower site, outdoors for both inbound and outbound communications for a portable with a 1/2-wave antenna on hip at 3.3-feet AGL

5.9.1 DeBary PSIC System Technical Parameters

A. For the purpose of the evaluation and validation of the Contractor's proposed radio coverage, the Contractor shall furnish the following information in their proposal for each map and each tower site:

   a. Transmit and receive antenna models, gain, beamwidth, azimuth, downtilt, sidearm length, and mounting height referenced to base and center of radiation

   b. Transmission line type and length for transmit and receive antenna systems

   c. Insertion loss and gain values noted in decibels for all proposed transmit combiners, receiver multicouplers, filters, duplexers, connectors, circulators, lightning arrestors, jumper cables, attenuators, etc.

   d. Transmitter power level for all base station transceivers and subscriber units

   e. The effective radiated power level for each site

   f. Net amplification gain for the tower top amplifier system

   g. Receiver sensitivity specifications for all base station transceivers

   h. The faded performance margin (Cf/(I+N)) utilized per TSB-88 for the required CPC (channel performance criterion) requirement for DAQ 3.4 and BER

   i. The minimum base station RSL for DAQ 3.4 and BER

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B. The Contractor shall provide a complete schematic diagram for each transmit and receive antenna system per site noting all proposed antennas, transmission lines, tower top amplifiers, receiver multicouplers, transmit combiners, circulators, filters, connectors, etc.

C. The Contractor shall provide product data sheets for all proposed antennas, transmission lines, tower top amplifiers, receiver multicouplers, transmit combiners, circulators, filters, connectors, attenuators, etc.

D. The coverage maps shall be provided to the County in 11-inch x 17-inch size, high-resolution in both printed and electronic PDF document format.

E. Coverage maps shall indicate the County's boundaries, an eight (8) mile radius circle centered on the DeBary site, base site locations, interstate and primary roads, and any areas of non-coverage.

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6. FSA 800 MHZ RADIO COVERAGE AND DESIGN REQUIREMENTS

6.1 General Requirements

A. The Contractor shall model and depict their predicted FSA 800 MHz simulcast radio coverage using the technical parameters specified in this section of the RFP.

B. The Contractor shall state their guaranteed SAR for 800 MHz control station radios equipped per the parameters depicted in this section, based upon a minimum DAQ of 3.4.

6.2 Radio Coverage Definition

A. Radio coverage is defined as the ability to successfully complete outbound communications throughout the designated service area with the required minimum delivered audio quality of DAQ 3.4.

6.3 Radio Coverage Requirements

6.3.1 Radio System Service Area

A. The jurisdictional boundaries of Volusia County shall define the coverage requirements for the FSA system.

C. The Volusia County boundary shapefile specified in section 5.3.1 Radio System Service Area shall be utilized for the preparation of all coverage prediction maps submitted by the Contractor. The shape file is located at http://maps.vcgov.org/gis/download/shapes.htm, listed under (Countywide Data) Shapefiles, County Boundary (aka vcbnd or vcbnd400).

6.3.2 FSA Coverage Requirements

A. The Contractor shall state their guaranteed SAR for tone alerting and voice transmissions to control station radios equipped with tone decoders and operating per the parameters described in this section, with a minimum DAQ of 3.4.

a. A minimum of 97% reliability for control station coverage countywide

6.3.3 Infrastructure System Sites and Antenna Heights

A. For system engineering purposes, the Contractor shall utilize the tower sites and antenna mounting heights to the antenna base from Table 13 below.

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Tower Site	Transmit	Receive
	Hgt-Base AGL (ft)	Hgt-Base AGL (ft)
Edgewater	225	245 INV
EVAC	260	280
Orange City	322	350 INV
Pierson	275	255 INV
Port Orange	255 INV	EDACS Rx MC
EOC-B	300 INV	None

Table 13 - Sites and Antenna Height Parameters for 800 MHz FSA

6.3.4 User Equipment Configuration

A. For system engineering purposes, and for the modeling and test verification of radio coverage, the Contractor shall utilize the following user equipment configuration for outbound communications.

a. A control station radio installed in fire stations countywide and equipped per the parameters described in this section, for reception of tone alerting and DAQ3.4 voice transmissions with the technical parameters depicted in Table 14 below.

6.3.5 User Equipment Technical Parameters

A. The user equipment technical parameters specified in this RFP are generic in nature and are not based upon the technical parameters of any specific equipment.

B. The information in Table 14 below depict the user equipment required technical parameters that the Contractor shall use for the system coverage modeling and the coverage acceptance testing.

800 MHz FSA Control Station Equipment Parameters for Calculation of Coverage				
800 MHz FSA	Receiver rated sensitivity	-119.0	dBm	12 dB SINAD
	CPC DAQ 3.4	-103.0	dBm	DAQ 3.4
	3-element yagi antenna at 15' AGL, Laird Y8063 or equivalent	6.0	dBd	Gain
	50' 1/2-inch LDF and connectors	2.5	dB	Loss
	Adjustment for the loss of a 1/4-wave test antenna referenced to a 1/2-wave dipole	3.0	dB	Add
	Height adjustment for test vehicle at 5.0' AGL	6.5	dB	Add

Table 14 - FSA User Equipment Required Technical Parameters

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6.4 Contractor-Guaranteed Service Area Reliability

A. The Contractor shall state in their proposal the Contractor-Guaranteed SAR for the FSA system as depicted in Table 15 below.

B. Contractors shall assume a receiver sensitivity specification for the control station equipment of -119.0 dBm for 12 dB SINAD and utilize faded CPC DAQ 3.4 target signal level as follows:

   a. A signal level of -103.0 dBm for a 25 kHz bandwidth, 800 MHz analog channel

C. Contractors shall utilize the equipment specifications as stated in Table 14.

800 MHz FSA Radio Coverage Contractor-Guaranteed Percentage of Service Area Reliability	
	SAR %
Talk out to a control station receiver, 6 dBd gain yagi antenna at 15.0' AGL, and 2.5 dB of line loss	

Table 15 - Contractor-Guaranteed FSA Service Area Reliability

6.5 Coverage Maps

A. The Contractor shall provide individual coverage maps in their proposal for the following radio configurations:

   a. 800 MHz FSA, Contractor-Guaranteed SAR, Countywide Service Area, for outbound communications to a control station receiver with a 6 dBd gain yagi antenna mounted on the roof of a fire station at 15.0-feet AGL

   b. Any areas that have less than the desired DAQ 3.4 levels shall be clearly visible on the coverage map

   c. The Contractor shall consider simulcast audio distortion zones where high audio distortion (less than DAQ 3.4) may be encountered and shall clearly depict these areas on their coverage map

6.5.1 Technical Parameters

A. For the purpose of the evaluation and validation of the Contractor's proposed radio coverage, the Contractor shall furnish the following information in their proposal for each map and each tower site:

   a. Transmit and receive antenna models, gain, beamwidth, azimuth, downtilt, sidearm length, and mounting height referenced to base and center of radiation

   b. Transmission line type and length for transmit and receive antenna systems

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c. Insertion loss and gain values noted in decibels for all proposed transmit combiners, receiver multicouplers, filters, duplexers, connectors, circulators, lightning arrestors, jumper cables, attenuators, etc.

d. Transmitter power level for all base station transceivers

e. The effective radiated power level for each site

f. The faded performance margin (Cf/(I+N)) utilized per TSB-88 for the required CPC (channel performance criterion) requirement for a DAQ 3.4

B. The Contractor shall provide a complete schematic diagram for each antenna system per site noting all proposed antennas, transmission lines, transmit combiners, circulators, filters, connectors, etc.

C. The Contractor shall provide product data sheets for all proposed antennas, transmission lines, transmit combiners, circulators, filters, connectors, attenuators, etc.

D. The coverage map shall be provided to the County in 11-inch x 17-inch size, high-resolution in both printed and electronic PDF document format.

E. Coverage map shall indicate the County's boundaries, base site locations, interstate and primary roads, and any areas of non-coverage.

Attachment: 20._Exhibit_A_-_Technical_Specifications_-_Revisio (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

7. RMACS AND VHF RADIO COVERAGE AND DESIGN REQUIREMENTS

7.1 General Requirements

A. The Contractor shall model and depict their predicted VHF Fire Paging and RMACS 800 MHz radio coverage using the technical parameters specified in this section of the RFP.

B. The Contractor shall state their guaranteed SAR for VHF Fire Paging and 800 MHz mobile radios equipped per the parameters depicted in this section and operating outdoors, based upon a minimum DAQ of 3.0.

7.2 Radio Coverage Definition

A. Radio coverage is defined as the ability to successfully complete inbound, outbound, and radio-to-radio communications throughout the designated service area with the required minimum delivered audio quality of DAQ 3.0.

B. In the TIA/EIA Technical Service Bulletin TSB-88, the Telecommunications Industry Association (TIA) defines the delivered audio quality that is a subjective numeric rating of the intelligibility of speech as described in the abbreviated DAQ Table 16 below.

Delivered Audio Quality	Subjective Performance Description
DAQ 4.0	Speech easily understood. Occasional Noise/Distortion.
DAQ 3.4	Speech understandable with repetition only rarely required. Some Noise/Distortion.
DAQ 3.0	Speech understandable with slight effort. Occasional repetition required due to Noise/Distortion.

Table 16 - Delivered Audio Quality

7.3 Radio Coverage Requirements

7.3.1 Radio System Service Area

A. The jurisdictional boundaries of Volusia County shall define the coverage requirements for these systems.

B. The Volusia County boundary shapefile specified in section 5.3.1 Radio System Service Area shall be utilized for the preparation of all coverage prediction maps submitted by the Contractor. The shape file is located at http://maps.vcgov.org/gis/download/shapes.htm, listed under (Countywide Data) Shapefiles, County Boundary (aka vcbnd or vcbnd400).

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7.3.2 VHF Fire Paging and Fire Station Alerting Coverage Requirements

A. The Contractor shall state their guaranteed SAR for tone alerting and voice transmissions, for VHF Minitor VI pagers operating per the parameters described in this section, worn on the belt, and operating outdoors, with a minimum DAQ of 3.0.

   a. A minimum of 95% reliability for pager outdoor coverage countywide

B. The Contractor shall state their guaranteed SAR for tone alerting and voice transmissions, for Federal Informer VHF Monitor receivers operating per the parameters described in this section, installed at Fire Stations with a minimum DAQ of 3.0.

   a. A minimum of 95% reliability for fire station alerting countywide

7.3.3 800 MHz RMACS Coverage Requirements

A. The Contractor shall state their guaranteed SAR for an 800 MHz mobile radio equipped per the parameters described in this section, with a minimum DAQ of 3.0.

   a. A minimum of 95% reliability for mobile coverage countywide

7.3.4 Infrastructure System Sites and Antenna Heights

A. For system engineering purposes, the Contractor shall utilize the tower sites and antenna mounting heights to the antenna base from Table 17 and Table 18 below.

Tower Site	Transmit Hgt-Base AGL (ft)
Edgewater	250
EOC-A	280
Orange City	350
Pierson	284
Port Orange	110

Table 17 - Sites and Antenna Height Parameters for VHF Paging

Attachment: 20._Exhibit_A_-_Technical_Specifications_-_Revisio (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Tower Site	Transmit Hgt-Base AGL (ft)	Receive Hgt-Base AGL (ft)
Edgewater	225	245 INV
EVAC	260	280
Orange City	322	350 INV
Pierson	275	255 INV
Port Orange	255 INV	EDACS Rx MC
EOC-B	300 INV	None

Table 18 - Sites and Antenna Height Parameters for 800 MHz RMACS

7.3.5 User Equipment Configuration

A. For system engineering purposes, and for the modeling and test verification of radio coverage, the Contractor shall utilize the following user equipment configurations for inbound and outbound communications.

   a. For VHF Fire Paging - A tone and voice, VHF pager equipped per the parameters described in this section, worn on the belt for reception of tone alerting and DAQ3.0 voice audio with the technical parameters in Table 19 below.

   b. For 800 MHz RMACS Channels - An 800 MHz mobile radio with a 1/4-wave antenna mounted in the center of the roof for transmit and receive with the technical parameters in Table 20 below.

7.3.6 User Equipment Technical Parameters

A. The user equipment technical parameters specified in this RFP are generic in nature and are not based upon the technical parameters of any specific equipment.

B. The information in Table 19 and Table 20 below depict the user equipment required technical parameters that the Contractor shall use for the system coverage modeling and the coverage acceptance testing.

C. Portable antenna body loss parameters are inclusive of antenna gain/loss and body shielding loss and the Contractor shall not include any other adjustments.

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VHF Pager and Fire Station Alerting Equipment Parameters for Calculation of Coverage				
VHF Pager	Pager rated receiver alerting sensitivity on body at hip level (4.5 uV/m)	-106.0	dBm	Alerting
	Alerting Sensitivity to 12dB SINAD Adjustment	10.0	dBm	12 dB SINAD
	Receive signal required for DAQ 3.0 voice	-80.0	dBm	Voice
	Adjustment for the loss of a 1/4-wave magnetic mount test antenna referenced to a 1/2-wave dipole	3.0	dB	Add
	Height adjustment attenuation for test vehicle at 5.0' AGL	1.3	dB	Subtract
VHF Fire Station Alerting	Receiver rated sensitivity	-116.0	dBm	12 dB SINAD
	CPC DAQ 3.0	-100.0	dBm	17 dB SINAD
	3-element yagi antenna at 15' AGL, DB230 or similar	7.0	dBd	Gain
	50' 1/4-inch Superflex and connectors	1.5	dB	Loss
	Adjustment for the loss of a 1/4-wave antenna referenced to a 1/2-wave dipole	3.0	dB	Add
	Height adjustment attenuation for test vehicle at 5.0' AGL	7.6	dB	Add

Table 19 - VHF Pager and FSA User Equipment Required Technical Parameters

800 MHz Analog Mobile Equipment Parameters for Calculation of Coverage				
RMACS 800 MHz Mobile	Mobile rated receiver sensitivity	-119.0	dBm	12 dB SINAD
	CPC DAQ 3.0	-105.0	dBm	17 dB SINAD
	Mobile rated transmitter power	44.0	dBm	25-Watts
	Adjustment for the loss of a 1/4-wave antenna referenced to a 1/2-wave dipole	3.0	dB	Add

Table 20 – 800 MHz Analog User Equipment Required Technical Parameters

7.4 Contractor-Guaranteed Service Area Reliability

A. The Contractor shall state in their proposal the Contractor-Guaranteed SAR for the VHF and RMACS systems, for each line item depicted in Table 21and Table 22 below.

B. For the VHF Paging, Contractors shall assume a receiver alerting sensitivity specification of 4.5 uV/m and utilize faded CPC DAQ 3.0 outdoor target signal levels as follows:

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a. A signal level of -80.0 dBm for 12.5 kHz VHF Paging (Minitor VI)

b. A signal level of -100.0 dBm for 12.5 kHz VHF FSA (Federal Informer)

C. For the RMACS, Contractors shall assume a receiver sensitivity specification for mobile and portable equipment of -119.0 dBm for 12 dB SINAD and utilize faded CPC DAQ 3.0 outdoor target signal levels as follows:

a. A signal level of -105.0 dBm for 20 kHz RMACS

D. Contractors shall utilize the equipment specifications as stated in Table 19 and Table 20.

VHF Paging and VHF FSA Radio Coverage Contractor-Guaranteed Percentage of Service Area Reliability	
	SAR %
Talk out to a Minitor VI pager on Hip at 3.3' AGL, Outdoors	
Talk out to a Federal Informer receiver, yagi antenna at 15.0’ AGL, 7dB gain antenna and 1.5 dB line loss	

Table 21 - Contractor-Guaranteed VHF Paging and VHF FSA Service Area Reliability

RMACS Radio Coverage Contractor-Guaranteed Percentage of Service Area Reliability	
	SAR %
Talk out to an 800 MHz Portable, 1/2-Wave on Hip at 3.3' AGL, body loss of 10.3 dB Outdoors	
Talk back from an 800 MHz Portable, 1/2-Wave on Hip at 3.3' AGL, body loss of 10.3 dB Outdoors	
Talk out to an 800 MHz Mobile, ¼-Wave Whip on Roof at 5.0’ AGL, antenna and line loss of 3.0 dB	
Talk back from an 800 MHz Mobile, ¼-Wave Whip on Roof at 5.0’ AGL, antenna and line loss of 3.0 dB	

Table 22 - Contractor-Guaranteed RMACS Service Area Reliability

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7.5 Coverage Maps

A. The Contractor shall provide individual coverage maps in their proposal for the following radio configurations:

a. VHF Paging, Contractor-Guaranteed SAR, Countywide Service Area, outdoors for outbound communications for a Minitor VI on the hip at 3.3-feet AGL

b. VHF FSA, Contractor-Guaranteed SAR, Countywide Service Area, outdoors for outbound communications for a Federal Informer receiver with a 7 dB gain yagi antenna mounted on the roof at 15.0-feet AGL

c. RMACS, Contractor-Guaranteed SAR, Countywide Service Area, outdoors for both inbound and outbound communications for a portable with a 1/2-wave antenna on hip at 3.3-feet AGL

d. RMACS Contractor-Guaranteed SAR, Countywide Service Area, for both inbound and outbound communications for a mobile with a 1/4-wave antenna mounted on the roof at 5.0-feet AGL

e. Any areas that have less than the desired DAQ 3.0 levels shall be clearly visible on the coverage maps

f. The Contractor shall consider simulcast audio distortion zones where high audio distortion (less than DAQ 3.0) may be encountered and shall clearly depict these areas on their coverage maps

7.5.1 Technical Parameters

A. For the purpose of the evaluation and validation of the Contractor's proposed radio coverage, the Contractor shall furnish in their proposal the following information for each map and each tower site:

a. Transmit and receive antenna models, gain, beamwidth, azimuth, downtilt, sidearm length, and mounting height referenced to base and center of radiation

b. Transmission line type and length for transmit and receive antenna systems

c. Insertion loss and gain values noted in decibels for all proposed transmit combiners, receiver multicouplers, filters, duplexers, connectors, circulators, lightning arrestors, jumper cables, attenuators, etc.

d. Transmitter power level for all base station transceivers and subscriber units

e. The effective radiated power level for each site

f. Net amplification gain for the tower top amplifier system

g. Receiver sensitivity specifications for all base station transceivers

h. The faded performance margin (Cf/(I+N)) utilized per TSB-88 for the required CPC (channel performance criterion) requirement for a DAQ 3.0

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B. The Contractor shall provide a complete schematic diagram for each transmit and receive antenna system per site noting all proposed antennas, transmission lines, tower top amplifiers, receiver multicouplers, transmit combiners, circulators, filters, connectors, etc.

C. The Contractor shall provide product data sheets for all proposed antennas, transmission lines, tower top amplifiers, receiver multicouplers, transmit combiners, circulators, filters, connectors, attenuators, etc.

D. The coverage maps shall be provided to the County in 11-inch x 17-inch size, high-resolution in both printed and electronic PDF document format.

E. Coverage maps shall indicate the County's boundaries, base site locations, interstate and primary roads, and any areas of non-coverage.

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8. DISPATCH CONSOLE REQUIREMENTS

A. The Contractor shall thoroughly understand the current dispatch console operations and functionality to maintain the current level of functionality when implementing the new dispatch console system and equipment.

B. The Contractor shall provide full-featured wireline dispatch console operator positions and equipment with AES256 encryption at the primary EOSCC Dispatch Center, the EOC Operations room, and at 49 Keyton Drive in the Radio Services room.

C. The Contractor shall provide new software based dispatch console applications with AES256 encryption on County computers at dispatch console operator positions at the Backup Dispatch Center.

8.1 EOSCC Primary Dispatch Center

A. The Contractor shall replace the existing dispatch console positions and install 38 new dispatch console positions. Thirty-five (35) consoles will be installed in the Dispatch Center, two (2) consoles will be installed in the EOC Operations room, and one (1) console will be installed at 49 Keyton Drive in Radio Services room.

B. The Contractor shall utilize the existing UPS-protected outlets currently powering the current dispatch consoles for the new dispatch consoles.

C. The Contractor shall be responsible for any electrical upgrades required should the electrical configuration of the existing outlets not be suitable for the Contractor's design.

D. The pre-bid site visits will include the EOSCC and the Contractor shall be responsible for ensuring that an adequate number of outlets and circuits are present to support their equipment needs.

E. The Contractor shall install the supporting equipment for the dispatch consoles in the County's IT equipment room at the EOSCC.

F. The Contractor shall furnish and install the appropriate auxiliary and interface components to connect the conventional analog resources to the P25 system.

8.2 Backup Dispatch Center

A. The Contractor shall replace the existing software based dispatch console positions and install eleven (11) new software based dispatch console positions.

   a. The County will provide the required computers as dictated by the selected Contractor's specifications

   b. The Contractor shall provide their requirements and technical specifications for the County-provided computers in their proposals

B. The Contractor shall furnish and install the new software based dispatch console applications onto County-provided computers.

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C. The Contractor shall replace the existing eleven (11) standalone backup control station radios with P25 Phase 2 radios with encryption.

   a. The Contractor shall test and reuse the existing control station antenna combiner system and antennas

8.3 General

A. The County will utilize the existing dispatch furniture at all dispatch locations that are a part of this Project.

B. The LCD display for the dispatch consoles shall be a 22-inch, touch-screen model, and be installed into the existing support structures.

C. Operators shall be able to perform all functions through the graphical user interface (GUI).

D. The GUI shall be designed so that the number of items which will appear on the screen at a given time shall be minimized thereby reducing the potential distractions to the operators.

E. Operators shall not be required to access another screen display in order to perform a radio dispatch function.

F. The console electronics shall use a distributed IP based multi-processor concept and shall employ a physical architecture that consists of servers, routers, LAN/WAN equipment, conventional channel interfaces, instant recall recorder, and dispatch operator positions.

G. The GUI shall be flexible allowing authorized personnel to determine which functions are available at each operator position, which channels are available, how these channels appear on the screen and the names associated with channels, channel options, auxiliary functions, and indicators.

H. The console shall support a minimum of 1024 resource modules, one hundred (100) audio sessions, and the Contractor must identify the number of Simul-select patches supported.

I. Each channel or auxiliary function shall be referenced by alphanumeric characters, not numeric only or cryptic references.

J. For personnel safety and equipment protection, all console equipment shall be grounded to the local building ground system.

K. The Contractor shall coordinate the location of the equipment ground with the County.

L. The Contractor shall provide any other equipment racks, grounding and bonding, and miscellaneous hardware and components required for completion of the dispatch console/backup radio installation.

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M. The County's Division 27 document is a document that governs cabling in IT environments including the EOSCC IT equipment room and the Backup Dispatch Center. Exhibit A.5 - Technology Systems Design and Installation Guidelines (Division 27).

8.4 Dispatch Center Timing/Synchronization

A. The Contractor shall provide a new redundant time synchronization system so that all systems are synchronized to a common time source.

B. The County systems that require connection to the system include the following:

a. Dispatch console systems

b. CAD/RMS systems

c. Voice logging recorder systems

d. Clocks

C. The Contractor shall work with the County and shall be responsible for interfacing to the new time synchronization system so that all systems are synchronized to a common time source.

D. The Contractor shall be responsible for interfacing the dispatch console system to the County's Computer Aided Dispatch time synchronization system so that all time-sensitive systems are synchronized to a common time source.

E. The Contractor may use the existing wiring and cabling if it is suitable for use with their equipment.

8.5 Console Common Electronics Equipment

A. The common console electronics equipment such as servers, routers, external hard drives, conventional interface units and LAN/WAN equipment shall be installed in equipment racks within the County's IT equipment room at the EOSCC, and within the back equipment room at the Sheriff's Office IT facility.

B. Space shall be provided for front and rear servicing of the equipment.

C. The Contractor shall provide scaled layout drawings in their proposal, for the proposed electronics equipment and associated hardware.

D. The Contractor shall work with the County's personnel to identify the final location for the installation of the console common equipment racks if necessary.

E. Figure 2 below depicts the equipment cabinets installed in the EOSCC IT equipment room.

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Figure 2 - EOSCC County IT Room Cabinets

8.6 Console System Interfaces

A. The dispatch console electronics equipment shall provide interface to the following subsystems:

a. Voice Logging Recorder Interface

b. Conventional Channel Interface

c. Call Director telephone headset audio

8.6.1 Aux I/O Functions

A. Currently there are no Aux I/O connections to the dispatch consoles at either dispatch facility.

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B. The County does not foresee the need for Aux I/O systems at either dispatch facility so the Contractor shall not include this equipment in their proposal unless required by the Contractor to meet other requirements of this RFP.

8.6.2 Conventional Channel Interface

A. At the EOSCC Primary Dispatch Center, the console system shall be connected to conventional channel interfaces or "gateways" that will facilitate the interface of analog resources.

B. The console systems shall support conventional analog interfaces to facilitate communications interoperability with a variety of outside agencies and local interface technologies.

C. At a minimum, the gateways shall support various radio channel interfaces and shall be capable of 2-wire and 4-wire audio and tone and E&M for local control of radio channels, and provide local control for analog resources such as FIN, control station radios, and the VHF Fire Paging repeater.

D. The Conventional Channel Interface shall provide the tone control functionality to enable the "Repeater Disable" and "Repeater Enable" functions.

E. At the EOSCC Primary Dispatch Center, the Contractor shall provide eight (8) additional conventional channel interface ports to facilitate the interface of future analog resources.

8.7 Agency Partitioning

A. The console system shall allow multiple agencies to share a common system while maintaining full control over and functional operation of their respective resources.

8.8 Centralized Fault Management Network

A. The console system shall provide for robust system fault management from a centralized location. Secondary remote fault management from an alternate location shall also be provided.

B. Primary network management consoles shall be provided at two (2) County locations:

a. The IT computer room at the EOSCC

b. The EOC-A Control Point equipment room at 49 Keyton Drive, Daytona Beach, Florida

C. Access to the fault management system shall be protected from unauthorized access without proper credentials and security clearances.

D. The Contractor shall include descriptions in their proposal of failure scenarios and discuss all redundant features and the time to accomplish switchovers.

E. Redundancy and resiliency may be accomplished through IP-based and/or Ethernet-based technology.

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8.9 Loss of Console LAN

A. The Primary and Backup dispatch centers will each be collocated with a geo-redundant master core equipment site.

B. A loss of connectivity to the wide area trunked simulcast system network shall provide a clear indication of a network failure to console operators and supervisors so that they may take appropriate action to implement their backup systems.

8.10 Diagnostics

A. The console system shall be equipped with a number of diagnostic subsystems that shall continuously monitor and verify the correct operation.

B. Diagnostic capability shall be distributed among independent and redundant subsystems and shall not rely on one central diagnostic circuit.

C. Redundant equipment shall be automatically activated, and diagnostic information shall be logged.

D. Diagnostic messages shall be presented in an easy to read format.

E. Diagnostic systems that require a cross-reference of an error code to a fault message shall not be acceptable.

8.11 End-to-End Encryption

A. The console systems shall provide a high level of security by supporting end-to-end AES256 encryption of selected talk groups that are configured for encrypted operation.

8.12 Console Patching

A. The dispatch console system shall be capable of patching multiple P25 trunked and/or conventional channel resources.

B. The dispatch console system shall be capable and equipped to enable the setup and storage of a minimum of twenty-four (24) unique patch scenarios.

C. The dispatch console system shall at a minimum, support twelve (12) active patches from each dispatch operator position.

D. The Contractor shall specify the total number of patches, on a temporary or permanent basis, that may be established from each operator position and the total number of patches supported by the system.

E. The dispatch console system shall provide for the flexible patching of talk groups without the need for “double vocoding” of talk groups.

F. A patching window will identify all defined patches and patches in active operation at any moment.

G. All channel modules shall provide a displayed indication when a talk group or channel is involved in a patch.

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H. The dispatch console patch function shall support the patching of trunked talk groups to conventional channel and analog resources.

I. It is essential that the communication resources to be patched within the system occur with as little delay as possible in bringing the patched system to a transmit ready state.

J. It is desired that an access time of less 250 milliseconds be accomplished for each patch to minimize the loss of words and syllables.

K. The Contractor shall discuss the method to be used to begin setup of the patched system while a primary system voice transmission channel is being setup by the trunked radio system network control.

L. In addition, it is desirable that there be no unnecessary hang time at the end of any transmission after a radio user releases their transmit key.

8.13 Channel Control Requirements

A. Each channel control window shall contain the specific command buttons and indicators required to control the corresponding base station/P25 talk group.

B. Each channel control window shall be supplied with the following minimum functions and features:

a. Name - an alphanumeric name of a channel or talk group

b. Call indicator - flashes when receive activity is present

c. Transmit indicator - illuminated whenever channel is keyed; including keying from a parallel remote control point or parallel console position

d. Repeater Enabled/Repeater Disabled for conventional resources

C. The following control functions shall be provided by on screen command buttons:

a. Transmit - provides independent and direct keying of a channel

b. Mute - mutes the individual channel to a predetermined level without affecting other channels. Once muted, the channel shall remain muted until unmuted by the console operator or it shall automatically unmute if the channel is selected. When deselected, it shall revert back to the muted condition

c. Select - routes the channel audio to selected speaker output and allows the channel to be keyed via the system transmit function or foot pedal. Any previously selected channel returns to unselected status

d. Repeater Disable - Disables the repeat function of conventional tone-controlled conventional base station repeaters such as the NPSPAC Mutual Aid repeaters

e. Repeater Enable - Enables the repeat function of conventional tone-controlled conventional base station repeaters such as the NPSPAC Mutual Aid repeaters

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D. The Contractor shall determine the station control configuration of the County's current equipment, including frequency assignments, conventional paging and signaling, method of control, multiple frequency, and/or multiple receiver stations, etc. and ensure that the proposed dispatch equipment support these existing configurations and capabilities.

8.14 Common Dispatch Console Functions

A. Each of the radio dispatch consoles shall provide all controls that apply to the various channel/talk groups and auxiliary functions for the console.

B. Operator positions shall be PC-based, utilizing equipment that is in current production at the time the system is staged to provide a long equipment support life.

   a. The Contractor proposal shall include this equipment in Exhibit H End of Manufacture/End of Maintenance Support in this RFP.

C. The operator position application shall be Microsoft Windows based.

D. The Contractor shall identify the proposed version of operating system and provide a description of the computer equipment proposed for the Project.

E. Contractors shall include in their response their ability to provide the following features and functions as described in 8.14.1 through 8.14.49.

8.14.1 User Login Accounts

A. Each operator position and supervisory position shall require a valid user login and security password to access the console system and its capabilities.

B. The system shall provide multiple levels of access security for different levels of system usage.

8.14.2 Network Link Failure

A. The console system shall notify the operator and associated supervisory positions of a network link failure between the operator position and the console network control system and between the console network control system and the P25 network control system.

8.14.3 Loss of Wide Area Trunking/Failsoft

A. The console system shall notify the operator and associated supervisory positions of a system failure indicating a loss of wide area trunking and a failsoft condition if applicable.

8.14.4 Supervisory Control

A. The Supervisors' consoles shall provide takeover control to prevent other dispatch consoles from keying repeaters or base stations for each channel supported by parallel consoles.

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B. Supervisory consoles shall be capable of overriding transmissions from other consoles and field units.

8.14.5 Full Duplex

A. The console shall operate in the full duplex mode on properly equipped conventional channel resources and the P25 trunked system so that a dispatcher can simultaneously transmit and receive on duplex RF channels without having to release the transmit function.

B. The console shall operate in the full duplex mode even when headsets are not being used as long as the speakers are not configured to mute during dispatcher PTTs.

8.14.6 Dispatch Console Priority

A. All the P25 trunked channels and all conventional channels shall be properly equipped and capable of supporting console priority.

B. The console shall have wireline priority over a field unit and shall have the capability to preempt the field unit's repeat transmit audio from the system.

8.14.7 Select Speaker

A. Each operator position shall be equipped with one (1) select speaker and shall provide audio from the selected channels/P25 talk groups, with an independent volume control.

B. A volume level display shall be provided for each channel; as well as a select speaker audio level adjustment that ranges from silent to full volume.

8.14.8 Unselect Speaker

A. Each operator position shall be equipped with a minimum of one (1) unselect speaker and shall provide audio from unselected channels/ P25 talk groups, with an independent volume control for the unselect speaker.

B. A volume level display shall be provided for each channel; as well as an unselect speaker audio level adjustment that ranges from silent to full volume.

8.14.9 Unselect Audio Mute

A. A timed unselect muting function shall be provided that reduces the audio level of all unselected channels to a predetermined level for a programmed period of time.

8.14.10 Speaker Volume Controls

A. Volume controls shall be provided for control of each speaker.

8.14.11 Individual Volume Adjust

A. This function shall be provided for each talk group or channel on the console.

B. Associated status indicators shall continuously show whether the channel is in the full or adjustable volume mode.

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C. The volume shall revert to normal level when placed in select status and volume is adjusted by the Select Audio volume control.

8.14.12 Instant Recall Recorder

A. Each console operator position shall be equipped with an Instant Recall recorder that is integrated into the radio system console.

8.14.13 Headset and Jacks

A. Two (2) headset jacks per operator position shall be installed at locations convenient to the operator.

B. The headset jacks shall support both 4-wire and 6-wire configurations and be configured during installation.

C. When a headset is inserted into the jack, the operator shall have the capability of routing selected audio to the headset and/or selected speaker.

D. Audio from the unselected channels shall remain routed to the unselected speaker output.

E. The selected speaker audio shall operate normally with the headset removed from its associated jack or when telephone audio is routed to the headset.

F. Individual headset volume controls for radio and telephone audio shall be provided and shall not affect the volume control setting of the selected speaker.

8.14.14 Microphone

A. A high quality desktop microphone having a uniform frequency response and a minimum front-to-back discrimination of 15 dB shall be provided at each operator position.

B. The microphone shall be resistant to interference, such as transmitting hum from lights and other devices used in the proximity of the console.

C. Final selection of microphone types shall be determined during the preliminary design review.

8.14.15 Footswitch

A. Each console operator position shall be equipped with two (2) individual footswitches.

B. The unit shall have a dual pedal footswitch for push-to-talk (PTT) of the selected channel(s) and for enabling CTCSS monitoring for properly equipped conventional channels.

C. The footswitch shall be heavy duty, designed for public safety use, and shall be designed so as not to skid on a smooth flooring surface.

8.14.16 Transmit PTT

A. A color-coded transmit function to control the PTT function for the selected transmitters and/or talk groups shall be provided on the screen or user interface.

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B. The PTT function shall be capable of being enabled by a PTT button on the headset, a PTT indication on the LCD display, and by the foot switch at the position.

8.14.17 Instant Transmit

A. Each operator position including supervisors shall provide an instant transmit function that will allow the dispatcher to quickly transmit on a conventional channel or talk group resource by depressing the instant transmit "button".

8.14.18 Busy Tone

A. A visible and audible alert shall be initiated at the console if the dispatcher attempts to make a call and all trunked channels are busy.

B. When the channel becomes available, the console shall automatically alert the dispatcher with an audible tone.

C. The console shall retain the channel availability for the dispatcher for a predetermined time to allow the dispatcher time to activate the transmit function for a user group.

8.14.19 Talk Group and ID Alias Display

A. The console system shall display the discrete unit ID, emergency ID, the alias name, and the talk group ID of trunked field units and other dispatch positions on each of the console operator positions.

8.14.20 Intercom

A. An intercom function shall be provided to permit the operators to selectively talk to another console position.

B. In the intercom mode, the screen shall list the user-defined names of all consoles and prompt the operator to select the desired console position.

C. The intercom function shall disconnect the keying signal from the transmit circuit in use so that the operator can use the console microphone circuit to communicate solely with any console or parallel remote control unit similarly equipped.

D. Multiple simultaneous intercom conversations between individual consoles shall be possible.

E. The County desires that these intercom conversations be recorded by the voice logging recorder system including time, operator position, and any other information deemed available by the Contractor such as talk group.

F. The Contractor shall describe in their proposal, in technical and operational detail, their proposed solution for recording console intercom audio.

8.14.21 Console Clock

A. The console shall display time in a twelve or twenty four-hour format (user selectable) and day of the year (HH:MM:SS day) at each operator position.

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B. The console clock shall derive its reference time signal from the master time source.

8.14.22 VU Display

A. The console shall present a visual indication of receive and transmit audio levels.

8.14.23 Keypad

A. The console shall have a screen representation of a keypad for numeric data entry.

8.14.24 Keyed Channel Interlock

A. A means shall be provided to lock out control of a channel from other console positions if that channel is already keyed from another console position.

B. The supervisor position can override this feature.

8.14.25 Channel Name

A. Designated channel control modules shall include a minimum of twelve (12) character alphanumeric display symbols to identify the channel.

8.14.26 Channel Marker

A. Channel Marker provides the ability for an operator to place a periodic marker indicator on a talk channel when speech is not present to notify new arrivals that the dispatch operator is currently busy handling a call on that channel and to standby with new traffic.

8.14.27 Conventional Channel Monitor

A. A monitor function shall be provided to permit the operator to disable the continuous tone controlled squelch system (CTCSS) of any selected conventional base station receiver (if so equipped) in order to permit monitoring of the communications channel prior to making a transmission.

8.14.28 Repeater Disable

A. A means shall be provided to disable the repeat function of conventional tone-controlled conventional base station repeaters.

8.14.29 Repeater Enable

A. A means shall be provided to enable the repeat function of conventional tone-controlled conventional base station repeaters.

8.14.30 Talk group/Channel Select

A. Each talk group or channel shall be capable of independent selection by the dispatcher.

B. The channel window shall provide a visual window indication when the corresponding channel is selected and when it is transmitting.

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8.14.31 Call History Window

A. Each console position shall provide a call history window that allows the operator to review the last twenty (20) calls received at that position.

8.14.32 ID Display Queuing

A. Queuing of at least ten plain English IDs (ID scroll list) on the channel window for standard calls and emergency calls.

8.14.33 Simultaneous Select

A. Controls shall be provided that allow the operator to manually select any combination of console controlled talk groups and base stations for simultaneous transmissions.

B. This mode of operation shall allow the selection of multiple trunked talk groups and/or conventional channels.

C. The combined transmission shall utilize a single trunked channel when involving more than one (1) talk group.

D. The trunked field units shall be able to talk back to the dispatcher directly without having to change the user talk group selector switch.

8.14.34 Multi-Auto Select

A. Pre-programmed groups of conventional radio channels and/or trunked user groups shall automatically be selected by the selection of single command button or keystroke.

B. These groups of channels shall be operator programmable.

8.14.35 Talk Group Call

A. The console system shall support trunked talk group calls on any talk groups programmed in the system with appropriate management approvals.

8.14.36 Selective Call Alert

A. Selected users and all dispatchers shall have the ability to selectively send and receive an alert to and from an individual user on the system regardless of the assigned talk group.

B. The call shall allow an individual to alert another user with a distinctive tone and their individual ID (ID on display radios only).

8.14.37 Private Call

A. A private conversation shall be possible between the console position operator and any properly equipped mobile, portable, or RF control station.

B. This conversation shall not have the ability to be monitored by other units on the system.

C. The County desires that these conversations be recorded by the voice logging recorder system including time, operator position, and any other information deemed available by the Contractor such as talk group and unit ID.

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D. The Contractor shall describe in their proposal, in technical and operational detail, their proposed solution for recording console Private Call audio.

8.14.38 Talk Group/Channel Busy Indicator

A. Dispatch Consoles shall have channel busy indicators to visually indicate that the channel is in use.

8.14.39 Talk Group Merge

A. When operating in this mode, the console shall patch the trunked user talk groups together utilizing only one (1) RF trunked channel.

8.14.40 Talk Group/Channel Cross Patch

A. Shall allow the dispatcher to patch any two (2) or more resources together.

B. The purpose is to allow field units of different conventional radio channels and/or trunked talk groups to intercommunicate directly.

C. If the dispatcher transmits on any talk group or channel included in a patch, then audio shall be heard by all members of the patch.

8.14.41 Talk Group/Channel Audio Cross Mute

A. Dispatch consoles shall include a programmable cross mute feature, which precludes voice communication from a dispatcher's microphone being repeated over loud speakers at other consoles in the dispatch center.

8.14.42 Trunked Announcement Group Calls

A. The console system shall support trunked announcement group calls on any announcement groups programmed into the system, with appropriate management approvals.

8.14.43 Trunked Emergency Calls

A. The console system shall support trunked emergency calls from any user radio programmed in the system with appropriate management approvals.

8.14.44 Emergency Call Alert and Display

A. When a field unit initiates an emergency alert, the console shall provide an audible alert and display the unit ID (alias) of the calling unit in plain English.

8.14.45 Emergency Reset

A. All consoles shall be capable of declaring and receiving emergency alerts from user radios and other operator positions operating on the trunked radio system regardless of the status of the channel control window.

B. Emergency messages shall be indicated by a flashing indicator, an emergency ID character, and an audible alert.

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C. Dispatcher acknowledgment of the message shall silence the audible alert and stop the flashing display.

D. The console system shall be capable of queuing multiple emergency messages in the display stack and the emergency ID character shall continue to flash until all messages have been viewed by the dispatcher.

E. The most recent emergency declaration shall be displayed and the dispatcher shall be able to scroll through the queue to view queued emergencies.

F. The Emergency feature shall be programmable to allow the alert message to be delivered and displayed in predefined ways, including display on the current talk group in use by the person declaring the emergency, and display on a separate pre-defined talk group.

G. The declaring alias shall be displayed on user radios of the same talk group and at the appropriate dispatch operator positions.

8.14.46 Alert Tones

A. The console system shall provide a minimum of three (3) distinct over-the-air tones to be used for alerting purposes.

B. Each alert tone shall be immediately broadcast on the selected talk group, group call or all call, when activated.

C. Tones shall be presented in the headset as side tone audio only, at a reduced volume level to confirm that the tone was generated and sent.

D. The following selections shall be available at a minimum:

a. Alert 1: Steady Alert Tone - shall generate a nominal 1000 Hz steady tone

b. Alert 2: Warbling Tone - shall alternate low and high frequency audio signals

c. Alert 3: Pulsed Alert Tone - shall initiate an automatic sequence, consisting of a nominal 1000 Hz tone, for a period of two (2) seconds

8.14.47 Paging Encoder

A. The console system shall include paging encoder functionality for manual paging and to allow for the configuration of preprogrammed single button function paging.

B. The console system shall include a multi-format paging/signaling encoder that is capable of encoding industry standard two-tone sequential and DTMF signaling formats.

C. The Contractor shall state in their proposal if the paging encoder is standard equipment or if it as a cost option.

8.14.48 Preprogrammed Single Button Function Paging

A. Each console shall be capable of supporting a quantity of pre-programmed single-button paging functions.

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B. The Contractor shall state in their response, the maximum number of pre-programmed buttons per operator position that their console system will support.

8.14.49 Status Messaging

A. Each of the console operator positions and supervisory positions shall be equipped with the ability to receive and display status messaging from user radios.

B. A minimum of one hundred twenty-five (125) different pre-defined messages shall be supported.

C. Typically, text messages will be used to indicate status reports and updates from field units.

D. The ID of the sender shall be displayed in a dedicated status-messaging window on the GUI.

E. The window shall display the message sent, along with the ID and a time stamp.

F. The window shall scroll messages & place the most recent message at the top of the list.

G. Upon receipt of a message, an audible alert shall notify the operator that a new message has arrived and needs to be viewed.

H. Text messages shall include a message requesting to speak with the console operator.

I. The operator shall be able to respond with a group call for a group alias and with an individual call for an individual alias.

J. Text messages shall be archived by the system so that they can be easily reviewed at any time for management or emergency purposes.

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9. USER EQUIPMENT REQUIREMENTS

A. All Contractor provided user equipment shall be P25 Phase 1 and Phase 2 equipped and be fully operational in both the 700 and 800 MHz frequency bands.

B. All Contractor provided multiband user equipment shall be P25 Phase 1 and Phase 2 equipped, be fully operational in both the 700 and 800 MHz frequency bands, and capable or equipped as required for operation in VHF and UHF public safety bands.

C. For public safety portable user equipment, the County requires that Contractor propose only rugged, high-quality, high-tier subscriber equipment models with top and front color displays.

D. For non-public safety, local government users, the County requires that Contractor propose high-quality, mid and lower-tier subscriber equipment that is commensurate with local government communications.

E. The Contractor is expected to offer a range of end user subscriber radio equipment and accessories, to include a variety of options, providing a performance range from the highest quality, highest duty rating, and high performance robust components down to less featured, less mission critical equipment for local government users.

F. The Contractor shall include only equipment that is of current design and manufacture and FCC Type Accepted.

G. All proposed subscriber equipment shall incorporate electronic, alphanumeric displays to provide visual indication of system availability, channel/talk group selection, incoming user ID, call alerts, and operational status such as scan and channel busy.

H. All proposed subscriber equipment shall be capable and equipped to operate in analog, P25 Phase 1 and Phase 2 digital trunked, and P25 Phase 1 digital conventional modes.

I. The determination of which mode the radio operates in shall be an automatic function of the channel or talk group selected by the user.

J. Direct, radio-to-radio, communications (talk-around) capability is required and this capability shall be available using both analog and P25 Phase 1 digital modulations.

K. All Terminal Equipment shall provide voice playback. The Contractor shall describe the length of audio playback and how this feature is used on the radio.

L. Portable High and Mid-Tier public safety radios shall have visual displays on the top of the radios capable of displaying talk group and channel information.

M. The County prefers a single portable radio system architecture to minimize the number of devices that First Responders have to carry.

N. With the requirement to access AT&T FirstNet (AT&T Band 14), LTE access to other wireless carriers, and WIFI in additional to P25 communication capability, the County

Attachment: 20._Exhibit_A_-_Technical_Specifications_-_Revisio (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

prefers a multi-system software radio architecture for portable radios capable of addressing multiple communication requirements.

9.1 MIL-STD and IP Requirements

A. All proposed subscriber equipment shall incorporate heavy-duty construction, weather-sealed enclosures and weather-sealed controls to meet MIL-STD-810 C, D, E, F, and G for water, shock, vibration, dust, humidity, and high/low temperature performance, and the Contractor shall provide these specifications, the test method and procedure referenced with their response.

B. All proposed subscriber equipment shall be capable of operation without significant degradation when subjected to shock, humidity and vibration.

C. All proposed mobile radio equipment shall meet or exceed Ingress Protection (IP) IP54 for dust and water intrusion.

D. All proposed public safety portable radio equipment including microphone accessories shall meet or exceed IP68 for dust and water intrusion.

E. All proposed local government portable radio equipment including microphone accessories shall meet or exceed IP54 for dust and water intrusion.

9.2 Features and Functions

A. All mobile, portable, and control station equipment shall be equipped with “Call Alert” for the selective alerting of individual users and/or user groups.

   a. The Call Alert feature lets a dispatch console or certain radios leave a “page” at an unattended radio or dispatch console

   b. Upon returning to the radio or dispatch console, the called user is notified that someone tried to call them

   c. A Call Alert can be used to trigger an activity such as a making a vehicle’s horn to sound and its lights to flash

B. Emergency Call

   a. The public safety subscriber radios used on the current system have an easily identifiable “Emergency” button, recessed to prevent accidental initiation

   b. When users find themselves in a dangerous situation, they can very quickly use that button to alert dispatchers and other users in their talk group of the situation

C. Encryption

   a. Specific talk groups and user groups may utilize encryption and the new communications system shall support the capability to utilize end-to-end encryption within user talk groups

D. Loss of Trunking Indication

Attachment: 20._Exhibit_A_-_Technical_Specifications_-_Revisio (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

a. The Contractor shall describe the capabilities of the user equipment radios to provide an indication to the user that the trunked system is no longer trunking and or has reverted to one of its failure modes.

b. It is preferred that users have the ability to silence the failure indication tone

E. Time-Out-Timer

a. A transmitter time out timer shall be provided to limit key down time

F. Priority Scan/Monitoring

a. This feature makes it possible for a radio user to scan talk groups in their system, and to mark up to two (2) conventional channels or talk groups in their scan list as "Priority"

b. A non-priority conversation will be interrupted by Priority 1 or Priority 2 talk group activity

c. A priority channel or talk group is monitored more often than other channels, and will continue to be monitored if listening to another channel or talk group of lesser priority is captured

G. Non-Priority Scan

a. This feature makes it possible for a radio user to scan between multiple systems, talk groups, or conventional channels

H. "Man-Down" Function

a. This functionality will initiate an emergency alarm on the system, in the event that a radio (and presumably its operator) has been in a static horizontal position for a certain amount of time

b. This functionality allows for dispatchers and other members of the talk group to be notified that a user is in need of assistance, even if the user has been incapacitated and is unable to initiate the emergency on their own

I. Multi-Band Capability

a. The 700 MHz band and the 800 MHz band are considered as a single band for the purposes of this section

b. This functionality provides the capability for a single radio to operate on more than one radio frequency band, such as 700/800 MHz, VHF, and UHF

c. This would eliminate the need for users who need to operate on multiple systems in different frequency bands to carry multiple radios

d. The Contractor shall propose subscriber radio option with this functionality

J. GPS Location Operation

Attachment: 20._Exhibit_A_-_Technical_Specifications_-_Revisio (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

a. This functionality provides the capability to remotely monitor the location of radio units

b. When combined with the "Man Down" functionality, this becomes a very powerful tool for quickly coming to the aid of fallen users in need of assistance

c. The new system shall include the option of this capability within the radio subscribers

d. In addition, it is desired by the County that the GPS antenna be integrated within the subscriber radio or its antenna and that an additional external GPS unit and antenna not be required for this functionality

e. The Contractor shall describe its method or methods of providing GPS information.

i. Does the Contractor support in-band GPS?

ii. Does the Contractor support Tier 2 location services, which are part of the P25 standards?

iii. How are these methods supported in the Contractor's P25 system and what products do they interface to?

K. Digital Filtering/Noise Cancellation

a. Subscriber radios for the new system shall incorporate software/hardware noise reduction capability to improve user safety by ensuring that transmissions are clearly understood

b. There have been occurrences where subscriber radios have experienced receiver desense in environments where the signal level from the desired radio system is marginal and there are high levels of out-of-band signals from commercial carrier or other systems.

i. The Contractor shall provide detailed technical information on their equipment's ability to reduce harmful receiver interference and desense through the use of switched preselector and band pass filters, low-noise amplifiers and AGC, and strong signal intermodulation performance

c. The County reserves the right to test all Contractor-proposed radio's ability to eliminate noise in real public safety situations prior to approving them for purchase

L. Intelligent Radio Display

a. Intelligent radio display feature enables the control of audio level, lighting, and tone alerts of the radio

b. For example, a user in bright sunlight or high-noise environments need to be able to increase the lighting or audio level, or if the user is conducting ongoing, covert surveillance, they need to be able to create a profile that provides lower lighting with subdued alert tones and audio

Attachment: 20._Exhibit_A_-_Technical_Specifications_-_Revisio (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

c. The Contractor shall state if their proposed subscriber radios support this capability

M. Alphanumeric Texting

a. This functionality provides the capability for dispatchers to send text messages, in place of voice transmissions

b. This feature would be very helpful in situations where public safety officers need detailed information such as location addresses or suspect descriptions

c. Rather than relying on memory or the need to write down the information, the user can go back and read the information stored in the radio

d. The new system and the available subscriber radios shall be capable of supporting this capability

9.3 GPS Specifications

A. Accuracy specifications are for long-term tracking, 95th percentile values, > 5 satellites visible at a nominal signal strength of -130 dBm.

a. TTFF Cold Start < 1 minute

b. TTFF Hot Start < 10 seconds

c. Horizontal Accuracy < 10 meters

9.4 Mobile Radio General Requirements

A. The mobile radio shall operate from a nominal 13.8 Volt DC primary power source, and shall be equipped with suitable reverse polarity protection to avoid damage if the radio or battery were to be incorrectly installed.

B. The mobile radio shall be protected against voltages above 14 VDC and operate at voltages as low as 11 VDC without emitting any spurious emission or loss of programming.

C. Mobile radios shall have a transmitter output power of 30 watts minimum, and furnished to operate on all channels in the 700/800 MHz bands.

D. All existing mobile equipment removals shall be part of this procurement.

E. All new mobile equipment installations, cabling, brackets, etc. shall be part of this procurement.

F. The Contractor shall assume that all mobile removals and installations will be performed at County facilities.

9.5 Mobile Radio Configurations and Options

A. The mobile subscriber equipment shall be a universal mount (front/rear) radio.

B. Mobile equipment shall be available for motorcycle, watercraft, and aircraft applications.

Attachment: 20._Exhibit_A_-_Technical_Specifications_-_Revisio (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

C. Open-air mobile units and all external headsets, microphones, and speakers shall be weatherproofed and suitable for outdoor installation.

D. A remote mounting kit and universal mounting kit shall be provided for designated units.

E. The mounting kit shall include control cable, power cable, external control head and microphone, external speaker, and all mounting brackets and interconnecting cable shall be supplied.

F. When front mounted, the control unit shall become an integral part of the radio set housing.

G. The speaker may be internal or external where required and shall be environmentally weatherproof in its design and operation.

H. All mobile radios shall be equipped with a palm-type heavy-duty microphone.

I. Different microphone options as described below shall be provided to specially designated radio:

   a. Heavy-duty palm microphone

   b. A hand-held control head microphone with the capability of selecting talk groups and channels, adjustment of volume, and activation of the emergency function

   c. A noise canceling microphone for use in a high-noise environment

J. Unless otherwise specified, the Contractor shall provide a roof mounted 3 dB gain, heavy-duty mobile antenna for each mobile.

K. The mobile antennas shall mount in a 3/4-inch hole and be of all brass construction with O-ring seals.

L. Designated mobile radio units shall be equipped with an external speaker mounted in the vehicle.

M. Mobile radios equipped with an external speaker shall provide a minimum audio power output of 10 watts at no greater than 3.0% audio distortion.

N. Dual Control Heads: designated mobile radios shall offer dual control heads for a select units and shall be interfaced as required with the current vehicle intercom and/or headset systems.

O. Contractor shall provide per unit pricing for public safety and local government mobile user equipment and accessories based upon the general tier descriptions and feature-sets listed below:

Attachment: 20._Exhibit_A_-_Technical_Specifications_-_Revisio (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Radio Features for Mobile Radio Equipment	Low-Tier	Mid-Tier	High-Tier
VHF/UHF/700/800 MHz Capable			X
700/800 MHz Capable and Equipped	X	X	X
Group/Channel Selector, 16 Position	X	X	X
Volume Control	X	X	X
Minimum Channel Capacity	512	1000	3000
Dual Control Heads		X	X
Scan Control with Priority Scan	X	X	X
GPS	X	X	X
Wi-Fi 802.11 b/g/n		X	X
LTE Option		X	X
Alphanumeric Display Backlit	X	X	X
Full Keypad with Backlit Keys		X	X
Emergency Button	X	X	X
Over-The-Air-Programming (OTAP)	X	X	X
AES256 Voice Encryption		X	X
Multi-Key Encryption (64 minimum)		X	X
Over-The-Air Rekeying (OTAR)		X	X

Table 23 - Mobile Radio Features

9.6 Portable Radio General Requirements

A. The radio set shall be small, lightweight, and rugged and shall be capable of withstanding severe operating conditions.

B. The portable housing shall be constructed of high impact resistant material and shall be sealed and gasketed to protect internally mounted circuitry against dust, foreign particles, moisture, and splashing water.

C. Opening the battery compartment shall not break the seal to the radio circuitry.

D. All proposed portable subscriber radios shall be less than 24 ounces in total weight with attached standard battery, not including external accessories.

E. The portable radio shall fit comfortably in the hand and permit one hand operation.

F. Controls shall be top-mounted rotary controls with positive stops for volume and channel mode selection.

G. Control placement must be sufficient to allow operation wearing gloves as typically used by the fire service.

H. A sealed transmitter "push-to-talk" (PTT) switch shall be provided on the side of the unit, and an emergency switch shall be provided for user-defined quantities of radios.

I. Transmitter RF power output shall be a minimum of 3.0 watts.

J. All proposed portable radios shall be equipped with a personal, desktop-style single battery charger, a spare battery of the same type and duty cycle rating as the primary battery provided with the radio, and a standard belt clip.

Attachment: 20._Exhibit_A_-_Technical_Specifications_-_Revisio (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

K. Portable radios not operating in a vehicular charger or adapter, shall provide no less than 500 milliwatts of audio output power at no greater than 1.5% audio distortion.

L. All proposed portable radios shall be equipped standard with a 1/2-wavelength whip style antenna operational across the 700-800 MHz frequency bands per current FCC requirements.

M. The Contractor shall describe the capabilities of the proposed portable radios to provide an indication to the user that the trunked system is operating in a mode that is not normal; it is preferred that users have the ability to silence the failure indication tone.

N. The Contractor shall provide a matrix showing all models of portable radios available and shall include the dimensions and weight of each model.

O. The Contractor shall provide per unit pricing for public safety subscriber equipment and accessories based upon the general tier descriptions and feature-sets listed below:

Radio Features for Portable Radio Equipment	Low-Tier	Mid-Tier	High-Tier
700/800 MHz Capable and Equipped	X	X	X
VHF/UHF/700/800 MHz Capable			X
P25 Phase 1 and Phase 2 Equipped	X	X	X
Top-Mounted Group/Channel Selector, 16 Position	X	X	X
Top-Mounted Volume Control	X	X	X
Top and Front Mounted Color Displays		X	X
Minimum Channel Capacity	512	1000	3000
3,100 mAh Li-Ion Battery		X	X
2,400 mAh Li-Ion Battery	X		
Vehicular Portable Charger	X	X	X
Speaker Mic (w/o Antenna)	X	X	X
Speaker Mic Antenna		X	X
GPS	X	X	X
Wi-Fi 802.11 b/g/n		X	X
LTE Option		X	X
Scan Control with Priority Scan		X	X
Alphanumeric Display Backlit		X	X
Full Keypad with Backlit Keys	X	X	X
Emergency Button	X	X	X
Over-The-Air-Programming (OTAP)	X	X	X
AES256 Voice Encryption		X	X
Multi-Key Encryption (48 minimum)		X	X
Over-The-Air Rekeying (OTAR)		X	X
Intrinsically Safe Option		X	X

Table 24 - Portable Radio Features

Attachment: 20._Exhibit_A_-_Technical_Specifications_-_Revisio (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

9.7 Portable Radio Configurations and Options

A. The Contractor shall propose at a minimum Lithium-ion (Li-Ion) "smart" rechargeable batteries, which shall be quickly and easily removed from the radio.

   a. The proposed "smart" battery technology shall be capable of monitoring and reporting its condition to the operator

   b. Battery life for portable radios shall be based on a 10% transmit, 10% receive, 80% stand-by duty cycle, measured in accordance with EIA RS-316 at 250 milliwatts of audio output, shall be at least twelve (12) hours

   c. Batteries shall be capable of full recharge in one (1) hour or less

   d. Batteries provided shall be capable of withstanding a 3-foot drop test to concrete without damaging battery performance or visibly cracking the battery housing

   e. The Contractor shall provide in the proposal a list of time parameters for each type of battery and capacity available for each type of portable radio

B. External accessory connections shall be provided as an integral part of the radio, for the connection of various types of remote speaker/earplug/microphone/ antenna combinations.

C. A flexible antenna shall be provided and shall connect to the appropriate connector on the radio or speaker-microphone.

   a. Antennas mounted on the radios shall be 1/2-wave whip type

D. A belt-mounted carrying case shall be provided.

E. Speaker-Microphones

   a. Speaker microphones (without antennas) shall be water resistant and utilize coiled cords

   b. Speaker microphones shall use noise cancelling technology

   c. It shall be possible for an operator to remove the speaker microphone from a portable radio without the use of tools, and then operate the radio in normal fashion

F. Single-unit Charger.

   a. The portable radio shall operate in the receive and transmit modes while being charged in the single unit charger

   b. The charger shall operate from a 120 VAC, 60Hz single-phase source

G. Multi-unit Charger.

   a. The portable radio shall operate in the receive and transmit modes while being charged in the multi-unit charger

Attachment: 20._Exhibit_A_-_Technical_Specifications_-_Revisio (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

b. A multi-unit fast charger shall provide proper charging of batteries whether in or out of the portable radios

c. The charger shall operate from a 120 VAC, 60Hz single-phase source

d. The multi-unit fast charger shall be capable of charging a minimum of six (6) batteries simultaneously, and have a battery status indicator for each battery position

H. Vehicular Charger

a. The portable radio shall be capable of operating in both the receive and transmit modes while being charged in the vehicular charger

b. The vehicular charger shall be capable of charging a battery whether on or off the respective radio (without the need for a spacer or adapter) and operate from a nominal 13.8 VDC vehicular source

c. The vehicular charger shall be designed in a manner that will allow full view of the portable radio alphanumeric display

I. Intrinsically Safe

a. UL will approve portable radios and accessory equipment to ANSI/TIA-4950 which has replaced the FM3610_88 classification rating

b. The Contractor shall furnish intrinsically safe portable radios, batteries and accessories that shall be approved to the TIA-4950 Standard for use in Division 1, Class I, Groups C, D, Class II, Group E, F, G and Class III hazardous classified locations. This will be required for Hazmat operations in particular.

9.8 Control Station Radio Configurations and Options

A. Control stations shall be provided that operate from 120 VAC, 60Hz primary power.

B. All radio equipment shall be FCC type accepted under Part 90 of the FCC Rules and Regulations.

C. Control stations shall have a transmitter rated output power of 30 watts minimum, and furnished to operate on all channels in the 700/800 MHz bands.

D. Control stations radios shall be P25 Phase 1 and Phase 2 capable and equipped.

E. All public safety control stations radios shall be capable of AES256, multi-key encryption.

F. Control stations shall be configured and supplied with a speaker and desk-stand type microphone with a PTT transmit switch.

G. The following requirements shall apply for control station radio installations where a dedicated antenna and transmission line is required:

a. The new control stations may utilize the existing indoor and outdoor antenna systems only if specified in this RFP

Attachment: 20._Exhibit_A_-_Technical_Specifications_-_Revisio (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

b. For new installation locations, the control station antenna system shall use an Antenex Y8063 yagi model or equivalent

c. For pricing purposes, the Contractor shall assume 100 feet of 1/2-inch foam LDF transmission line length for a typical control station installation

d. All installation hardware, mounts and masts, transmission line surge suppressors, ground kits, entry port boots, grounding conductors, etc. shall be provided by the Contractor

H. The following requirements shall apply for multiple control station radio installations where a shared combining and antenna system is required:

a. The new control stations may utilize the existing indoor and outdoor antenna systems only if specified in this RFP

b. For the installation of multiple control stations, the Contractor shall propose a control station combining system with dual antennas (individual antennas for transmit and receive)

c. The control station antenna system shall use a dbSpectra DS7A06F36D-N model dual antenna or equivalent

d. For pricing purposes, the Contractor shall assume two (2) 100-foot runs of 1/2-inch foam LDF transmission line length for each control station combiner system

e. All installation hardware, mounts and masts, transmission line surge suppressors, ground kits, entry port boots, grounding conductors, etc. shall be provided by the Contractor

I. Digital Remote Control Unit

a. Digital remote control units where required shall be compact desktop style units for the remote operation of the control stations

b. The remote control unit shall be capable of controlling all conventional and trunked features of the control station radio such as modes, talk groups, channels, emergency, and typical mobile radio control head functions

J. Alerting Capabilities.

a. Where required, control stations shall be equipped to provide a switched output that may be connected to signaling and control equipment typically used for fire station alerting

b. Activation of the switched output shall be controlled by the transmission of a Call Alert message

Attachment: 20._Exhibit_A_-_Technical_Specifications_-_Revisio (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

9.9 Fleet Mapping and Subscriber Equipment Programming

A. The Contractor, with input from the County, shall be responsible for development and programing the fleet map assignments for the entire system infrastructure.

B. The Contractor shall be responsible for developing the fleet mapping for all County system agencies and include all mutual aid and interoperability talk groups.

C. The Contractor shall be responsible for the final subscriber equipment templates and programming of the subscriber equipment.

Attachment: 20._Exhibit_A_-_Technical_Specifications_-_Revisio (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

10. FAA AND FCC FILINGS AND AUTHORIZATIONS

10.1 FAA Study and Determination

A. The Contractor shall be responsible for filing and obtaining any and all FAA studies, FAA determinations, and site surveys prior to construction, and for the notification of the FAA upon the commencement and the completion of construction by the filing of the appropriate forms and submittals.

B. This requirement includes any and all studies required for the addition or modification of system antennas and frequencies for all new and existing tower structures.

10.2 FCC Application, Coordination, and Licensing

A. The County will be responsible for the development of the 800 MHz frequency plan and for the initial coordination and licensing of the frequencies.

B. The County will obtain the FCC licenses for all sites and frequencies using the antenna heights and a default set of technical parameters for antennas, emissions, transmitter power, and effective radiated power.

C. The Contractor shall be responsible for any and all modifications to the County licenses including frequency coordination, engineering documentation, submittals, FCC applications and filings, waivers, etc. for the licensing of the Contractor's final communication system design.

D. The Contractor shall be responsible for any and all frequencies and licensing work that is not included in the County's frequency plan detailed in Tables 2 through 5 as required in this RFP.

E. The Contractor shall be responsible for any and all fees levied by the frequency coordinators.

10.3 FCC Antenna Structure Registration

A. The Contractor shall be responsible for all work, studies, and costs for obtaining or modification of all FCC Antenna Structure Registrations required for antenna structures provided and any existing towers modified in this Project.

10.4 Environmental, Tribal, Historical, MPE, EME/NIR, and Other Studies

A. The Contractor shall be responsible for obtaining all FCC, NEPA, SHPA and any other environmental studies and notifications, and any other requirements needed to obtain the FCC Antenna Structure Registration for tower sites provided by the Contractor in this project.

B. The Contractor shall be responsible for obtaining any and all required environmental, tribal, historical, maximum permissible exposure, electromagnetic exposure, non-ionizing radiation, or any antenna structures provided and any existing towers modified in this Project.

Attachment: 20._Exhibit_A_-_Technical_Specifications_-_Revisio (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

C. The Contractor shall be responsible for any and all payments to these organizations including historical organizations and Indian tribes.

10.5 AM Detuning

A. If applicable, the Contractor shall be responsible for all work, studies, and costs for obtaining any and all AM detuning services for tower structures provided or modified in this Project including the assessment and correction of pattern distortion where wireless antenna structures (towers) can unintentionally interfere with an AM broadcast station's antenna pattern.

10.6 Receiver Desense and Degradation

A. The County requires that tower-top amplifier preselector filters be furnished and installed and that transmitter bandpass filters be furnished and installed for the new 800 MHz antenna systems where vertical separation cannot be achieved on the supporting structure.

B. The County requires that no 800 MHz receiver installed at any site by the Contractor shall be desensed by more than 1.0 dB due to the presence of 800 MHz signals when all of the 800 MHz transmitters installed at the site are keyed simultaneously.

C. The Contractor shall provide calculations in their proposal showing that appropriate filtering equipment has been provided in their proposal.

D. The Contractor shall perform this testing during the acceptance testing and demonstrate to the County that the installations at all 800 MHz tower sites are in compliance.

Attachment: 20._Exhibit_A_-_Technical_Specifications_-_Revisio (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

11. UPS POWER SYSTEMS FOR COMMUNICATION SITES

A. All new communication systems equipment at each tower site shall be powered exclusively by a -48VDC power plant system.

B. The Contractor shall furnish and install all new 120/240VAC circuits, rectifier systems, batteries, and distribution equipment as required based upon the Contractor's equipment power consumption and the reserve loads specified in this RFP.

C. The Contractor shall furnish and install the appropriately sized 240 VAC circuits including all breakers, wiring, conduit, and receptacles to provide at least two (2) circuits to each rectifier rack at each tower site.

D. The Contractor shall be responsible for any renovation work at existing communication facilities that may be required to support the implementation of their proposed communications system.

E. The Contractor shall be solely responsible for the assessment of the communication system facilities, and for the development of the scope of work and the costs associated with these renovations.

F. The renovation work may include the relocation of existing equipment, racks, antenna systems, and other components installed at the sites.

G. The Contractor shall furnish all plans and specifications, and all materials and labor necessary to complete the installation of the DC power plant systems at the specified communication sites.

11.1 DC Power Plant Systems Requirements

A. The County communication tower sites shall utilize -48VDC power plant systems to power all new conventional and P25 trunked communication system, control equipment, and network connectivity equipment as opposed to 120/240 VAC UPS systems.

B. All base stations and repeaters shall be powered by the -48VDC power plant system.

C. All ancillary site equipment including tower-top preamps and receiver multicouplers, GPS reference oscillators, etc. shall be powered by the -48VDC power plant system.

D. The Contractor shall provide all batteries, battery mounting or racking facilities, float-type battery chargers/rectifiers, low voltage disconnect, and DC load centers.

E. The DC power systems shall be designed based upon the following parameters:

a. N + 1 (For redundancy)

b. Rectifiers shall operate in ambient temperatures of 0º C to +50º C

c. -48 VDC output

d. Load shedding:

Attachment: 20._Exhibit_A_-_Technical_Specifications_-_Revisio (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

i. A minimum of eight (8) hours run time for the network equipment including microwave, MPLS, site alarms, site switches, routers, etc., required for site connectivity. The Contractor shall include site GPS or other equipment to the 8-hour run time requirement if loss of power to the equipment creates a substantial delay once power is restored the site.

ii. A minimum of two (2) hours run time for the base station transceivers and supporting equipment.

e. When sizing the system, the Contractor shall consider the required full load run time for the equipment provided in this Project, plus a growth factor equivalent to a 50% increase in load.

f. Battery chargers/rectifiers shall provide sufficient current capability to simultaneously charge a discharged battery bank to full capacity in a 24-hour period

g. Automatic low-voltage disconnects shall be provided for the radio and microwave equipment to remove the load from the battery plant at the point when the battery voltage reaches a preset dropout voltage level

F. The battery chargers/rectifiers shall be rack-mounted in an EIA 19-inch rack.

G. The battery chargers/rectifiers shall be provided with AC circuit breakers, DC circuit breakers, minimum 2% accuracy DC voltmeter and DC ammeter, current limiting and high voltage shutdown circuitry, continuous float and equalizing voltage adjustment, and 24-hour equalizing timer and these features may be integral to the chargers/rectifiers or provided in separate rack mount assemblies.

H. Battery chargers/rectifiers shall be capable of battery eliminator operation and power switching and disconnect capability such that the rectifiers, batteries, and commercial power sources may be separately isolated in a manner whereby each component may be serviced safely.

I. The switching and disconnect capability shall be designed such that radio communications system operation is not impaired or interrupted during any repair or maintenance action.

J. The chargers/rectifiers shall have the following minimum alarm points:

a. Battery charger low voltage

b. Battery charger high voltage

c. Battery charger no charge

11.2 Communication Shelter Floor Loading

A. The Contractor shall collect equipment shelter model/information during the pre-bid site walks.

Attachment: 20._Exhibit_A_-_Technical_Specifications_-_Revisio (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

B. The Contractor shall consider the equipment shelter floor load limitations in the design of the battery support structure.

C. The battery support structure shall be engineered to distribute its weight based on each shelter floor load limitations without damaging the floor.

D. Based upon the assumption that the shelter floor is in good condition, the Contractor shall be responsible for any necessary improvements for the battery support structure.

11.3 Batteries

A. Modular stationary batteries shall be sealed maintenance-free type with sufficient ampere-hour capacity to support the run time requirements and the battery life expectancy shall be at least twenty (20) years in normal float-type service.

B. Battery capacity ratings shall be adjusted by a factor of 1.25 to compensate for battery capacity degradation over their 20-year life.

C. No venting facilities or special battery rooms shall be required for normal operating conditions.

D. Batteries shall be EnerSys PowerSafe DDm series, or engineer-approved equivalent.

E. Secure mounting facilities shall be incorporated in the design of the battery bank.

11.4 DC Power Distribution

A. A rack-mounted DC load center with circuit breakers shall be provided with the battery power system to provide a protected DC distribution to all -48VDC powered communications equipment, and the Contractor shall furnish and install a minimum of five (5) spare DC circuit breakers of the same type supplied on the panel for future use.

B. The DC-power circuit breakers shall be configured in a manner to preserve system redundancy and be clearly labeled for easy identification with permanent marker.

C. A separate (not in the DC distribution panel) DC load breaker shall be provided to disconnect the battery from the -48VDC rectifier system and the DC battery disconnect shall be equipped with alarm relay contacts and connected to the system alarm system.

11.5 Power Inverters

A. Communication control and other network equipment that cannot be powered directly from the DC power plant shall be powered by redundant power inverters with -48 VDC input power and 120 VAC output power.

B. The inverters shall have a capacity rating of at least twice that of the connected equipment loads.

C. The inverter shall, at a minimum, be based upon the following parameters:

a. Pure sine wave output (THD <2%) to operate higher-end electronic equipment

b. Selectable bypass/inverter mode

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c. Local and remote management and control

d. Dry contact terminal

e. Input over/under voltage protection

f. Internal over temperature protection

g. Input reverse polarity protection

h. Output overload protection

i. Output short circuit protection

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12. COMMUNICATION SITE DEVELOPMENT

A. The Contractor shall have total Turnkey responsibility for site development and for the site implementation to assure a single point of contact for all communications.

B. The Contractor shall furnish all design and engineering services, and install the communication sites, towers, foundations, communications shelters, emergency power standby generators, grounding and bonding systems, and other necessary hardware and components in accordance with the requirements of this RFP.

C. The Contractor shall be responsible for the provisions and cost of factory staging and testing, warehousing, insurance, storage and the security of supplied goods and equipment prior to and during the construction phases of the Project.

12.1 Existing County Tower Sites

A. The County's existing tower sites consist of the following sites:

a. DeBary

b. DeLand FDOT

c. De Leon Springs

d. Deltona

e. Edgewater

f. EOC-A

g. EOC-B

h. EVAC

i. New Smyrna Beach

j. Orange City

k. Ormond Beach

l. Pierson

m. Port Orange

B. The Contractor shall be responsible for all design and engineering services, including the suitability of the existing communication sites, towers and tower foundations, communications shelters, grounding and bonding systems, including all necessary hardware and components in accordance with the requirements of this RFP.

12.1.1 Tower Structural Analysis and Modification

A. Some of the towers utilized for the County's existing radio system are heavily loaded. Therefore, it is important that the Contractor minimize tower antenna loading, where possible, to support the new P25 radio system.

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B. The Contractor will perform a structural analysis for each communication tower where changes are made to antennas and transmission lines.

C. The new antenna system design will be used by Contractor to perform the structural analysis.

D. If the Contractor changes the antenna configuration after the County has accepted the system design, and such that a new analysis is required, the Contractor shall be responsible for the cost of the resulting analysis and any required modifications.

E. Except as defined in Item D above, the County shall be responsible for the costs associated with the structural design, fabrication, and implementation of all structural modifications and reinforcements that may be required for each tower structure.

12.2 Construction Site Management and Safety Plan

A. The Contractor shall prepare a preliminary construction site management plan and include it in their proposal.

   a. The construction site management plan shall depict the planned areas of construction including the staging areas for storage trailers, heavy equipment, cranes, tower steel and materials, and spoils

   b. The plan shall include the management of traffic for the delivery of tower steel, water, concrete, equipment shelter, generator, and other materials

B. The County will continuously occupy some of the sites and buildings during the entire construction period.

   a. Public access, property, health and safety considerations shall exceed all other considerations and the construction will require that the Contractor schedule and plan the work accordingly

   b. Construction work shall at all times be subject to alteration and revision if necessary for public health and safety considerations

C. The Contractor shall be responsible for any site modification required to accommodate the equipment proposed for the Project.

D. The Contractor shall secure the construction site at all times and may utilize temporary security and safety fencing as needed.

E. The Contractor shall be responsible for the restoration of any part of the site impacted, other than what is approved as a permanent improvement to the site.

12.3 Construction Drawings and Permitting Documentation

A. The Contractor shall be responsible for preparing construction drawings and site development documents for a complete and fully operable installation which is in compliance with this RFP and with the latest version of the National Electrical Code (or local electrical code, if applicable), local building codes, environmental laws, zoning and

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planning regulations or ordinances, land use restrictions, Federal Aviation Administration and Federal Communications Commission rules and regulations, State or County regulations governing road access and entry, OSHA guidelines and all other applicable local, State or Federal codes, regulations, laws and/or ordinances.

B. Modification or relocation of existing site equipment, structures or materials shall require prior approval by the County's Project Manager.

C. The Contractor shall provide preliminary construction drawings depicting the proposed construction within thirty (30) business days following execution of the contract.

D. The construction drawings shall be approved by the County prior to commencement of work.

E. Drawings shall illustrate, at a minimum, but not limited to:

   a. The location of the land parcel and the boundaries, utility easement, access road, the cleared area and the fenced compound

   b. Site features including fencing, access points, impervious areas, appropriate storm water features, storage facilities and staging areas, and security features

   c. The location of the tower and the equipment to be installed relative to any existing adjacent structures and property lines

   d. Soil boring test results

   e. Mechanical and structural details and specifications of tower foundations

   f. Electrical grounding systems

F. The Contractor shall be responsible for all permits, inspections, fees, documentation, filings, etc. associated with permitting and the construction of the communication site and work.

G. The Contractor shall prepare all specifications, plans, documents, and required forms, submittals, and exhibits required to obtain the necessary approval and permits from all regulatory agencies.

12.4 As-Built Drawings and Documentation

A. The Contractor shall keep up-to-date, marked-up prints of the Project construction drawings.

B. Markings indicating changes to the drawings shall be red or green and clearly visible.

C. The Contractor shall furnish four (4) original sets of "As-Built" drawings and one (1) soft copy in Adobe PDF format to the County's Project Manager at the completion of the Project.

D. The Contractor shall also provide Project drawings on a USB thumb drive in editable format, i.e., AutoCAD or Visio.

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E. Electrical breakers must be clearly marked using permanent labels.

12.5 Construction Materials

A. Materials specified by the Contractor shall be new and of first quality as defined in industry standards.

B. The Contractor shall not make substitutes unless prior approval has been obtained from the County Project Manager.

C. The Contractor shall be required to assume full responsibility for the specification of materials and equipment employed in construction of the Project and agrees to make no claims against the County for damages to such materials and equipment except for that which is solely caused by the County, their employees or agents.

D. The Contractor shall be responsible for managing the storage of all materials purchased and turned over to him/her by the County and shall receive all delivered items by suppliers at the job site or at a staging area to be furnished by the Contractor.

12.6 Workmanship

A. All workmanship shall conform to normal and accepted standards for the telecommunications industry and will be thoroughly examined by the County and/or their representatives at various stages during Project implementation and before Final System Acceptance.

B. The Contractor shall directly supervise all construction and installation of site structures and equipment including electrical wiring, towers structures and foundations, tower and site grounding and bonding systems, tower lighting systems, antenna mounts, etc.

12.7 Construction Work Coordination

A. The Contractor shall be solely responsible for the work performed by any subcontractor(s) and shall coordinate the work to ensure that interference between electrical conduits, cable support trays, grounding wire, structural members, and other work shall be avoided so that the Project is completed within budget and on schedule.

B. The Contractor shall coordinate their work schedule for site activities with the County to ensure that there is no interference to concurrent communications operations at the sites of work.

12.8 Clearing of Land

A. The Contractor shall be responsible for grubbing and the clearing of all brush, trees, organic matter, top soil, and any other obstructions including asphalt and concrete at the communication site and access road.

12.9 Communication Site Cleanup and Debris Removal

A. The Contractor shall be responsible for, and shall oversee the cleanup and the daily removal of all rubbish and construction debris from the work site.

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B. The Contractor shall supply a dumpster or similar trash storage/removal device where a substantial amount of construction debris is generated.

C. Upon completion of all work, the entire construction site area shall be left clean and free of trash, debris, mud, dirt, dust, scrap materials, and excess materials.

12.10 Sanitary Facilities

A. The Contractor shall be responsible for providing sanitary facilities at each work site for the duration of the Project.

12.11 Plantation Bay Communication Site Development Tasks

A. The County will furnish and install the communication shelter at the Plantation Bay tower site.

B. The Contractor shall add a cable ladder to the southwest portion of the tower from the top of the ice bridge to the top of the tower.

12.12 Farmton Communication Site Development Tasks

A. The Contractor shall furnish all equipment and services for the Turnkey development of the communications site as described in this section.

B. The Contractor shall certify that they are able to construct a Turnkey tower site to County specifications, on the land parcel specified in the Farmton area by the County, and that all costs to do so are included in their proposal, including permitting costs, to the extent that the land is zoned for the tower, a permit can be obtained for its construction, and there are no inaccuracies or discrepancies with actual conditions with the geotechnical report provided by the County. Should there be any cost not included in the proposal, it will be the Contractor's responsibility.

C. The Contractor shall furnish all equipment and services to develop the new "greenfield" communications site in the southern region of Volusia County.

D. The Contractor shall perform the following services:

a. Prepare site construction drawings showing the layout of all new and existing site components

b. Conduct site walks to collect pertinent information from the sites such as the location of Telco, power, existing facilities, etc.

c. Prepare zoning drawings that can be used to describe the proposed site installation in sufficient detail

d. Prepare record drawings of the site showing the as-built information

e. Perform construction staking around the site to establish reference points for proposed construction

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E. The Contractor shall furnish all equipment and services at a minimum, to clear, develop and construct the following items at the communications site:

   a. Grub the communications site to within 50-feet of the fenced communication site compound

   b. Construct a security gate with ASR signage at the road entrance to the site

F. The County will provide the Contractor with an access road to the tower site.

G. The Contractor shall furnish all equipment and services for the development of a communications system compound including, at a minimum, the following:

   a. Construct a 100-foot x 100-foot fenced communications site compound

   b. Furnish and install a 320-foot self-supporting communications tower and foundation piers

   c. Furnish and install the foundation for a County-provided 12-foot X 20-foot prefab concrete communication shelter

   d. Relocate and install the County-provided prefab concrete communication shelter

   e. Furnish and install a Caterpillar brand, diesel fueled backup power generator system with outdoor enclosure, foundation, transfer switch, and belly tank

   f. Furnish and install two (2) spare 2-inch conduits from the inside of the generator enclosure to the equipment shelter near the transfer switch that shall be capped and labeled on each end

   g. Furnish and install a grounding system for the compound including tower, shelter, fencing, electrical service, backup generator, and any other compound equipment

   h. Furnish and install an H-frame electric meter pedestal that supports six (6) utility meters each with 120/240VAC 200-Amp service to the County shelter and five (5) future tenants

   i. Furnish and install all equipment required for the installation of the underground electrical utility service with pad-mounted transformer if required

12.13 Tower Structure General Requirements

A. The Contractor shall be responsible for providing the tower structures and foundations, and for furnishing and installing all associated hardware, lighting and safety systems and appurtenances.

B. All work shall be performed in accordance with good engineering practices and comply with all local, State and Federal codes, rules and ordinances.

C. The Contractor is required to adhere to local electrical code and building regulations.

D. The tower shall be a self-supporting model constructed with solid legs, and solid cross members.

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E. The fabrication and installation of the tower shall include all hardware, brackets, fasteners, climbing and safety systems, ancillary devices such as LED tower lighting systems, and engineering and installation services required to complete the Project.

F. The Contractor shall be responsible for ensuring that the tower meets all design criteria, labor services, guarantees and installation requirements contained in the Contractor's specifications, or in national or industry standards to which such specification refers.

G. The work to be performed shall include site preparation, grading, foundation installation, tower erection including climbing ladders and safety climb system, LED tower lighting systems, transmission line ladders and transmission bridges, lightning rods, grounding system and ground bus bars, and the touch-up of any scrapes or damage to the protective galvanizing.

H. All exothermic welds and any touch up repairs to galvanized components shall be coated using a cold galvanizing compound spray that contains a minimum of 93% zinc such as Rust-Oleum Cold Galvanizing Compound.

12.14 Reference Standards

A. All materials, design, and construction procedures shall be in accordance with the latest versions of the applicable industry standards, specifications:

a. American National Standard for Telecommunications:

i. T1.334-2002, Electrical Protection of Communications Towers and Associated Structures

ii. T1.313-2003, Electrical Protection for Telecommunications Central Offices and Similar Type Facilities

iii. T1.333.2001, Grounding and Bonding of Telecommunications Equipment

iv. ANSI-J-STD-607-A-2002, Commercial Building Grounding and Bonding Requirements or Telecommunications

b. ANSI/NFPA 780-2004, Standard for the Installation of Lightning Protection Systems

c. ASTM Standard A123, A153, B695

d. Harris AE/LZT 123 4618/1 Rev. F, Jun-17 Installation Manual

e. Motorola Standards and Guidelines for Communication Sites commonly known as "R56" version 68P81089E50-C of April 2017

f. Federal Aviation Administration Advisory Circular AC 70/7460-1L

g. EIA/TIA-222, latest revision, Structural Standard for Antenna Supporting Structures and Antennas, Telecommunications Industry Association (TIA)

h. NFPA 70: National Electric Code (NEC) - Latest Edition

i. NEMA - National Electrical Manufacturer's Association

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j. TIA-1019-A: Standard for Installation, Alteration and Maintenance of Antenna Supporting Structures and Antennas, Telecommunications Industry Association (TIA)

k. Building Codes for State of Florida and Volusia County, Florida

l. OSHA - Occupational Safety and Health Standards

i. 29 CFR Part 1010 - Occupational Safety and Health Standards

ii. 29 CFR § 1910.27 - Ladders

iii. 29 CFR Part 1926 - Safety and Health Regulations for Construction

B. The standards listed herein are meant to serve as a guide and shall be superseded by any and all current applicable industry standards and/or local codes at the time of the installation.

12.15 Geotechnical Exploration

A. The County has performed a geotechnical exploration of the Farmton site and the report has been provided in Appendix E: Farmton Tower Site Soil Boring.

12.16 Tower Foundation Construction and Design

A. Contractors shall base their proposed pricing for the foundation design upon the County-provided geotechnical report by Bechtol Engineering in Appendix E: Farmton Tower Site Soil Boring.

B. The County prefers pad and pier tower foundations.

12.16.1 Concrete Materials Testing

A. A concrete materials test shall be performed for each of the tower foundations.

B. This test shall include slump testing of the concrete materials and unconfined compressive strength testing of concrete cylinders molded at the time of the concrete pour.

C. Cylinders shall be provided for each foundation pier, and shall be tested at seven (7) and twenty-eight (28) days after the concrete pour.

D. A report of test results for slump testing and unconfined compressive strength testing shall be provided to the County immediately following each test.

12.16.2 Design Plans and Submittals

A. The required design documentation shall be approved, signed, dated, and sealed by a registered Professional Engineer (structural) qualified and licensed to practice in the State of Florida.

B. At no later than fifteen (15) calendar days prior to foundation excavations for the tower, the Contractor shall deliver signed and sealed copies of all required tower structure and foundation design documentation.

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C. Four (4) paper copies and one (1) soft copy in Adobe PDF format shall be provided to the County's Project Manager; these submittals are in addition to any documentation submittals that may be required for the permitting process.

D. The Contractor shall prepare and submit for County approval, all plans, specifications, foundation drawings and scale drawings of the tower depicting its overall height, the number and height of sections, the width of each section and antenna loading and their specified heights.

E. The Contractor shall submit for County approval, a profile view of the tower containing structural details, tower loads, and engineering notes.

F. Any documentation for the tower requested by the County for planning approvals shall be supplied in a timely manner.

G. In accordance with TIA-222, complete plans, assembly drawings, or other documentation shall be supplied showing the necessary marking and details for the proper assembly and installation of the components, including the member sizes, design yield strength of the structural members and the grade of structural bolts required.

H. Foundation reactions, when provided, shall be based upon factored loads.

I. The tower plans shall detail attachment height, antenna quantity, antenna model or type, mount quantity, mount type and line size that was included in the structural analysis.

J. Alternatively, the total effective projected area representative of all of the antennas and mounts at each elevation may be provided along with the associated line sizes.

K. The tower plans shall detail the following data for the site specified used in the structural analysis:

   a. Exposure Category C shall be used

   b. Tower and shelter shall be Risk Category III-IV structures

   c. Foundation reactions for the loading combinations considered

   d. Soil design parameters or source of data

L. Upon completion of tower construction, the Contractor shall deliver to the County, four (4) complete original copies of the tower and foundation as-built documentation, and a soft copy in Adobe PDF format, and in both DWF and DWG file formats.

M. All tower drawings shall become property of Volusia County when the tower is accepted.

12.17 Manufacturers' Certification and Support

A. All tower materials, hardware, and accessories shown on the plans and drawings shall be certified in writing by the tower manufacturer as being suitable for the purposes shown.

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B. The manufacturer's certification shall include the following statement: "The tower and foundation designs meet or exceed all requirements of the Volusia County RFP No. – 19-P-153JRD and the latest version of TIA-222."

C. The Contractor shall provide a letter from OEMs which guarantees manufacturer's support after the Warranty Period, and in the case of any conditions or problems which cannot be remedied by the Contractor, or in case the Contractor defaults on its warranty and/or maintenance agreements and obligations.

D. Subsystems are defined as various tower components including the FAA-approved tower lighting system.

E. The Contractor shall provide a written guarantee that all proprietary components and repair parts shall be available for a period of at least 10 years from the date of Project final completion.

12.18 Construction Notifications

A. The County shall be notified when the inspection of the various construction phases of the tower and foundation are required.

B. For the foundation, the Contractor shall notify the County as to construction status at the following times:

   a. Ten (10) days prior to start of excavation - notify as to the start date of construction and estimated completion date of construction

   b. The day of the completion of the reinforcement steel

   c. The day of the concrete pour

C. For the tower structure, the Contractor shall notify the County as to construction status at the following times:

   a. Ten (10) days prior to start of tower installation - notify as to the start date of construction and estimated completion date of construction

   b. The day the tower reaches the greatest height

   c. The day tower installation is completed

12.19 Materials

A. All equipment and materials, except with the expressed written permission of the County, shall be new and unused, meet telecommunications industry standards, and, where applicable, be registered with and approved by the Federal Communications Commission and the Federal Aviation Administration.

B. The County reserves the right to reject and require the return, at the Contractor's expense, of any and all components that are defective or fail to comply with the specification.

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C. Such rejects and/or returns will not invalidate the remainder of the contract. Rejections of materials for cause shall not provide an extension of time to the Contractor.

D. All materials shall conform to the provisions of TIA-222 where applicable, with respect to physical properties, manufacture, workmanship, and factory finishes.

12.20 Corrosion Protection

A. All fabricated tower assemblies and parts shall be hot-dipped galvanized after fabrication in accordance with the requirements of ASTM Standard A123.

B. All hardware and other attachments, including antenna mounts, climbing steps, transmission line support systems, etc. shall be galvanized per ASTM Standard A153 and B695 or constructed of inherently corrosion resistant materials suitable for such applications.

C. Other types of zinc coating or plating are not acceptable.

D. The Contractor shall furnish written certification that all installed tower components have been assembled and hot dipped galvanized in accordance with the minimum requirements outlined in the specifications herein.

12.21 Loads and Stresses

A. The design of the tower shall take into account dead and live loads induced by the structure itself and all appurtenances, and all stress applied to the tower and its appurtenances by wind forces.

B. The minimum safety factors listed in TIA-222 shall apply under the most severe combination of dead load plus live loading.

C. The tower design shall allow no tower member to be stressed more than 90%.

12.22 Appurtenances

A. Appurtenances shall include, but not be limited to, the following:

a. Tower-mounted equipment

b. Antennas and antenna mounts and hardware

c. Antenna platforms

d. Microwave antennas and radomes

e. Transmission lines and waveguides

f. Climbing ladders and safety climb system

g. Tower lighting systems

h. Transmission line ladders

i. Lightning rod

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12.23 Lightning Rod

A. The tower shall be equipped with a top-mounted lightning rod or "air terminal" system.

B. The lightning rod shall be installed to a height greater than the tallest appurtenance.

C. The lightning rod shall be bonded to tower steel.

12.24 Spline Ball Ionizer System

A. The tower shall be equipped with a top-mounted Spline Ball Ionizer (SBI) system for tower lightning protection at two levels on the tower.

B. The Spline ball systems shall be installed per the manufacturer's recommendations at the top of the tower structure and at the 150 foot level.

12.25 Antenna System and Transmission Line Loading

A. The towers shall be designed to support, at a minimum, the antenna systems, hardware and transmission lines in the following table.

320-foot Farmton Site						
Qty	Model	Height (feet)	Mount	Line Type	Azimuth	Use
1	Lightning Rod	320	Top			
3	BMR12	320 (Base)	6-foot Side Arm	(3) 1-5/8-inch LDF	Omni	P25 RX/Future
1	DB224	320 (Base)	6-foot Side Arm	7/8-inch LDF	Omni	VHF
2	4-FT², 70LBS	320 (Base)	6-foot Side Arm	(2) 1-1/4-inch LDF	Omni	Future
1	DB-806	320 (Base)	Pipe Mount	1/2-inch LDF	NA	800 MHz Test
1	TTA	315	To Tower	1/2-inch LDF	NA	P25 RX
3	BMR12	300 (Base)	6-foot Side Arm	(3) 1-5/8-inch LDF	Omni	P25 TX/Future
1	DB224	300 (Base)	6-foot Side Arm	7/8-inch LDF	Omni	VHF
2	4-FT², 70LBS	285 (Base)	6-foot Side Arm	(2) 1-1/4-inch LDF	Omni	Future
1	VHLP6-6W	285 (CL)	Pipe Mount	EWP52	TBD	Future
3	4-FT², 70LBS	260 (Base)	6-foot Side Arm	(3) 1-1/4-inch LDF	Omni	Future
1	DB224	260 (Base)	6-foot Side Arm	7/8-inch LDF	Omni	VHF Spare
1	Carrier Heavy*	250 (CL)				Future
1	Carrier Heavy*	235 (CL)				Future
1	VHLP6-6W	225 (CL)	Pipe Mount	EWP52	TBD	Future
1	VHLP6-6W	220 (CL)	Pipe Mount	EWP52	TBD	Future
1	VHLP4-6W	215 (CL)	Pipe Mount	EWP52	TBD	Future
1	VHLP6-6W	210 (CL)	Pipe Mount	EWP52	TBD	MW to Brevard ISSI
1	VHLP4-6W	200 (CL)	Pipe Mount	EWP52	TBD	Future
1	Carrier Heavy*	185 (CL)				Future
1	HPX8-59	155 (CL)	Pipe Mount	EWP52	TBD	MW to Deltona
1	HPX8-59	145 (CL)	Pipe Mount	EWP52	TBD	MW to Edgewater

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2	4-FT², 70LBS	140 (Base)	6-foot Side Arm	(2) 7/8-inch LDF	Omni	Future
1	DB224	140 (Base)	6-foot Side Arm	7/8-inch LDF	Omni	VHF
1	Carrier Heavy*	130 (CL)				Future
1	VHLP4-6W	120 (CL)	Pipe Mount	EWP52	TBD	Future
1	VHLP6-6W	115 (CL)	Pipe Mount	EWP52	TBD	Future
1	VHLP4-6W	110 (CL)	Pipe Mount	EWP52	TBD	Future

*Carrier Heavy is defined as 150-ft² Effective Projected Area (EPA) per centerline for this RFP.

Table 25 - Farmton Tower Loading

12.26 Antenna Mounting Hardware

A. The Contractor shall engineer and supply 6-foot side arm brackets except where noted to support land mobile antennas mounted to the tower.

B. The side arm brackets shall include an integral vertical antenna mounting mast to permit proper installation of antennas.

12.27 Wind Speed Rating

A. The tower structure and foundations shall be designed and constructed to support the specified loads in accordance with the latest versions of EIA/TIA-222, the Florida Building Code, Volusia County's building or Florida Building Code, whichever more stringent, based upon a 150 mph ultimate wind speed.

B. Exposure Category C and Risk Category III shall be used for all structures.

12.28 Tower Twist, Sway, and Displacement

A. The towers shall be designed that when fully loaded the twist and sway limits at the microwave antenna mounting positions do not exceed their 10 dB degradation points under conditions of 60 mph service wind speeds as recommended by TIA-222 for the antennas specified in the antenna loading tables.

12.29 Transmission Line Support System

A. Cable ladders for transmission lines shall be installed to minimize tower face wind loading and shall not interfere with the climbing ladder or safety system.

B. A cable support system shall be designed to accommodate all proposed transmission lines plus a 100% growth factor.

C. Standard bolt-in hangers shall be used; snap-in hangers are not acceptable.

D. The cable support systems shall be of galvanized steel construction, and shall have mounting hardware of stainless steel or galvanized steel construction.

E. No drilling of the tower legs or cross bracing shall be required to install the cable support device.

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F. The ladder structures shall be spaced at maximum 3-foot intervals to enable hangers to be installed at 3-foot intervals.

G. Holes shall be provided in the tower support members, tower hanger adapter plates, or separate ladder structures to allow installation of bolt-in cable hangers.

H. The 3/8-inch and 3/4-inch mounting holes shall be precision punched or drilled and sufficiently separated to accommodate the bolt-in hangers.

12.30 Waveguide Bridge System

A. The Contractor shall design, furnish and install an efficient waveguide bridge system between the new tower and the new equipment shelter that protects the lines from falling debris, and will support 2-times the port capacity of the entry port panel including all proposed transmission lines and waveguides.

B. A grating type of waveguide bridge is required.

C. Galvanized steel construction shall be used for the waveguide bridge and its ancillary components.

D. The waveguide bridge system shall be designed to the same wind speed rating of the equipment shelter.

E. Microflect waveguide cushions, hangers, and crosses are the preferred method of attachment to the waveguide bridge.

F. The waveguide bridge shall be designed to support devices to properly attach the transmission lines at the intervals specified.

G. The waveguide bridge facility shall be installed so that it is self-supporting with its own foundations and not rigidly attached to the tower or equipment shelters.

H. The waveguide bridge shall be electrically isolated from the tower and the equipment building structures.

I. The waveguide bridge and support structures shall be bonded and grounded per the requirements of this RFP.

12.31 Climbing Ladder

A. The towers shall be provided with a climbing ladder, safety cable, hard hat and climbing belt.

B. The climbing ladder shall be attached to tower legs in a manner that would not interfere with the installation or maintenance of antennas, or installation of additional transmission lines on the cable ladder.

C. Similarly, the placement of cable ladder structures shall not interfere with the climbing facility.

D. It shall be possible to lockout the climbing facility to preclude unauthorized use.

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E. The climbing facilities shall meet all OSHA requirements.

12.32 Tower Lighting and Controls

12.32.1 Lighting

A. The Contractor shall provide an LED dual lighting system with the towers or an alternate system if specified by the FAA.

B. The lighting system shall be manufactured by Flash Technology, Vanguard Dual FAA L-864/L-865.

C. The lighting system shall conform to all FAA, NEC, local, and FCC Regulations, and shall further conform to the latest version of the FAA publication AC 70/7460.

D. The lighting system shall consist of two (2) top-mounted beacons placed in a manner that allows unobstructed view by aircraft through 360 degrees.

E. The beacons shall be attached directly to the tower structure.

F. The lighting system shall consist of medium intensity white beacons for daytime lighting and red obstruction lighting for nighttime operation.

G. The lighting system shall be a “No EMI or RF” interference, LED model.

H. The tower lighting system shall be powered from -48VDC or a -48VDC to 120VAC power inverter.

12.32.2 Tower Lighting Controls

A. Activation of the lighting systems shall be via a light sensitive, photoelectric type switch and controller that will activate the lights at dusk (or other cloud-darkened condition) and extinguish the lights at sunrise.

B. The controller shall automatically switch from red lights at sunrise to strobe lights and back to red lights when the sky darkens.

C. The tower lighting controller shall be housed inside the communications shelter.

12.32.3 Tower Lighting Wiring

A. Wiring for the tower lighting shall be provided and installed in conformance with the lighting manufacturer's specifications and in accordance with local electrical codes.

B. All cable ties used on the tower shall be stainless steel or weather resistant black acetal.

C. Standard white or black cable ties made of nylon or polypropylene shall not be used.

12.32.4 Tower Lighting System Failure Alarm

A. At a minimum, the lighting control system shall be equipped to provide individual, form "C" dry contact closure alarm indications of lighting failure:

a. Tower light system failure

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b. White strobe failure

c. Lights on Nighttime

d. Power failure

e. LED red beacon burnout

f. Sidelight failure

B. Upon failure of the lighting system, the alarm condition shall be reported to the County's existing NetGuardian site alarm system.

C. The Contractor shall coordinate the configuration and connection points of the alarm inputs/outputs with the County Project manager.

12.33 Power Isolation Transformers

A. The Contractor shall provide an isolation transformer in the event that the electrical service meter or sub-feed panel is located more than 50-feet from the communications equipment shelter's main disconnect.

B. The isolation transformer shall be properly sized and rated to support the equipment shelter electrical service, and shall be located outside the communications shelter as close to the shelters main disconnect as possible.

12.34 Standby Generator Requirements

A. Generators shall be Underwriters Laboratories Inc. (UL) rated, UL 2200 compliant.

B. Plans and specifications for standby power generators shall be furnished by the Contractor at all sites to be constructed pursuant to this RFP.

C. Generators shall be mounted on a concrete foundation in accordance with the manufacturers' specifications and local building codes for weather proofing, shock and vibration mounting, ventilation, cooling, fuel supply, and electrical and grounding connections.

D. It shall be the responsibility of the Contractor to provide plans and specifications in their proposal to install and test a complete and operational standby power generator and automatic transfer switch to be supplied pursuant to this RFP.

12.34.1 Type of Generator

A. All new gensets shall be Caterpillar brand.

B. The generator set equipment shall be a diesel fueled 60 kVA Caterpillar model and include the genset, controller, fuel tank, enclosure, and transfer switch.

C. The generators shall be driven by an engine that is liquid-cooled.

D. The engine shall operate at 1800 RPM and be equipped with shutdown devices for overspeed, high coolant temperature, and low oil pressure.

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E. The generator shall be provided with an outdoor enclosure, foundation, transfer switch and all accessories and equipment needed for the proper operation of the unit.

   a. These shall include, but not be limited to, cabinet housing, starting batteries, battery racks, battery chargers, battery cables, cooling systems, residential grade exhaust silencers with exhaust pipes and rain caps, automatic load transfer controls, electrical surge protection, automatic frequency regulators, vibration isolators, fuel lines, fuel regulator, fuel filter, fuel storage tank, conduits, junction boxes, wiring, instrument panels, remote alarm panels mounted inside equipment shelters, mounting bases, and fuel leakage detectors.

F. The generator shall be provided with an engine oil heater.

12.34.2 Generator Ratings

A. The output power rating of the generator shall be capable of delivering electrical power output to support the electrical equipment and shelter loads.

B. Unless otherwise specified, all generators shall be rated for a minimum of 60 kVA Standby output power.

12.34.3 Alternator

A. The alternator enclosure shall meet at a minimum, IP23 requirements for objects larger than 12 mm and dripping water at an angle of ± 60 degrees.

B. The alternator shall be capable of providing the specified power capacity at no less than a 0.8 power factor.

C. The output shall be 60Hz and commensurate with site requirements.

D. The alternator shall be directly connected to the engine flywheel housing and driven through a flexible coupling to ensure permanent alignment; gear driven alternators are not acceptable.

E. The alternator shall be a 105ºC rise model, single-bearing, self-aligning, four-pole, synchronous type and direct drive centrifugal blower for proper cooling and minimum noise, with a temperature compensated voltage regulator and a Permanent Magnet (PM) exciter system. No brushes will be allowed.

F. The voltage regulator shall provide no load to full load regulation of rated voltage within ± .25 % during steady-state conditions.

G. Frequency regulation shall be by an electronic isochronous governor (± 0.5%) from steady-state no load to steady-state rated load.

12.34.4 Installation

A. The Contractor shall provide and install all the electrical wiring necessary to connect the standby emergency power generator, automatic transfer panel, dry contact closure type alarm monitoring points, and equipment shelter electrical loads.

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B. All wiring shall meet or exceed manufacturer specifications for designated load requirements of the equipment to be supported.

C. All wiring shall be run in conduit and meet applicable NEC and local codes.

D. All electrical materials and work shall be inspected and approved by the building inspector with jurisdiction at the site of installation.

E. AC line circuit breakers, commensurate to the electrical interface required at each site, shall be provided.

12.34.5 Documentation

A. The following documentation shall be supplied to the County for each generator set and transfer switch supplied:

a. Specification and data sheets for the exact type and model generator and transfer switch supplied pursuant to this procurement, including all options and accessories

b. Manufacturer's certification and results of the factory testing

c. Manufacturer's warranty documents

d. Manufacturer's installation instructions

e. Shop drawings showing plan and elevation views of the equipment

f. Interconnection wiring diagrams showing all external connections required; with field wiring terminals marked in a consistent point-to-point manner

g. Operator and maintenance manuals that outline routine maintenance and troubleshooting procedures

h. Transfer switch manual and wiring diagram

B. The above documentation shall be included in each copy of the as-built documentation delivered to the County's Project Manager.

12.34.6 Generator Warranty

A. A no-deductible warranty that provides for onsite service by a factory authorized service contractor shall be provided at a minimum, for the full Warranty Period of the communication system.

12.34.7 Generator Startup Service

A. A factory authorized service representative shall provide initial startup service and shall conduct acceptance testing at each site at which the equipment is installed.

B. Factory and field test records shall be furnished to County in both printed and electronic format.

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12.34.8 Generator Instrumentation, Control and Alarms

A. A control box local to the generator set shall be provided containing the start, run, and stop switches for manual operation, and remote control terminals for connection to the automatic load transfer control panel.

B. At a minimum, the generator controls shall include the following functions:

   a. Run/Auto/Stop Control

   b. Speed and Voltage Adjust

   c. Engine Cycle Crank

   d. 12 VDC operation

   e. The panel shall have an environmental sealed front face

   f. The panel shall display text alarm/event descriptions

C. At a minimum, the generator set shall include the following instrumentation:

   a. RPM

   b. DC volts

   c. Operating hours

   d. Oil pressure (psi, kPa or bar)

   e. Coolant temperature

   f. Volts (L-L & L-N), frequency (Hz)

   g. Amps (per phase & average)

   h. ekW, kVA, kVAR, kW-hr, % kW, PF

D. The generators shall shut down and lock out upon:

   a. Low oil pressure

   b. High coolant temperature

   c. Overspeed

   d. Emergency stop

   e. Failure to start (overcrank)

   f. Low coolant temperature

   g. Low coolant level

E. Alarm contacts shall be provided to allow transmission of status on fault alarms for any of the above conditions, plus:

   a. Control switch not in auto position

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b. Generator set is running, and when the generator is on-line under load conditions

c. Low oil pressure pre-warning

d. High coolant temperature pre-warning

e. Low engine temperature

f. Low battery voltage

g. High battery voltage

h. Low coolant

i. Low fuel, when the tank is less than 1/4 full

F. These alarm contacts shall be wired into and shall be reported by the alarm system being supplied pursuant to this procurement.

G. Form "C" alarm contacts shall be provided and connected to the alarm system to report loss of AC power, low battery voltage, high battery voltage, and power on.

12.34.9 Fuel Supply

A. The generator set shall utilize diesel as a fuel source.

B. The Contractor shall provide a sub-base "belly" fuel tank and all fuel system piping and regulation equipment sized as required for proper fuel flow to the engine.

C. Proposed fuel systems shall meet all applicable codes, standards, and requirements for such systems.

D. Proposed fuel systems shall include an FPS Series automated fuel management system that is properly-sized for the generator.

E. The tank shall be sized to provide a minimum of 72 hours of continuous operation at 50% rated generator output and shall not be less than 300-gallon capacity.

F. The generator and tank shall be installed and anchored in a manner that will prevent it from moving in a flood or storm surge condition.

G. Tank installation and all connections and plumbing to connect the fuel system to the engine shall comply with applicable codes and regulations, and shall comply with NFPA-37 (Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines) standard.

H. The fuel tank shall be easily accessible for refueling.

I. A fuel level sensing device shall provide a dry contact closure-type alarm monitoring point for the fuel tanks to issue an alarm when the tank is less than 1/4 full.

J. The Contractor shall fill the fuel tank prior to and after conducting the acceptance tests.

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K. The Contractor shall only use ultra-low-sulfur diesel (ULSD) fuel (no red dyed fuel) to initially fill the fuel tanks.

12.34.10 Weather Proof Enclosure

A. The generator shall be provided with the manufacturer's recommended outdoor weatherproof enclosure.

B. Enclosures shall be corrosion resistant appropriate for a coastal environment; powder-coated aluminum is preferred.

12.34.11 Exhaust System

A. An exhaust system with a "residential" type muffler shall be provided and sized as recommended by the manufacturer.

B. The Contractor shall mount the muffler so that its weight is not supported by the engine.

C. A flexible exhaust connection shall be provided as required for connection between the engine's exhaust manifold and the exhaust line, in compliance with applicable codes and regulations.

D. The Contractor shall mount and install all exhaust components as recommended by the manufacturer and as required to comply with all applicable codes and regulations.

E. All components shall be properly sized to ensure proper operation without excessive backpressure when installed.

F. The installation shall allow for pipe expansion and contraction.

12.34.12 Battery and Charger

A. A lead acid starting battery rated for the engine type to be supplied shall be furnished and installed with the generator set.

B. The battery shall be float charged by an appropriate sized voltage regulated charger which is powered by 120 VAC.

C. Float, taper, and equalize charge settings shall be provided.

12.34.13 Cooling System

A. A water-cooled engine is required.

B. The radiator shall be filled with a mixture of water and coolant in accordance with the engine manufacturer's recommendations.

C. A thermostatically controlled water jacket coolant heater shall be provided and installed in accordance with the manufacturer's recommendations.

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12.35 Manual and Automatic Transfer Switches

12.35.1 Manual Transfer Switch

A. The County will install a manual transfer switch to switch from a mobile trailer generator to the site generator. Cutler-Hammer Model # DT224UGK 240VAC 2 Pole Double throw safety switch 200 Amp.

B. The County will install a gooseneck connector on the outside of the shelter for portable generator hookup. Model # 0160603 made by Crouse-Hines.

12.35.2 Automatic Transfer Switch

A. A Caterpillar-brand automatic load transfer switch shall be provided to transfer the load between commercial power and the standby emergency power generator.

B. The automatic transfer switch shall be sized for proper operation in accordance with the transferred loads.

C. The transfer switch shall be completely factory assembled and shall contain electronic controls designed for surge voltage isolation, with voltage sensors on all phases of both input power sources.

D. Permanently attached manual control handles shall also be installed on the transfer switch.

E. The switch shall provide positive mechanical and electrical interlocking and mechanically held contacts.

F. Quick-make and quick-break contact mechanisms shall be provided for manual transfer under load.

G. The transfer switch shall be installed in a key locking, UL listed, NEMA cabinet to be mounted on an outside wall of the equipment shelter.

H. The switch shall be fully wired and integrated with the engine generator set in accordance with local electrical and fire codes.

I. All transfer switches and accessories shall be U.L. listed and labeled, tested per U.L. Standard 1008 and CSA Approved.

12.35.3 Transfer Switch Specifications

A. Transfer switches shall be rated to carry 100% of the rated current in the enclosure.

B. Transfer switches shall be double-throw, electrically and mechanically interlocked and mechanically held in both positions.

C. Main switch contacts shall be high-pressure silver alloy.

D. Each contact pole of the main transfer device shall be capable of handling both inductive and non-inductive loads and allow for inrush currents of 20 times the continuous rating.

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E. Contact assemblies shall have arc chutes for positive arc extinguishment.

F. Arc chutes shall have insulating covers to prevent interphase flashover.

G. Form "C" contacts shall be provided in each position of the transfer device for alarm reporting purposes.

   a. The contacts shall be connected to the alarm system for reporting transfer switch position (Source 1 or Source 2)

H. The transfer switch shall be rated for continuous operation in ambient temperature ranges of -40 to +50 degrees Celsius.

I. Transfer Switch # J3ADTSA20230FGXC,11BE,18RX,72EE,125A J Frame:

   a. Series 3ADTS Automatic Delayed Transition Switch 2 Pole with solid neutral 230 Amps, 240 V Group G Type 1 Enclosure

   b. Accessories: 11BE Feature Bundle includes Engine Exerciser/Event Log/RS485 enable/common contact

   c. 18RX-REX (Relay Expansion Module) with Norman and Emergency available 18G

   d. 72EE Quad – Ethernet Module with AES – 128-bit Encryption

12.35.4 Automatic Controls

A. Transfer switch control shall be designed for a high level of immunity to power line surges and transients.

B. The device shall be tested in accordance with IEEE Standard 587-1980 (or latest revision).

C. Controls shall have optically isolated logic inputs, and isolation transformers for AC inputs.

D. Relays shall be installed on all outputs.

E. Under-voltage sensors shall simultaneously monitor all phases of the standby power source and the commercial power source.

F. Pick up and drop out voltage settings shall be adjustable.

G. Voltage sensors shall allow for adjustment to sense partial loss of voltage on any phase.

H. Time delayed automatic start up, and transfer to, the emergency power generator system for any of the following conditions:

   a. Commercial power failure

   b. Under-voltage condition for any and all phases

   c. Overvoltage condition for any and all phases

   d. Over/under frequency condition for any and all phases

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I. Controls shall be provided with over-voltage sensors, adjustable from 100-130% of nominal input voltage to monitor the source.

J. An adjustable time delay shall be provided.

K. Automatic controls shall signal the engine-generator to start upon signal from normal source sensors.

L. A time delay start, variable from at least zero to 5 seconds, shall be provided to avoid nuisance start-ups.

M. Battery voltage starting contacts shall be gold, dry type contacts that have been factory-wired to a field wiring terminal block.

N. The switch shall transfer when the emergency source reaches the set point voltage and frequency.

O. A time delay shall be provided for transfer, which is variable from zero to 120 seconds.

P. Protection shall be provided for low and high generator voltage and over/under generator frequency.

Q. Appropriate sensors shall be provided to ensure that load is not transferred, or that load is disconnected, when these parameters are out of (adjustable) limits.

R. The switch shall re-transfer the load to commercial power after a time delay.

   a. This time delay shall be variable (adjustable) from zero to 30 minutes to avoid short engine run times.

   b. The re-transfer time delay shall be immediately bypassed if the emergency generator fails.

S. The generator shall continue to run after re-transfer in an unloaded condition (engine cool-down) for an adjustable period of approximately five (5) minutes after transfer to commercial power, and then automatically shut down.

T. Power for transfer operation shall be from the source to which the load is being transferred.

U. Diagnostic indicators shall be provided to allow the last successful step in the sequence of control functions to be pinpointed.

V. The present status of the control functions shall also be indicated. These functions, at a minimum, shall include:

   a. Source 1 OK

   b. Start generator set

   c. Source 2 OK

   d. Transfer timing

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e. Transfer complete

f. Retransfer timing

g. Retransfer complete

h. Timing for stop

12.35.5 Front Panel Control Devices

A. A key operated selector switch shall be provided which will provide the following functions:

a. Test - to simulate commercial power loss to allow testing of the generator set with or without transfer of the load

b. Normal - leaves the switch in its normal operating position

c. Retransfer - a momentary position, which will provide an override of the retransfer time delay and cause immediate return to the commercial power source (if available)

12.35.6 Exerciser Clock

A. An exerciser timer shall be provided to periodically operate the generator without user presence or intervention to maintain the reliability of the unit.

B. The timer shall be a user-programmable 168-hour (seven days) clock timer adjustable to day of week, time of day, and duration of exercise period.

C. The timer shall incorporate a selector switch to choose whether the engine-generator exercises with load or without load.

12.36 Fencing

A. The Contractor shall furnish and install an 8-foot high, commercial grade chain-link fence topped with concertina razor wire above the 8-foot level.

B. The fence mesh shall be 6 Gauge x 2" chain link galvanized fence fabric,

C. The fence shall be constructed with a two-section, 12-foot wide gate for vehicular access near the base of the tower to facilitate the installation of new antenna systems.

D. Line posts, rails and braces shall be galvanized steel and shall conform to the requirements of ASTM F1083 and ASTM F1043.

E. Fence posts and top rails shall be HF40.

F. The fence posts shall be spaced no more than 10-feet apart and shall be set in concrete which shall be of a commercial grade with a minimum 28-day compressive strength of 2500 psi.

G. For guyed tower installations, the same fencing shall be provided around all guy anchor points.

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H. The Contractor shall provide a multi-lock system at each site gate.

I. The multi-lock system shall be Stymielock or approved equivalent and shall support at a minimum six (6) different padlocks.

J. The Contractor shall provide a combination padlock for each site gate.

K. The locks on the shelter doors shall be Trilogy DL 3000 electronic door locks.

12.37 Site Landscaping

A. The Contractor shall be responsible for landscape grading, seeding, and mulching of the disturbed soil.

B. If planning authorities require foliage screening or other plantings at the tower sites, the Contractor shall arrange for professional planting of the required species and quantities of trees or shrubs.

C. The Contractor shall restore the site to its original condition following construction and installation activities.

12.38 Weed Barrier

A. The Contractor shall furnish and install weed prevention material covering the newly fenced area around the base of the new tower.

B. The weed prevention material shall be 6 mm plastic sheet.

C. For guyed tower installations, the same weed barrier shall be provided around all guy anchor points.

12.39 Compound Gravel

A. The Contractor shall furnish and install number 57 limestone, four (4) to six (6) inches deep throughout the newly fenced area and extending three (3) feet outside of the fence.

B. For guyed tower installations, the same compound gravel shall be provided around all guy anchor points.

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13. GROUNDING, BONDING AND SURGE SUPPRESSION

A. Contractor shall furnish and install the required grounding and bonding conductors, and make connections to grounding system at each communications site.

B. All grounding and bonding conductors shall be as straight as possible with a minimum number of bends.

C. The minimum bending radius of any grounding/bonding conductor shall be one foot.

D. The Contractor shall not make connections between dissimilar metals unless a material specifically approved for use with the dissimilar metals separates the conductors.

E. The Contractor shall place star or split lock washers under the head of the screws, bolts, or nuts and not between the conductive surfaces of the lug and the metal surface to be bonded.

F. The Contractor shall not use self-tapping sheet metal screws for attaching grounding conductors to any surface.

G. The Contractor shall utilize exothermic welding process such as Cadweld for all exterior and underground connections and shall utilize #2/0 AWG stranded tinned bare copper wire.

H. All ground rods and conductors shall be bonded using an exothermic welding process such as Cadweld.

I. Surface preparation recommendations of the manufacturer of the exothermic welding process to be used shall be followed.

J. All ground connections that are not exothermically welded shall use two-hole long barrel compression lugs.

13.1 Existing Communication Sites

A. For sites with existing structures and buildings, the Contractor shall make their best effort to locate a suitable, low-impedance ground point for interconnection of the protective grounding and bonding system and, at the County's option, the County shall review and approve the Contractor's grounding plan.

B. The connection point shall be the main building electrical service ground, building structural steel, and the tower ground system.

C. At any site where building structural members are used for grounds, connections to those main structural steel members shall be made with exothermic "Cadweld", Burndy press, or equivalent type connectors.

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13.2 New Communication Sites

A. All communications towers, equipment shelters, and communication sites shall be provided with a protective grounding and bonding system for the protection of equipment and personnel.

B. All sites shall have a single point external and internal ground system installed to provide the greatest possible protection against lightning strikes and power faults.

13.3 External Ground System

A. The external ground system shall consist of an equipment shelter ground ring, a tower ground ring, and a single well casing that shall be bonded together at a minimum of two points.

B. Site planning shall require that the main electrical service be brought into the shelter at a location as close to the transmission line entry port as practical.

C. All ground rods shall have a minimum length of 60 feet and a minimum diameter of 3/4-inches.

D. All ground rods shall be connected together using compression fittings (not threaded).

E. The ground rods shall be located no closer than 20 feet and no farther apart than 60 feet.

F. All ground rods shall be interconnected including the AC electrical service and telephone ground rods.

G. The minimum requirements for the quantity of ground rods installed shall be based upon the following:

   a. At least one (1) ground rod at each corner of all equipment shelters shall be installed

   b. Towers shall have a minimum of three (3) equally spaced ground rods connected to the tower ground ring

   c. The top of ground rods shall be 30-inches below finished grade

H. Inspection wells with removable lids shall be installed at the following junction points:

   a. Shelter to tower ground ring bond

   b. Shelter electrical utility ground location bond

   c. Inspection boxes shall be large enough to allow ground test readings to be taken with a clamp-on ground tester around the rod

13.4 Well Casing Ground Rod Enhancement

A. The County has implemented enhancements at some tower sites in an effort to minimize the potential for damaging lightning strikes that include the installation of a 2-inch, Schedule 40 galvanized steel pipe driven to a depth of 100 feet below grade level.

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B. The sites have a single point external ground system installed and the well casing ground is installed at a point near the intersection of the equipment shelter and tower structure ground ring systems.

C. The Contractor shall furnish and install one (1) well casing ground rod system consisting of a 2-inch, Schedule 40 galvanized steel pipe driven to bed rock or a maximum depth of 100 feet below grade level and bond it to the external ground system using #2/0 AWG stranded tinned bare copper wire and Cadweld connections as illustrated in Figure 3.

Figure 3 - Well casing ground rod system

D. All pipe threads are to be clean and coated liberally with PENETROX E.

13.5 Communication Shelter Internal Ground System

A. The shelter shall include an internal perimeter ground bus consisting of a #2 AWG tinned bare solid copper conductor, running along the perimeter of the room on each interior wall, at a maximum of 6-inches below the ceiling.

   a. The perimeter bus shall not form a continuous loop around the room and shall have an opening of 4-inches on the opposite side of the room from the interior master ground bus bar

   b. Insulated mounting standoffs shall be installed with a maximum separation of 2-feet to accommodate bends and to avoid sag

   c. Standoffs shall provide 1 to 2 inches of clearance from the wall

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d. Any splices of the interior perimeter ground shall be made with irreversible crimp connections

B. The Contractor shall bond all exposed noncurrent carrying metal parts of fixed equipment which could become energized to the internal perimeter ground bus.

C. At a minimum, the Contractor shall bond the following connections to the internal perimeter ground using green insulated #6 AWG stranded copper wire:

a. Electrical conduits, ventilation louvers and metal ductwork, transmission line pressurization equipment

b. Metal doors shall be bonded to the door frames using 1-inch wide braided copper flexible straps, and door frames shall be bonded to the internal perimeter ground bus

c. All metal racks and cabinets, including tower lighting cabinets, generator transfer switch cabinet, power and breaker panel cabinets, metal conduits, Telco/alarm panel demarcation block cabinet, metal HVAC lead-lag controller cabinets, cable trays, file and storage cabinets, metal desks and other exposed metal surface shall be bonded to the internal perimeter ground bus

D. The Contractor shall bond the cable tray sections together using green insulated #6 AWG stranded copper wire jumpers and two-hole long barrel compression lugs and bond the cable tray to the master interior ground bar.

E. All ground connections that are not exothermically welded shall use two-hole long barrel compression lugs.

F. Except for grounding of groups of electrical conduits, the Contractor shall not “daisy-chain” grounding and bonding jumpers.

G. The Contractor shall not make connections between dissimilar metals unless a material specifically approved for use with the dissimilar metals separates the conductors.

H. The Contractor shall place star or split lock washers under the head of the screws, bolts, or nuts and not between the conductive surfaces of the lug and the metal surface to be bonded.

I. The Contractor shall not use self-tapping sheet metal screws for attaching grounding conductors to any surface.

J. The Contractor shall remove paint from any painted surface before making ground connections and apply the appropriate antioxidant compound to the connection.

13.6 Ground System Resistance

A. All ground rods shall be interconnected to form a common ground grid system with a resistance of 5 ohms or less.

B. The Contractor shall be required to modify the grounding system to achieve a ground resistance of 5 ohms or less without chemicals.

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C. Ground test results shall be provided to the County once installation is complete.

13.7 Communications Shelter Ground Ring

A. A ground ring consisting of a #2/0 AWG stranded tinned bare copper wire shall be installed in a trench at a minimum depth of 30-inches below final grade at a maximum distance of 3-feet from the foundation of the equipment shelter where the equipment is installed.

B. All exterior and underground connections shall utilize the exothermic welding process such as Cadweld.

C. The ground ring shall be supplemented with copper clad steel ground rods.

13.8 Tower Ground Ring and Radial Ground System

A. The new communication towers shall be installed with a tower ground ring consisting of #2/0 AWG stranded tinned bare copper wire installed in a trench at a minimum depth of 30-inches below final grade at a maximum distance of 3-feet from the tower foundations.

B. The ground rings shall be supplemented with copper clad steel ground rods and all ground rods shall be interconnected and bonded together to form a common ground grid system.

C. The tower ground ring shall be supplemented by the addition of three (3) ground radials (minimum) that extend out in three (3) directions, spaced at approximately 120 degrees apart, from the tower base each with ground rod to a minimum distance of 80-feet, site conditions permitting.

D. The tower shall have a minimum of three (3) ground radials with copper clad steel ground rods spaced at least one (1) rod length apart along the radial.

E. The minimum requirements for the tower ground ring shall be based upon the following:

   a. The tower shall have a minimum of three (3) equally spaced ground rods connected to the tower ground ring

   b. The top of the ground rods shall be 12-inches below grade and an inspection well shall be installed at each ground rod

   c. All inspection wells shall be sufficient in diameter to allow for the use of a clamp-on ground tester

F. Inspection wells with removable lids shall also be installed at the tower ground ring to the shelter ground ring connection point(s). The inspection wells shall be sufficient in diameter to allow for the use of a clamp-on ground tester.

G. Each tower grounding tab shall be bonded to the tower ground ring by a #2/0 AWG stranded tinned bare copper conductor and be enclosed in non-metallic flex conduit.

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H. All grounding connections shall be made as straight as possible with a minimum number of bends.

I. The minimum bending radius of any ground wire shall be one foot.

13.9 Tower Grounding Tab

A. The tower base shall be equipped with grounding tabs for exothermically welding the tower base grounding conductor to the tower.

B. The grounding tabs shall be installed during the manufacture of the tower and prior to the galvanization process, and measure approximately 4-inch x 4-inch x 1/2-inch thick.

C. The tabs shall be attached to the tower base at a height of approximately 3-feet above the foundation.

13.10 Transmission Line Ground Bus Bars

A. The Contractor shall furnish and install a transmission line ground bus bar at the base of each transmission line ladder of the tower where the transmission lines sweep to the transmission line bridge.

B. The ground bars shall be a minimum size of 1/4-inch x 4-inch x 24-inch and shall be of tinned copper.

C. The ground bus bars shall be insulated from the tower steel and be equipped with an exothermically bonded #2/0 AWG stranded tinned bare copper pigtail which shall be exothermally bonded to the tower ring ground system.

D. The Contractor shall install the ground bus bars at a height just below each horizontal transmission line bridge to enable the termination of transmission line ground kits.

13.11 Transmission Line Waveguide Bridge Sections and Support Posts

A. The Contractor shall exothermically bond all transmission line bridge system support posts to the tower ground ring with #2/0 AWG stranded tinned bare copper wire.

B. Transmission bridge sections shall be exothermically bonded together and to the support posts with #2 AWG solid tinned bare copper wire.

13.12 Transmission Line and Waveguide Grounding, Bonding and Surge Protection

A. The Contractor shall follow good engineering and installation practices when performing the installation of equipment and lightning protection for the antenna systems.

B. The Contractor shall ground all provided transmission lines and waveguides with Andrew Corporation model ground kits with field attachable 2-hole crimp-on lugs, or approved equivalent.

C. The Contractor shall install the crimp-on lugs using the factory-recommended crimping device.

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D. The Contractor shall route all ground kits by the most direct path to the nearest grounding system conductor.

E. The Contractor shall separately attach and bond the transmission line and waveguide grounding kits to the tower using tower manufacturer approved methods, typically a mechanical clamp.

F. The Contractor shall install ground kits on each transmission line as follows:

   a. At the top near the antenna

   b. At intervals along the transmission line of no greater than seventy-five (75) feet

   c. At the tower transmission line ground bus bar near the point of transition from the tower to the cable bridge

   d. At the exterior ground bus bar at the cable entry port of the equipment shelter

G. The Contractor shall use Andrew Corporation Connector/Splice Weatherproofing Kit, or approved equivalent, for weatherproofing for transmission lines, waveguides and connectors.

H. The Contractor shall carefully wrap the cut in the jacket of the lines made for grounding with rubber weather proofing tape.

I. The Contractor shall cover the rubber tape with Scotch brand #88 all-weather vinyl electrical tape, or approved equivalent, per the manufacturer's instructions.

J. The Contractor shall wrap all ground kits connections at the transmission lines with overlapping layers of black outdoor electrical tape and protected with Scotchkote or equivalent outdoor treatment approved by the County.

K. A coaxial surge suppressor such as the Polyphaser series or equivalent shall be mounted and grounded at the entry port panel for each transmission line per the manufacturer's instructions.

L. All Contractor-provided outdoor antennas for control stations shall be equipped with a Polyphaser series surge suppressor or equivalent.

M. The Contractor shall cut the transmission lines to proper length for connection to the surge protection equipment.

13.13 Metallic Objects within the Site Compound

A. All exterior bonding/grounding conductors above grade shall be enclosed in non-metallic flex conduit wherever possible to protect the conductors from damage.

B. Any metallic object within the fenced compound or within five (5) feet of the fenced compound shall be bonded to the ground system.

C. If any object outside the compound is bonded to the ground system, any object within (5) feet of that object shall also be bonded.

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D. All bonds shall be made with #2/0 AWG stranded tinned bare copper wire, exothermically bonded to the ground system, and exothermically bonded to the object where practical.

E. At a minimum, the bond to the object shall be a two-hole lug connection.

F. The following items, if applicable, shall be bonded to the exterior ground system:

a. Fence posts and gate posts

b. Concrete foundations rebar

c. Transmission bridge support posts, metallic piping, and fencing

d. All railings, hand rails, and other metallic structures

e. Light posts or external light fixtures

f. Any other grounding systems present at the site

g. Skid or metal frame of the equipment shelter

h. Electrical and Telco service equipment and any other metallic shields, conduits, etc.

i. HVAC unit cabinets

j. Storage tanks within the compound whether above or below ground

13.14 Fence Grounding

A. The security fence shall be bonded to the shelter/tower grounding system.

B. Ground attachments to the fence posts shall be exothermic and located at each corner and gate post, and fence posts at intervals not to exceed 40-feet along the perimeter.

C. At each corner and gate post, a #2 AWG solid tinned bare copper wire shall be bonded to the razor wire and to the fence mesh at three (3) locations using split bolts.

D. At each grounded perimeter fence post, a #2 AWG solid tinned bare copper wire shall be bonded to the razor wire and to the fence mesh at three (3) locations using split bolts

E. The mesh shall be bonded to the copper wire at the top, center, and bottom of the fence and the copper conductor bonded to the exterior ground system.

F. For all walk through and vehicle gates, a #2/0 AWG stranded tinned bare copper wire shall be installed between the gate posts at a minimum depth of thirty (30) inches below grade level.

G. For all walk through and swinging vehicle gates, a #2/0 AWG stranded welding cable with black insulation shall be exothermically welded and installed between the gates and the gateposts.

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13.15 Control Station Antenna System Grounding

A. All Contractor-provided outdoor antennas for control stations shall be grounded as follows:

   a. It is preferred that the control station antenna system be bonded to building steel and connected back to the building ground system at the power service entrance

   b. At a minimum, the antenna mast and transmission line ground kit shall be grounded to a 5/8-inch X 8-foot copper clad steel ground rod driven to a depth of 12-inch below finished grade with #2 AWG solid tinned copper wire attached to the rod using exothermic welding

13.16 Lightning and Surge Suppression

A. It is the County's goal to reduce system damage and failure due to strikes or induced currents.

B. At a minimum, the Contractor shall comply with the surge protection practices depicted in this section.

C. All metallic conductors entering the equipment shelter shall be protected with the appropriate surge protection devices.

D. Surge suppressors shall be installed and bonded to the interior ground system as near as possible to the point of entry to the equipment shelter.

E. Surge suppressors shall be installed for the following:

   a. Commercial electrical service

   b. Tower lighting system - photo cell and lighting conductors

   c. Telephone, control, data conductors, fuel gauge conductors, etc. shall be protected with suitable surge protection devices

F. Any and all metallic conduits entering the equipment shelter shall be bonded to the interior grounding system.

13.16.1 Type 1 Primary IEEE Category C AC Power SPD

A. The primary AC power surge protection shall be an ANSI C62.41, Category C rated, UL1449 3rd Edition, Type 1, AC power Surge Protection Device (SPD) as required by this RFP.

B. The SPD shall be Advanced Protection Technologies (APT), Model TE01XAS15E1XD-W2, or approved equivalent.

C. The SPDs shall include large, 50kA Metal Oxide Varistors (MOVs), exceeding 32 mm in diameter.

D. The MOVs shall be configured to provide 100kA minimum protection for L-N and 50kA protection for L-G.

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a. Each MOV shall include a thermal safety disconnector(s)

E. The SPD Short Circuit Current Rating (SCCR) shall equal or exceed 100 kA or the available short circuit current, whichever is higher.

F. The Contractor shall ground the SPD using a green insulated #2 AWG stranded copper jumper bonded to the SPD and connected to the exterior shelter ground ring.

G. The Contractor shall install the devices in such a manner as to ensure that no connector wire lengths exceed 10-inches and to permit the replacement of protectors in a safe, convenient, and quick manner.

H. The Type 1 SPD shall be installed on the line side of the Main AC Disconnect.

I. For substitute product approval, the Contractor shall submit a certified, signed and sealed statement from a Florida Registered Professional Engineer that the device meets or exceeds all requirements of this section.

J. The SPD shall use field replaceable, modular technology.

K. Every MOV's operational status shall be monitored via visual indicator.

L. SPD shall include one (1) set of Normally Open/Normally Closed Form "C" dry contacts for remote monitoring.

M. The Contractor shall provide a spare MOV module with each Primary AC Power SPD.

13.16.2 Type 1 Secondary IEEE Category C AC Power SPD

A. The secondary AC power surge protection shall be an ANSI C62.41, Category C rated, UL1449 3rd Edition, Type 1, AC power SPD as required by this RFP.

B. The SPD shall be Advanced Protection Technologies (APT), Model TE01XDS104XA-W2, or approved equivalent.

C. The SPDs shall include directly connected MOVs exceeding 32 mm in diameter from L-N and L-G.

a. Each MOV shall include a thermal safety disconnector(s).

D. The SPD SCCR shall equal or exceed 100 kA or the available short circuit current, whichever is higher.

E. The Contractor shall ground the SPD using a green insulated #2 AWG jumper bonded to the SPD and connected to the interior perimeter split halo ground.

F. The Contractor shall install the devices in such a manner as to ensure that no connector wire lengths exceed 10-inch and to permit replacement of protectors in a safe, convenient, and quick manner.

G. The Type 1 SPD shall be installed on a 40-amp breaker on an open space in the load distribution center.

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H. For substitute product approval, the Contractor shall submit a certified, signed and sealed statement from a Florida Registered Professional Engineer that the device meets or exceeds all requirements of this section.

I. The SPD shall use field replaceable, modular technology.

J. Every MOV's operational status shall be monitored via visual indicator.

K. The SPD shall include one (1) set of Normally Open/Normally Closed Form "C" contacts for remote monitoring.

L. The Contractor shall provide a spare MOV module with each Primary AC Power SPD.

13.16.3 Tower Lighting Controller SPD

A. The tower lighting SPD system shall be based on ANSI/IEEE C62.41 and UL 1449 3rd Edition.

B. The SPD system shall provide a single common reference to ground to protected tower light circuits.

C. Low voltage and photocell SPDs shall be UL 497B Listed.

D. The SPDs shall be Advanced Protection Technologies (APT) TWL Series model or a County-approved equivalent, with the appropriately rated SPD devices selected for the protection of the specific tower light controller.

E. If the SPD unit is modular, then either the entire unit or each module may satisfy these criteria:

   a. All 120 - 500 V (AC or DC) surge protection shall be Type 1 SPDs

   b. All 12 - 24 V (AC or DC) surge protection shall be Type 2 SPDs, at a minimum

F. The Contractor shall mechanically connect the tower light controller SPD to the equipment shelter split halo copper ground.

G. The SPD shall be configured to protect all tower light lines (all markers, strobes, beacons, and photoelectric control device) entering the tower light controller.

H. The SPDs shall be installed in such a manner as to ensure that the ground connector wire length does not exceed 10-inches, and permits replacement of these protectors in a safe, convenient manner.

13.16.4 Low-Voltage and Copper Line Surge Suppression

A. All Telco leased line circuits, outdoor microwave Ethernet conductors, alarm conductors, fuel gauge and generator control circuits, security cameras, and all other copper conductors that enter an electronic equipment room or equipment shelter shall be equipped with electrical surge suppression devices utilizing the appropriate surge suppression device, Transtector series, Northern Technologies TMC-50, or equivalent.

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B. These arrestors shall be installed as close as practicable to the point of entry to the facility.

C. Surge suppression devices used on Telco leased circuits shall consist of both primary at the Telco demarcation and secondary at the point of cross-connection to communications equipment.

   a. Primary surge suppression devices shall use silicon avalanche diode technology, and shall be bonded to the equipment shelter/room ground system.

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14. BACKHAUL NETWORK

14.1 Primary Network Backhaul System

A. The Contractor shall furnish and install a new microwave radio system with a minimum of 155 Mbps capacity radios to all sites.

B. The backhaul network shall be designed to incorporate MPLS.

C. The backhaul network and MPLS system shall be capable and configured to support the County's current T1 circuits that support the EDACS analog and E&M circuits.

D. The County has a preference for microwave radio equipment from Microwave Networks Inc. (MNI) of Stafford, Texas.

E. The Contractor's backhaul design shall not incorporate leased lines of any type.

F. The Contractor shall design and implement a robust and redundant design that optimizes backhaul reliability and redundancy.

G. The microwave system shall utilize IP technology and FCC licensed 30 MHz channels on all paths.

H. The microwave system shall utilize adaptive code modulation to increase the network reliability.

I. The proposed microwave system shall consist of all indoor mounted radio equipment unless stated otherwise.

J. The new digital microwave communications network shall provide network connectivity support to include the following:

   a. Loop protected connectivity between all P25 transmit/receive communication tower sites and the network core locations

   b. A minimum of two microwave loops shall be provided in the design

   c. Utilize existing fiber optic connections between EOC-A and EOC-B and the primary and backup dispatch centers

   d. Provide native Ethernet and TDM protocols to support the County's legacy T1 circuits and channel banks linking the current EDACS system

K. Two additional structures may be used as part of the microwave system design:

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Tower Site	Coordinates	ASR	Structure (ft)	Overall (ft)
CR304	29-20-42.6 N 081-18-25.6 W	TBD (Flagler County)	350	379
EOC-B	29-08-13.0 N 081-08-38.3 W	1030518 (Crown)	305	325

Table 26 - Additional Tower Structures

L. The following conceptual design (Figure 4) has been provided; however, the Contractor may propose a design that provides greater reliability and availability that meets the following criteria:

   a. Minimizes path lengths and considers effects of rain fades

   b. Considers the effect of a loss of one or more paths on the two simulcast systems

   c. Considers structural capacity of the towers (see Section 12.1.1)

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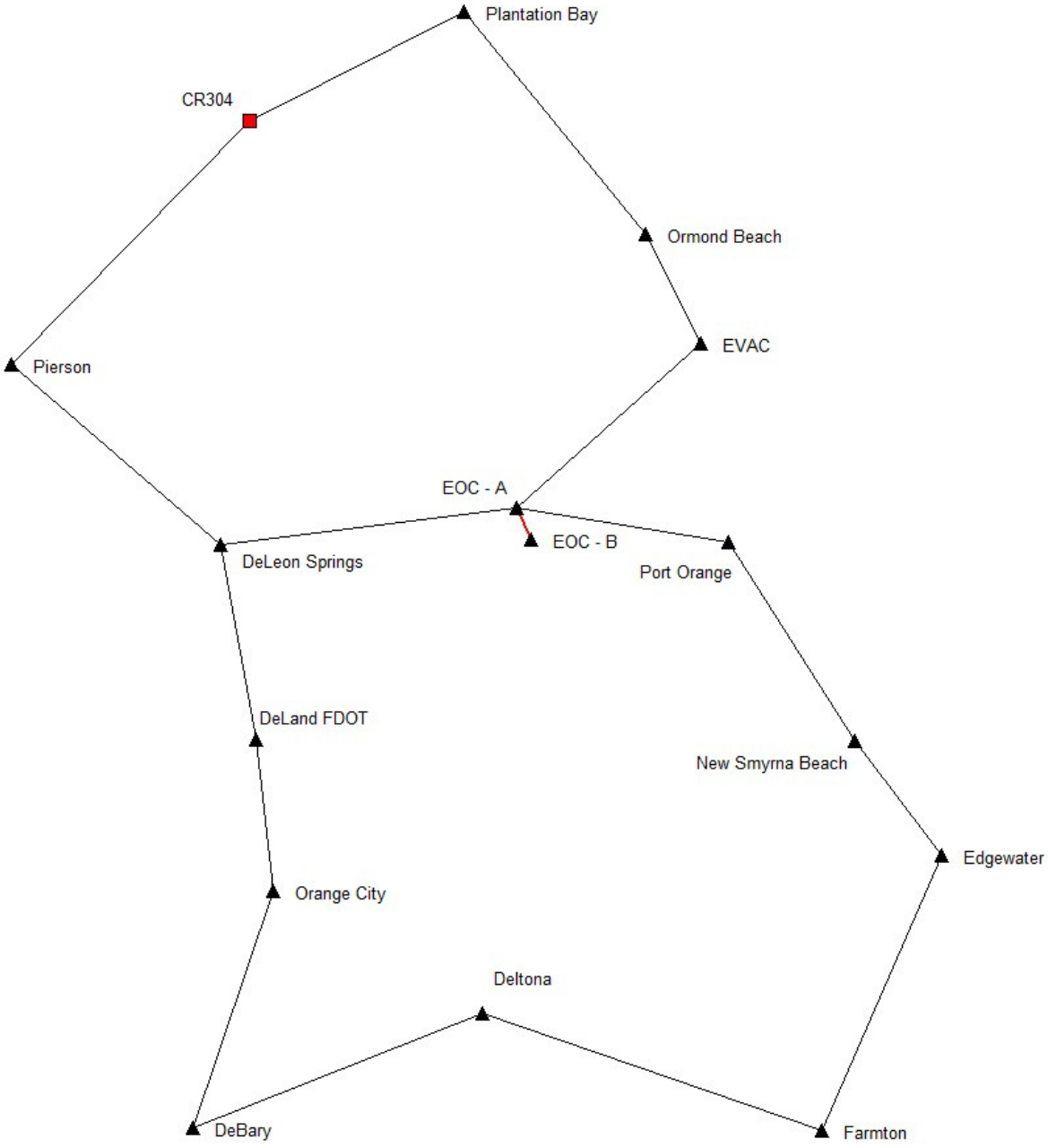

Figure 4 - P25 System Microwave Design Overview

M. The equipment shall be designed and manufactured for continuous duty operation in a fixed station application and, with proper maintenance, have an expected operational and maintenance service life of at least twenty (20) years.

N. All equipment and hardware including wiring, connectors, cabling, fuses, circuit breakers, brackets, fasteners, power supplies, surge suppressors, converters or conditioners, and other items that are necessary to provide a complete and fully functioning microwave network shall be furnished by Contractor.

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O. The manufacturer of the proposed equipment and the designer of the microwave system shall have at least ten (10) years of experience in designing and providing microwave equipment for critical communications system users such as public safety.

P. The Contractor shall design the system using a technology which will not suffer any degradation due to adverse weather conditions throughout all seasons of the year for any length of time no matter how short the duration.

Q. The Contractor shall include in the proposal a full and complete materials list and full and complete set of specifications describing the system as proposed.

14.2 Microwave Relay Site CR304

A. The Flagler County tower site CR304 will be utilized as a microwave relay site to close the microwave loop between the Plantation Bay site and the Pierson tower sites.

B. The microwave radios and supporting equipment will be installed in the Flagler County equipment shelter and the microwave antennas and waveguide will be installed on the Flagler County's tower at locations commensurate with the Contractors microwave system design.

C. The Contractor shall furnish and install a single microwave equipment rack containing the two (2) microwave radios, a dehydrator system, and a -48VDC battery power plant.

   a. The Contractor shall indicate in their proposal if their design requires more than one equipment rack

D. The Contractor shall bolt the equipment rack to the floor and bond the equipment rack to the existing shelter interior ground system.

E. The Contractor shall furnish and install the two (2) microwave antennas and waveguides.

F. The Contractor shall furnish and install three (3) 120VAC, 20A circuits to the existing electrical panels to provide two (2) circuits for the -48VDC rectifiers and one (1) circuit for the dehydrator.

14.3 Farmton to Brevard County ISSI Link

A. The County will implement a non-MHSB, 6 GHz microwave spur link to the Brevard County Scottsmoor tower site to support an ISSI connection between Volusia and Brevard Counties.

   a. The Brevard County Scottsmoor tower site is located in Mims, Florida, approximately 7.7 miles from the new Farmton site

   b. The 250-foot Scottsmoor tower site is ASR 1289099

B. The Contractor shall furnish and install both ends of the new microwave link.

C. The Contractor shall furnish and install a new microwave radio spur with a minimum of 45 Mbps capacity radios to a Brevard County communication site.

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D. The Counties have a preference for Proteus model microwave radio equipment from Microwave Networks Inc. (MNI) of Stafford, Texas.

E. The Contractor shall integrate the microwave radio network management functions into the County's loop microwave management system.

F. The microwave link shall utilize IP technology and FCC licensed 10 MHz channels.

G. The microwave link shall utilize adaptive code modulation to increase the network reliability.

H. Each end of the proposed microwave link shall consist of all indoor mounted radio equipment, a 6-foot microwave antenna, and 200-feet of elliptical waveguide.

I. For the Farmton site, the Contractor shall install the equipment along with the loop microwave equipment connecting to the new dehydrator and -48VDC power system.

J. For the Brevard Scottsmoor site, the Contractor shall furnish and install the following:

   a. A new 8-foot equipment rack bonded to the site's existing interior ground system

   b. A new -48VDC power system with 8-hr run time batteries connected to the site's existing electrical receptacles

   c. A new dehydrator and manifold

   d. A punch block for the termination of microwave local site alarms

14.4 Performance Objectives

A. The Contractor shall design all microwave paths for a minimum annual one-way, per-path availability of 99.999% or better for 10-6 BER at 128 QAM or better.

B. All microwave paths shall utilize licensed 30 MHz channels and provide a minimum throughput of 155 Mbps unless stated otherwise.

C. All microwave paths shall utilize adaptive code modulation.

D. Contractor shall utilize monitored hot standby radios for all spur paths unless otherwise specified.

E. It is recognized that the mathematical models to predict availability vary within the industry; consequently, the Contractor shall fully support its system design with the procedures, equations, and theories used to compute availability.

F. The proposed microwave system equipment shall be capable of providing the following protection options:

   a. Loop protection

   b. Non-protected

   c. Monitored hot standby

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d. Monitored hot standby space diversity

e. Split transmitter space diversity

f. Errorless Receive Switching - all receiver switching, including diversity path selection, shall be errorless

g. Adaptive code modulation with licenses up to 512 QAM minimum

G. The Contractor shall specify the mean time between failures (MTBF) of their proposed equipment.

14.5 Microwave Equipment Requirements

A. The Contractor shall propose monitored hot-standby (MHSB) transmitters and receivers for all spur paths unless otherwise specified.

B. The antenna input to MHSB receivers shall be via an asymmetrical minimum loss splitter favoring the "A" receiver to maximize fade margin.

C. The receiver outputs shall switch in an "errorless" manner.

D. The MHSB transmitters shall switch in a manner to provide proper termination and isolation to the standby transmitter.

E. The Contractor shall include provisions for testing and alignment of the standby units without disturbing the active units.

F. The transmitters and receivers shall be sensed and switched separately and both transmitters and receivers shall meet all requirements of these specifications when in the active mode (threshold of the "B" receiver excepted due to asymmetrical splitting).

G. The Contractor shall include in the proposal a description of the switchover operation during equipment failures.

14.5.1 Monitoring and Test Points

A. The microwave radio equipment shall contain readily identifiable test points and built-in metering to determine proper equipment operation and perform alignments and adjustments.

B. The system shall be capable of reporting alarm conditions as they occur and in plain language.

C. The Contractor shall provide alarm status monitoring terminals at the following locations:

a. 49 Keyton Drive facility

b. The IT Computer Room at the EOSCC

D. The Contractor shall equip each alarm status monitoring terminals with 22-inch LCD display monitors.

E. The Contractor shall provide the ability for remote monitoring of the system.

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14.6 DC Power Plant

A. The Contractor shall power the new microwave radio system equipment from the sites' -48VDC power plant system.

B. The equipment shall provide alarm outputs for use with the Network Control and Monitoring System and status indications for local observation.

14.7 Physical Path Surveys

A. Contractor shall physically survey all paths associated with the proposed microwave network.

B. Contractor shall document the location of antenna towers, building structures, significant trees, and other landmarks or improvements associated with the microwave paths.

C. Contractor shall provide all personnel, transportation, lodging, subsistence, surveying instruments, maps, etc., necessary to perform the work.

D. Survey activities shall include the determination of the following:

   a. Critical obstructions on-path and potential obstructions off-path

   b. Reflection points/unblocked reflections

   c. Expected tree growth along paths

   d. Site geographic coordinates

   e. Site elevations

   f. Recommended antenna heights based on survey data and performance objectives

E. The report shall include the following documentation:

   a. Data determined by the survey activities

   b. Antenna tower locations accurately depicted on 8-1/2-inch by 11-inch sections of USGS 1:24,000 topographic maps; proposed path azimuths shall be depicted relative to True North

   c. Profile graphs for each path surveyed. Path profiles shall be constructed using terrain data from USGS 1:24,000 topographic maps and modified as necessary with field survey data

   d. Path profiles shall consider radio refractive index and depict critical obstructions, reflection points, target height above obstructions, antenna centerlines, and line of sight

   e. Site plot plans depicting structures, landmarks, tower orientation, and improvements

   f. Proposed path azimuths shall be depicted relative to True North

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g. The plot plans are not meant to serve as construction drawings but should present the site features with reasonable accuracy

h. Recommendations relative to the viability of the proposed microwave paths, reliability considerations, and/or alternate routings, and any suggestions that Contractor deems appropriate to the Project

i. Site geographic coordinates referenced to NAD 83 and identified with notation NAD 83

j. Photos depicting the view of the path from each end

F. The Contractor shall coordinate with the County and its technical consultant in advance of its field activities.

G. Should it be obvious to the Contractor, during the field survey activity, that a particular path is not viable, the Contractor shall immediately advise the County and their technical consultant in writing.

14.8 Microwave Frequencies and Licensing

A. The paths for the digital microwave network shall utilize licensed Federal Communications Commission (FCC) Part 101 frequencies assigned for full-period service.

B. All new microwave frequencies shall be 30 MHz channel bandwidth.

C. The Contractor shall submit the results of the required path engineering analysis and the applications for FCC authorization to the County for review prior to filing with the FCC.

D. The Contractor shall be responsible for all costs associated with microwave frequency coordination.

14.9 Microwave Antenna Systems

A. The Contractor shall propose all new antennas, transmission line waveguides, mounting apparatus, and installation hardware for the digital microwave system.

B. The Contractor shall propose solid parabolic dish antennas and jacketed copper elliptical waveguides appropriate for the proposed frequency band.

C. The antenna system VSWR shall be commensurate with the return loss specification of the Contractor's microwave radio antenna.

D. The Contractor shall furnish appropriate mountings as required for support of the microwave antennas.

E. The Contractor shall provide the necessary equipment, hardware, labor, and procedures to securely attach the microwave antennas to the supporting structure.

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14.9.1 Microwave Antennas

A. Antennas shall be CommScope or engineer-approved equivalent, and sized according to the system design.

B. Each antenna shall be of solid construction with pressurized feeds and long-life radomes, and rated for a minimum survival wind speed of 155 mph.

C. Each antenna shall be equipped with two (2) side strut braces, for maximum wind speed survival.

14.9.2 Elliptical Waveguide Lines

A. The Contractor shall employ jacketed copper elliptical waveguide in continuous lengths for all waveguide transmission line runs and install in accordance with manufacturer's specifications; **NO splices are permitted**.

B. Flex waveguide shall not be used outdoors and the copper elliptical waveguide shall be properly supported and terminated directly to the antenna.

C. Waveguide shall be Andrew EW series as manufactured by CommScope, Inc. or engineer-approved equivalent.

14.9.3 Pressurization Equipment

A. The Contractor shall connect the new pressurized waveguides to the existing communication site dehydrator system.

B. The Contractor shall furnish and install all manifolds, gauges, and lines required to connect the new waveguides to the existing systems.

C. The Contractor shall provide a new dry air pressurization system for pressurization of microwave antenna feeds and elliptical waveguides at the new CR304, Plantation Bay, and Farmton communication sites.

   a. The pressurization system shall be an Andrew MT-050 series dehydrator with ML series Line Monitor as manufactured by CommScope, Inc. or engineer-approved equivalent.

D. The Contractor shall provide all required fittings, regulators and pressurization lines, gauges, distribution manifolds, and installation hardware to connect to the dehydrator systems.

E. The Contractor shall provide separate pressure metering for each waveguide pressurized.

F. The Contractor shall furnish and install pressure alarm connections to each site's existing NetGuardian monitoring and alarm system.

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14.10 Interruption of Network Backhaul Connectivity for Existing Systems

A. It is mandatory that the existing communication systems, applications and services currently supported by the existing microwave backhaul network be maintained uninterrupted during the upgrade of the microwave radio system.

B. The Contractor shall provide a detailed plan in their proposal to support all existing systems that utilize the current backhaul network.

C. The Contractor shall provide any and all necessary hardware, temporary leased lines and equipment as needed to maintain these networks.

14.11 Microwave Equipment Installation

A. The microwave system installation shall include all of the equipment formally specified for the new digital microwave system and all other equipment, hardware, and procedures required for a complete operating system.

B. The Contractor shall install the microwave radio equipment in accordance with the technical parameters of the FCC license authorizations and all applicable requirements of Part 101 of FCC Rules and Regulations.

C. The Contractor shall provide the necessary wiring, cabling, and conduits necessary for connection of the microwave station equipment to power and ground.

D. The Contractor shall firmly bolt equipment racks in place.

E. As necessary, the Contractor shall provide, route and terminate all cables to the demarcation blocks within the equipment shelter.

14.11.1 Antennas and Transmission Lines

A. The Contractor shall mechanically and electrically align the microwave antennas for proper operation.

B. The Contractor shall “finish-cut” all microwave transmission lines to length.

C. All pressurized transmission lines routed to indoor mounted pressurization and radio equipment shall have a downward slope from the antenna support structure to the radio equipment shelter (no drip loop).

D. The Contractor shall install pressurization systems to all elliptical waveguides provided by the Contractor and any unused pressurization ports shall be properly terminated.

E. During any microwave antenna installations, the Contractor shall immediately seal the antenna end of the waveguide with the appropriate pressure window.

F. The Contractor shall replace any waveguide that is not pressurized within twelve (12) hours of installation at no additional cost to the County.

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15. INSTALLATION REQUIREMENTS

15.1 General Installation Requirements

A. The Contractor shall review the existing site installations for compliance with their installation standards and include any required infrastructure upgrades in their proposal.

B. The Contractor shall execute all aspects of the system installation work in a professional manner.

C. The County is extremely concerned about the quality of the surge suppression and the grounding and bonding equipment and techniques, and the Contractor shall maintain the County's high standards while implementing the new system.

D. The Contractor shall perform the equipment installation required by this RFP in accordance with industry standards and best practices, and the manufacturers' installation standards and specifications for the equipment provided as well as other attachments, hardware, software, and procedures as may be required to ensure a complete installation which is in accordance with the standards of good engineering practice, all Federal, State, and County regulations and codes, and all building codes and ordinances in effect at the sites delineated in this RFP.

E. Proposal pricing in Exhibit B – Pricing Sheets shall include all installation hardware, brackets, braces, fasteners of all kinds, wiring, ancillary devices, procedures, and services required to install and/or interface components to provide a complete operating system, which fulfills the requirements of this RFP.

F. To the fullest extent possible, the existing radio communications systems shall remain in operation during installation of the new system and until the County provides Final System Acceptance and the notice to proceed with the decommissioning of the existing system.

15.2 Installation Approval

A. The Contractor shall obtain the County's approval to commence installation work on a site-by-site basis. No work shall commence without written approval from the County.

B. The Contractor shall provide complete descriptions and site drawings showing the proposed installations at each site at least thirty (30) days prior to beginning work at that site.

15.3 Equipment Storage and Delivery

A. The Contractor shall be responsible for delivering, storing, placing, handling, and disposition of materials.

B. All initially unused material, brackets, keys, hardware, accessories, etc. shipped with the equipment to be installed are to remain property of the County and as such, shall be retained by the County.

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15.4 Installation Coordination

A. The Contractor shall provide at least one Project Manager on site during critical phases of the system installation.

B. The Project Manager shall oversee all aspects of system implementation, including site preparation, equipment inventory, equipment programming, staging, installation, etc.

C. Other individuals may assist the Project Manager in various functions such as reporting, accounting, testing, optimization, etc., but this individual shall have primary responsibility for the performance of the system.

D. The Project Manager shall carefully coordinate all phases of the work with the County to provide site access and minimize equipment downtime.

E. The coordination efforts shall be between the Contractor, their subcontractors, and the County.

F. Access to the sites shall require prior coordination with the County.

15.4.1 Standards

A. Standard requirements for the installation of radio communications equipment shall include the adherence to the following standards at a minimum:

a. American National Standard for Telecommunications:

i. T1.334-2002, Electrical Protection of Communications Towers and Associated Structures

ii. T1.313-2003, Electrical Protection for Telecommunications Central Offices and Similar Type Facilities

iii. T1.333.2001, Grounding and Bonding of Telecommunications Equipment

iv. ANSI-J-STD-607-A-2002, Commercial Building Grounding and Bonding Requirements or Telecommunications

v. ANSI/NFPA 780-2004, Standard for the Installation of Lightning Protection Systems

b. National Electrical Code

c. The Contractor's installation standards and guidelines document, subject to approval by the County

15.5 Infrastructure Equipment Installation

A. The location and position of all equipment shall be in accordance with good engineering practices and conscious of County practices, such that optimum functional efficiency and equipment maintainability shall result.

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B. All equipment shall be arranged and installed in a coordinated fashion so that each item of equipment's intended function shall not be impaired due to the influence of adjacent equipment or environmental factors.

C. Sufficient space and clearance shall be provided so that service and maintenance of each item of equipment can be readily performed.

D. All external equipment inter-cabling, whether network, RF, electrical power, audio/data, or control cables and/or wiring, shall be labeled with pre-printed adhesive wire markers/labels.

E. Markers shall be placed at each end, and adjacent to the connector, plug, or terminus; this data shall be recorded in the installation documentation.

F. All equipment cables or cable bundles within the equipment shelter, to the greatest extent feasible, shall be neatly tied by means of plastic tie wraps and secured by clamps to flat surfaces.

G. For cables and/or wiring installed within the equipment shelter, markers shall be placed at the termination points of each cable.

H. All cable/wiring bundles exiting the equipment must do so through the top of the cabinets or racks.

I. Rubber grommets or other suitable protection shall be used at cabinet knockouts to protect the cable/wiring.

J. Splicing of network, RF, electrical power, audio/data, or control cable/wiring will not be permitted.

15.5.1 Equipment Mounting

A. To maximize space utilization and facilitate equipment maintenance, the Contractor shall install the fixed equipment in open 19-inch self-supporting racks or equipment cabinets.

B. The Contractor shall propose their recommended methods and provide an option for other methods that the County may prefer.

C. The Contractor shall install the equipment and connect the equipment to the appropriate AC and DC power sources.

15.6 Antenna Systems Installation

A. The Contractor shall include in their proposal, engineering drawings that depict the proposed installation including the antenna tower and antenna mounting assemblies, tower-top amplifiers, transmission lines, jumpers, connectors, ground kits, and surge suppression devices.

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15.6.1 Antenna System Documentation

A. During the Detailed Design Review, the Contractor shall provide figures and engineering drawings that detail the antenna tower and antenna mounting assemblies, tower-top amplifiers, transmission lines, ground kits and connectors, and surge suppression devices.

B. During the Detailed Design Review, the Contractor shall provide Tower Loading Detail drawings that depict the antenna tower with the antenna mounting locations and proposed equipment.

15.6.2 Communications System Antennas

A. The antennas shall be supplied with mounting brackets and all other suitable mounting hardware for mounting to a 6-foot sidearm mount located at the specified level of the tower.

B. All antenna mounts and sidearm mounts shall include a “stiff arm” or “tie-back” brace to prevent movement under high wind conditions.

C. All brackets, mast, clamps, and hardware shall be of a suitable material to minimize corrosion and rust.

15.6.3 Transmission Lines and Waveguides

A. Transmission lines and waveguides shall be cut to length.

B. The equipment shelter end of the coaxial transmission lines shall terminate at the surge suppression device on the interior of the transmission line entry port.

C. Each transmission line connector on the bulkhead panel shall be labeled to identify its associated antenna and mounting height.

D. The equipment shelter end of the microwave waveguide lines shall terminate at a point above the microwave equipment rack to allow a short flexible waveguide to be connected.

E. The Contractor shall meet all manufacturers’ cable bending specifications for strain relief purposes.

15.6.4 Hangers and Hoist Grips

A. All transmission lines and waveguides shall be securely fastened using the specified clamp devices.

B. Hanger clamps shall be approved by the cable manufacturer, installed per cable manufacturers’ instructions, and properly torqued.

C. The best commercially available parts shall be used, no snap-in hangers are allowed without written permission from the County.

D. Hoist grips shall be utilized at the manufacturer specified intervals for lifting the transmission line or waveguide.

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E. Hoisting grips shall be left in place to secure the cable.

15.6.5 RF Connectors

A. The mating surfaces shall remain tightly wrapped and protected until mating; touching with the fingers shall be avoided.

B. Silicone or other material shall not be used in the connectors.

C. All connectors shall be approved by the cable manufacturer, installed per the manufacturers' instructions, and be properly torqued.

D. Connectors shall be torqued to the manufacturer's specifications with a proper torque wrench; hand tightening is not acceptable.

E. After proper torqueing, outdoor connections shall be shrink tube protected to preclude corrosion.

F. Shrink tube size shall be in accordance with the manufacturer's recommendations for the size of line and type of connector.

15.6.6 Coaxial Jumpers

A. Coaxial jumper cables shall be used to interconnect all interference protection or multiplexing devices with the coaxial antenna transmission line and radio frequency equipment.

B. Coaxial jumper assemblies for each antenna shall be factory constructed to length.

C. The connection to the top of the transmission line shall be weather-protected and the connection to the antenna shall be weather-protected as described in this RFP.

15.6.7 Control Station Antennas

A. All control station antennas provided and installed by the Contractor shall be installed using solid-jacketed transmission line installed as specified in this RFP.

B. Directional or omni-directional control station antennas shall be provided as specified in this RFP.

15.7 Transmitter Combiners, Duplexers, and Filters

A. The transmitter combiner, duplexer, and filter components shall be mounted in an "open" floor mounted rack or integrated into equipment cabinets.

15.8 Receive Multicouplers and Tower-Top Amplifiers

A. The receiver multicoupler shall be installed within the equipment room and mounted in a rack or equipment cabinet.

B. All connectors, joints and fasteners shall be securely tightened and properly torqued to preclude RF noise generation.

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C. All exterior connections shall be weatherproofed per the transmission line requirements of this RFP.

D. The tower-top-amplifier enclosure shall be grounded in accordance with the manufacturer's specifications.

15.9 Infrastructure Equipment Removal and Disposal

A. The Contractor shall be responsible for the removal of all legacy system antenna systems and other infrastructure equipment following the transition of communications to the new P25 system and the successful completion of the 60-Day Performance Period.

B. All removed or de-installed equipment shall be properly stored at a location provided by the County unless the Contractor has offered a trade-in discount.

C. The Contractor shall provide a detailed inventory list of all equipment including model number, serial number, and location of removal.

D. The County encourages the Contractor to offer a salvage or trade-in credit in its proposal to take possession of any desired salvaged material.

E. The Contractor shall be responsible for the proper and legal disposal of all equipment not retained by the County or taken as trade-in by the Contractor.

15.10 Dispatch Center Installations

A. The Contractor shall provide any and all equipment racks, grounding and bonding, surge protection devices, and miscellaneous hardware and components required for completion of the dispatch console installations.

B. All installations shall be neat and professional and performed per the manufacturer's recommendations using good engineering practice with cables bundled, no sharp edges exposed, no wire exposed, etc.

C. All console related equipment shall be bonded to the dispatch facility ground systems.

D. All ancillary equipment such as base stations and control stations shall have their antenna systems and transmission lines bonded to ensure that any surge currents do not reach the communications equipment including the console operator positions and personnel.

E. Current dispatch equipment shall remain operational at every dispatch position until the P25 system is complete and operational or until dispatch capabilities are fully integrated into the new consoles.

F. All console operator position installations shall be performed in a manner and to a schedule that minimizes any interruptions to dispatch operations.

G. The Contractor shall coordinate all dispatch center installation and removal activities with County Project Manager.

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15.11 Voice Logging Recorder System Installation

A. The Contractor shall furnish and install any necessary devices, interfaces, firmware, and software to connect the trunking equipment to the voice logging recorder system equipment.

15.12 Site Cleanup and Restoration

A. At the completion of the installation work, the Contractor shall remove all decommissioned equipment, packaging materials, and all other debris as a result of the work and return the work areas to normal, broom-clean, conditions.

B. The Contractor shall repair or replace at its own expense damage to any equipment, floor tiles, rooftops, exposed surfaces, or other building facilities in any way. The County reserves the right to require that the Contractor replace damaged equipment instead of repairing damaged equipment.

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16. PERFORMANCE VERIFICATION AND ACCEPTANCE

A. Performance verification shall consist of factory tests, mechanical installation inspections, field specification tests, field functional and operational tests, radio coverage tests, and system reliability tests.

B. The Contractor, in conjunction with the County's technical personnel and representatives, shall verify and demonstrate to the County that all systems and equipment have been properly installed, optimized, tested, is fully functional, and meets all of the requirements specified within this RFP and any resulting Contract.

C. The Contractor shall perform radio coverage verification tests for the communication systems (Drive Testing) with participation of County radio personnel and the Omnicom Consulting Group.

D. The Contractor provided acceptance test plans used to conduct the performance verification tests shall be mutually agreed upon.

E. The Contractor shall provide all necessary technical personnel, transportation, and test equipment to conduct the performance verification tests.

F. The Contractor shall coordinate scheduling of the testing with the County.

G. The Contractor shall document all deviations, anomalies, and test or specification failures discovered during testing in a punch list and shall remedy them in a timely manner.

H. When the system has been fully installed, programmed, optimized, made operational, and fully tested by the Contractor according to the agreed upon test scripts, the Contractor shall notify the County in writing that the system is ready for acceptance testing.

I. The proposed Project Schedule shall include an appropriate amount of time for the County’s representatives to witness all such testing.

J. The Contractor shall record all test results in a standardized format.

K. The Contractor shall submit the format to be used for recording of test program data to the County for approval a minimum of thirty (30) days prior to testing.

L. Designated representatives of the County and Contractor shall witness, date and sign all recorded test results.

M. The Contractor shall present all test results in a single test report.

16.1 Factory Staging and Acceptance Testing

A. The Contractor shall provide a Factory Acceptance Test plan (FATP) to the County at least thirty (30) days prior to commencement of the Factory Acceptance Test (FAT) for County review and approval. Contractor shall stage all trunked and conventional communications and backhaul systems infrastructure equipment at the Contractor’s factory location within the continental United States for the purpose of conducting a FAT.

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B. All equipment shall be tested and confirmed to be functional within the factory-staged systems prior to acceptance of the FAT by the County.

C. At the Factory Staging and Acceptance Test, the Contractor shall assemble all of the infrastructure equipment required to make a fully operational communications system into the proposed configuration and tested as a system, including, but not limited to:

   a. Repeater site equipment

   b. Network and site controllers

   c. LAN/WAN/Backhaul and distribution equipment

   d. Alarm panels and control units

   e. Dispatch consoles

   f. Conventional gateways

   g. Network Control and Management Systems

D. The County, at their option, may supply representatives to witness the Factory Staging and Acceptance Test of the system.

E. At the successful completion of the Factory Staging and Acceptance Test, the Contractor shall ship the fixed network only after receiving written approval by the County.

F. Upon receipt of the County's approval, the fixed network equipment shall be delivered to the Contractor's facility by a method designed to safely transport sophisticated electronic equipment.

G. Upon arrival at the destination, the Contractor shall receive and inventory all equipment.

H. The Contractor shall be responsible for any interim storage required for the equipment prior to the delivery to the County sites for installation.

16.2 System Acceptance Test Plan

A. The Contractor shall provide a System Acceptance Test plan (SATP) to the County at least thirty (30) days prior to commencement of the System Acceptance Test (SAT) for all communication systems and backhaul communication systems equipment for establishing the basis of Final System Acceptance.

B. This plan shall form the basis for a mutually agreed upon SATP between the County and the Contractor.

C. The SATP shall, as closely as possible, resemble the "real life" application of the communications system and equipment.

D. An example of the topic areas to be analyzed in depth in the field shall include, but not be limited to, the following testing areas which must show conformance to all of the specifications contained in this RFP:

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a. Site facilities mechanical inspection, functionality and performance (e.g., generators, power plant systems, shelter alarms, fire suppression, grounding, etc.) for site facilities provided by the Contractor

b. Base station transceiver functionality, optimization, and performance

c. Network backhaul system functionality and performance

d. System infrastructure P25 features, redundancy systems and hardware, functionality, programming, and performance

e. Network Control and Management Systems functionality and performance

f. Dispatch console redundancy, functionality and performance

g. Interoperability and mutual aid interface infrastructure functionality and performance

h. P25 ISSI interoperability conformance

i. Conventional interface infrastructure functionality and performance

j. Radio coverage design verification

k. 60-Day Performance Period

16.3 Tower and Facilities Mechanical Inspection and Tests

A. The entire infrastructure installation effort shall be inspected by the Contractor and observed by the County for conformity to this RFP.

B. All equipment and installation services provided under the requirements of this RFP shall be inspected for compliance to the standards of good engineering practice, all Federal, State, and County regulations and codes, and all building codes and ordinances in effect at the sites delineated in this RFP.

C. Particular attention shall be paid to:

a. All installation work performed in a neat and professional manner in compliance with manufacturer's recommendations

b. All fasteners and hardware tightened and properly torqued

c. All backup power and electrical systems are properly installed and configured

d. Towers properly oriented, if applicable

e. Tower lighting systems fully operational, if applicable

f. All antennas are plumb and of proper pattern and orientation

g. All transmission lines are properly installed, labeled, and swept

h. Interior and exterior ground systems properly installed and bonded

i. All SPD/TVSS devices are appropriate for the application and properly installed and bonded

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j. All alarms, circuits, and electrical circuits and outlets are functional and properly labeled

k. Sites are free of debris and excavations backfilled, compacted, and restored

l. Shelters are free from water leaks or other mechanical issues

m. First aid kits and eye wash stations are installed, if applicable and provided

n. Fire extinguishers installed, if provided

16.3.1 Communication Site Tests

A. Any Contractor-provided equipment not meeting the requirements of this RFP included anywhere in this document, shall be immediately repaired or replaced by the Contractor.

B. The Contractor shall perform and the County shall observe the following tests that shall be performed on the appropriate equipment or structure.

C. These tests shall include, but not be limited to:

a. Earth ground resistance testing using triangulation method and approved test equipment

b. Generator testing under full load

c. Transfer switch operation to demonstrate loss of commercial power, operation of generator unit, and restoration of commercial power

d. Proper operation of UPS systems

e. Proper operation of site alarms, if applicable

f. Proper primary and secondary SPD devices properly installed, bonded, and alarmed

g. Power distribution panel circuit verifications and labeling

h. Proper installation of all lighting (building and tower) and associated switches and controls

i. Proper installation and operation of all timers, thermostats, and HVAC systems including cycling of units

j. Proper installation of fire detectors and fire extinguishers

16.3.2 Earth Ground System Resistance Test

A. The Contractor shall develop and furnish to the County in their proposal their electrical grounding system with plan drawings that depict their recommended grounding system including test wells.

B. The Contractor shall measure the new communication site ground system using a ground resistance test instrument prior to connection to any existing site grounds, the tower

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structure, fencing and utility service, and provide a detailed written report of the results to the County that also depicts the measurement at the specific location.

C. The report shall include details of the instrumentation (model, serial and date of last calibration) and local conditions (wet, dry, temp. etc.)

D. If local soil conditions do not allow the required ground resistance to be achieved by the grounding system requirements of this RFP, the Contractor shall notify the County in writing and discuss possible enhancements to achieve the required ground resistance.

16.3.3 Generator System Testing

A. Factory-trained representative(s) of the engine-generator set manufacturer shall start the generator and check the complete installation for operational compliance.

B. The Contractor shall provide the engine lubrication oil, as recommended by the manufacturer for operation under environmental conditions specified.

C. Upon completion of the initial start-up and system checkout, and in the presence of a County representative, the Contractor shall perform a load bank test of the generator system under full rated load for a period of at least one (1) hour to demonstrate the full rated load carrying capability, and the voltage and frequency stability, to the County.

D. The Contractor shall provide written certification attesting to proper installation and operation.

E. The Contractor shall provide three (3) hard copies and one (1) soft copy of the test results to the County.

16.3.4 DC Power Systems

A. The Contractor, in the presence of the County representative, shall perform testing on all DC power systems provided by the Contractor.

B. UPS systems may consist of a combination of DC power plants that are the primary power source at a site, conventional UPS systems providing 120/240 VAC output from a dedicated battery power source, and UPS systems providing 120/240 VAC output from power inverters that derive their power from the site's DC power plant.

C. Testing of these systems shall include but not be limited to:

a. Initial startup testing by the manufacturer representative

b. Normal operation

c. Simulated power outage to switch to generator power

d. Battery/UPS only operation at rated load for the required run times

e. Return to normal operation from the conditions above, battery charging current

f. Maintenance bypass

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g. Self-tests/diagnostic programming

16.4 Equipment Specification Testing and Antenna System Sweeps

A. Following equipment installation and optimization, the Contractor shall perform the following tests for each piece of equipment including any modified and/or relocated existing equipment.

B. A representative of the County shall witness these tests and the Contractor shall provide documentation of the test results to the County.

C. The Contractor shall adjust, repair or replace any Contractor-provided equipment not meeting their manufacturer's specifications or the requirements of this RFP at no additional cost to the County.

D. At a minimum, the Contractor shall perform the following tests:

a. Base stations in FDMA mode

i. Forward and reflected power at transmitter output

ii. Forward and reflected power at combiner output

iii. Insertion loss of combiner

iv. Receiver BER threshold sensitivity at the chassis

v. Receiver BER threshold sensitivity at the top-of-rack (multicoupler input)

vi. Receiver BER threshold sensitivity through the tower-top-amplifier test port in the presence of noise

b. Receiver multicoupler gain/loss.

c. Voting comparator, if applicable.

i. Operational tests to be conducted to verify end-to-end functioning of each channel of each comparator

d. Antenna systems and transmission line tests.

i. The Contractor shall perform Time Domain Reflectometry (TDR) and Return Loss testing for all LMR infrastructure transmit and receive system transmission lines and waveguides

ii. All infrastructure site antennas and transmission lines shall be tested from the interior of the equipment shelters at the input connector of the surge suppression device on each transmission line

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iii. This method of measurement shall indicate the Return Loss and any impedance irregularities in the transmission line/waveguide/antenna system

iv. Return Loss on any transmission line or waveguide shall not exceed 17.0 dB

e. RF control stations if applicable.

i. Forward and reflected power at transmitter output

ii. Proper programming of talk groups/channels, features and functions

f. Mobile radios if applicable.

i. Forward and reflected power at transmitter output

ii. Proper programming of talk groups/channels, features and functions

g. Portable radios if applicable.

i. Proper programming of talk groups/channels, features and functions

ii. Proper battery life in 10-10-80 duty cycle testing including proper operation of the radio's low battery indicator

16.5 Microwave System Testing and Verification

A. The Contractor shall furnish a microwave network acceptance test plan (ATP) for County review and approval at least thirty (30) days prior to the commencement of acceptance testing.

B. The ATP shall be provided with step-by-step instructions for every test listed below, and shall be pre-populated with the expected values for each test.

C. The Contractor shall perform and a County representative shall witness the following equipment installation and system optimization for the microwave subsystem.

D. These tests shall include, but not be limited to:

a. Microwave Radio

b. Visual mechanical inspection

c. Compliance with FCC Rules and Regulations including:

i. Transmitter power output

ii. Transmitter frequency

iii. Emission bandwidth

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iv. Antenna height

v. FCC licensing for microwave system

d. Net path loss shall be measured and recorded for each path

e. Received carrier power for each end of each path

f. Calculation of flat fade margin

g. Receiver threshold sensitivity for 10-6 BER

h. Transmitter fade and receiver fade margin verification tests

i. Adaptive modulation steps

j. Switches and indicators

k. Meter readings

l. Simulated local failures to demonstrate MHSB and loop switching

m. Antenna system VSWR/return loss across the frequency band of operation

E. Unless otherwise specified, the allowable threshold for the received signal level and the fade margin is +/- 2 dB to the extent that the path maintains the required minimum annual one-way, per-path availability of 99.999% or better for 10-6 BER.

F. Microwave Network Monitoring and Control System

a. RTU alarm monitoring points shall be tested using local display

b. Verify reporting of alarm remote terminals to workstation terminals. Verify performance of controls to remote terminals

c. Master terminal station shall be verified for proper programming, redundant switching, reporting, and report generation

d. Workstation terminals shall be demonstrated for proper operation and presentation of graphics and textual displays

G. The Contractor shall provide documentation of the test results in both hard copy and electronic PDF format on a flash drive.

H. The Contractor shall adjust, repair, or replace any equipment not meeting the requirements of this RFP without additional cost to the County.

16.6 800 MHz Radio Coverage Acceptance Testing

A. The County's acceptance of the radio coverage of the system shall be based upon the successful passage of the Coverage Acceptance Test Plan (CATP).

B. A final detailed CATP shall be provided to the County a minimum of sixty (60) days prior to commencement of the CATP.

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C. The Coverage Acceptance Tests shall not begin until the system has been fully optimized and the infrastructure optimization and tests have been successfully completed.

D. The Contractor shall submit the documentation of both the infrastructure and coverage test results to the County for review following successful completion of the coverage tests.

E. The Coverage Acceptance Tests shall only take place when full foliage conditions exist and rain shall not delay the scheduled testing.

F. Prior to initiation of the coverage testing process, the Contractor shall provide the County with written certification that the system has been properly installed and fully optimized so that CATP testing may begin.

G. The proposed schedule shall allow at least two (2) weeks for the County to review and approve the final test documentation after all testing has been completed.

16.6.1 CATP Requirements and Test Plan

A. The Contractor shall provide a draft version of the CATP in their proposal and the CATP shall reflect the proposed system design.

B. The CATP shall include at a minimum, the following items:

a. A schedule of the tasks and activities

b. An explanation and description of the methodology explaining how the test will be conducted

c. An explanation of how the results shall be tabulated and documented

d. An explanation of why the methodology of data gathering and the subsequent presentation of the results to the County shall "prove" that the coverage requirements of this RFP have been met

e. The Contractor’s expectation of the required County personnel, time commitments, and vehicle resources needed for the testing

f. A list of mobile and portable radio equipment required for the testing

C. The CATP shall consist of the following:

a. Automated inbound and outbound BER tests for P25 Phase 1 and 2

b. Automated outbound signal level measurements for informational purposes

c. Voice quality testing (DAQ) for informational purposes

D. The coverage acceptance tests shall be performed in all accessible areas of Volusia County and within the designated urban area polygons.

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E. The Contractor shall clearly show the calculations and assumptions used for compliance with coverage requirements specified in this RFP and the calculations shall be subject to County approval and review.

F. Once radio coverage testing has been initiated, system modifications such as replacement or reorientation of base station antennas or other factors that may influence radio coverage including software-roaming parameters, shall not be made without the County's approval.

G. Modifications affecting radio coverage will require that the radio coverage test be restarted from the beginning at no cost to the County.

16.6.2 CATP Pass/Fail Criteria

A. The CATP inbound and outbound automated BER tests shall be deemed to have passed if the number of test grids passing is divided by the total number of test grids and this percentage is equal to or greater than the contractual SAR percentage as proposed by the Contractor and agreed to by the County.

16.6.3 Automated BER and Informational Receive Signal Level Testing

A. The Contractor shall perform automated BER and informational RSL measurement tests for the EVENT system operating with Phase 1 and 2 modulation.

B. The test data shall be statistically significant for the required confidence level.

C. The automated tests shall incorporate critical time constants for communications system radio coverage testing.

D. A method of correlating the test location with the automated BER and RSL measurements, such as a GPS receiver, shall be employed to assist with analysis of the test data.

E. The test instrumentation shall be capable of operation in a vehicle for outbound tests.

F. A test route shall be developed by the Contractor and approved by the County.

G. Continuous data shall be recorded throughout the test route.

H. Transportation shall be provided by the County to any test locations not generally accessible by car if required.

I. The automated BER test for the Simulcast systems shall consider the effects of delay spread or Time Delay Interference (TDI) on the outbound test channel.

16.6.4 Attenuated Radio Configurations

A. The County will utilize new and existing mobile and portable radio equipment on the new P25 system.

B. The County understands and does not object if the Contractor utilizes their preferred mobile or portable radio equipment for the automated tests.

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C. To ensure consistency among the Contractor system designs, the County has specified the outdoor signal level on the street in Table 9. The baseline technical parameters in Table 9 for the user equipment shall be used for the performance of the CATP.

D. A modified (attenuated) portable radio will be used to simulate a portable radio operating on the hip outdoors and within buildings.

E. This process involves the attenuation of a portable radio to "normalize" the roof-mounted mobile 1/4-wave magnetic-mount test antenna and to simulate the performance degradation that would be encountered while operating the portable radio on the hip outdoors and within buildings having a specific loss characteristic.

F. The Contractor shall provide the 1/4-wave magnetic-mount test antennas for unobstructed placement on the vehicle roof used for the testing.

G. The Contractor shall install the appropriate signal attenuators to the portable test radio to emulate the following:

   a. The body losses experienced when the portable radio is worn on the hip which is specified by the County to be 10.3 dB for a 1/2-wave whip antenna

   b. The antenna adjustment of 3.0 dB for the 1/4-wave magnetic-mount test antenna when compared to a half-wave dipole

   c. The antenna height adjustment of 1.3 dB for a 1/4-wave magnetic-mount test antenna installed at 5.0-foot AGL

   d. The specified signal level margins for building loss in dB

H. The adjustment to the level of attenuation that may be required to "normalize" the receiver sensitivity specifications of the Contractor-provided test radio to match the -119.0 dBm at 5% BER chassis receiver sensitivity specification stated in this RFP.

I. The Contractor shall measure and demonstrate to County personnel, the 5% BER chassis receiver sensitivity threshold of their test radios and their recommended adjustments to normalize their test radio receiver to -119 dBm at 5% BER.

J. The Contractor shall provide a thorough description, including block diagrams and attenuation levels of the proposed test setup, and the County shall approve the Contractors final plan for attenuation.

K. The Contractor shall verify and the County shall witness that each portable radio to be used for the coverage test has been bench-tested and found to be operating within the manufacturer's specifications, and that the appropriate amount of attenuation is in place to "normalize" the Contractor-provided test radio.

L. The Contractor shall certify and the County shall witness that the testing methodology and modifications to the radios provide a loss equal to that of a portable radio operating in compliance with the requirements of this RFP.

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16.6.5 Test Equipment Records

A. The Contractor shall keep thorough records during the equipment testing process and shall provide a permanent record of the testing results to the County and its technical representative prior to the initiation of the coverage testing process.

B. The Contractor shall record the make, model, serial number, and calibration date for all radio test equipment used during the equipment testing process.

C. The Contractor shall record and track the make, model, and serial numbers of all radio equipment used during the radio coverage testing process.

D. This documentation shall include the versions of software and settings programmed into each of the radios.

16.6.6 Test Grids and Locations

A. The Volusia County jurisdictional area shall each be divided into grid squares with sizes as determined by the methodology defined in the latest version of TSB-88 to yield a 99% confidence level and 2% confidence interval in the resulting test data.

B. Each urban area polygon shall each be divided into grid squares with sizes as determined by the methodology defined in the latest version of TSB-88 to yield a 99% confidence level and 2% confidence interval in the resulting test data.

C. An automated BER and informational signal level test shall be performed in each grid where a portion of that grid is within the County boundary.

D. Testing points within each grid shall be chosen per the TSB88 defined methodology and the test point shall be randomly chosen as to not be biased by either party and, to the extent possible, should not cluster adjacent grid test points together.

16.6.7 Coverage Test Results and Report

A. For each grid tested, the outbound and inbound automated BER tests shall be evaluated together in that a failure of the outbound automated BER test or failure of the inbound automated BER test for a particular grid constitutes a failure of the grid.

B. For grids in which only one test measurement (inbound or outbound) was successfully completed, the Contractor is required to re-test grids, wherever possible, for the purpose of successfully completing both inbound and outbound BER test measurements. If it is not possible to collect both inbound and outbound BER measurements, the grid will be eliminated from the pass/fail calculation if the successfully completed test was a PASS, and will be considered a FAIL if the successfully completed test was a FAIL. The Contractor shall generate a CATP test report to summarize the test results and to recommend any corrective steps that may be required to fix any failed test.

C. The Contractor's CATP report shall include the following information for each test:

a. Description of the test methodology and the final results

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b. Test location (map grid, address, or intersection for non-moving tests, etc.)

c. The test results for the automated BER test by grids shall be displayed on 11-inch x 17-inch maps with the grids color keyed to indicate the test results; red indicates a grid failure, green indicates a passed grid, yellow indicates a grid that is not accessible or tested

d. Automated BER detailed test results by grid

e. Informational RSL measurements by grid

f. Paper and soft copies in PDF format of the data record collection work sheets

g. Date and time stamps on the test reports

h. Test conditions (type of radio, attenuation levels, antennas, equipment serial numbers, etc.)

i. The names of the test team participants

j. The raw drive test data shall be provided to the County for importing into coverage modeling software provided by the Contractor to the County.

D. The CATP test report documentation shall be presented to the County for review following the successful completion of the coverage tests.

E. The County shall have a minimum of twenty-one (21) days to review and approve the test documentation after all testing has been completed.

F. Successful completion of the CATP test shall occur when the Contractor has demonstrated to the satisfaction of the County that they have met their minimum SAR coverage commitment and the contractual requirements of the contract.

16.6.8 Coverage Test Failures

A. The CATP shall be considered to have failed if any of the following conditions are demonstrated:

a. Unauthorized changes to the system or equipment under test

b. The Contractor has failed to demonstrate that they have met their minimum SAR coverage commitment and the contractual requirements for outdoor radio coverage within the County jurisdictional area

B. If the system fails the coverage test as described above, then the Contractor shall take corrective action to resolve the coverage deficiencies and repeat the coverage tests.

C. The costs of the corrective actions shall be borne by the Contractor.

D. The costs associated with the repetition of the CATP shall be borne by the Contractor inclusive of the participation by the County's technical representative.

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16.6.9 Remedies for Coverage Failure

A. The Contractor shall bear the full responsibility and costs to mitigate the failure to demonstrate compliance with the contractual coverage commitment.

B. Remedies for failure of the CATP shall address the entire problem area and not be limited to correcting a portion of the failed area.

C. Remedies may not degrade areas of coverage that were previously accepted.

D. A retest of the CATP shall be conducted in any area (previously failed or not) potentially affected by the remedy in order to verify that the composite coverage is maintained.

E. All remedies must meet the performance, feature-functionality, and reliability requirements of this RFP.

F. At a minimum, these remedies may include the following:

   a. Modifications to the design of the system including the antenna and transmitter configurations which shall comply with any regulatory and zoning restrictions of Volusia County

   b. The complete inspection and testing of the transmit/receive antenna systems to determine that it meets all manufacturer and design specifications and was properly installed including antenna placement and orientation

16.6.10 In-Building Testing of Critical Buildings

A. Radio coverage testing of the designated Critical Buildings is listed in Appendix F: Critical Buildings

B. Appendix F: Critical Buildings testing shall be performed to verify radio coverage within the buildings, for informational purposes only, during the Coverage Acceptance Test Plan and the County may decide at a later date and at their expense, to implement solutions to mitigate coverage within buildings where coverage deficiencies are documented.

C. The Contractor shall document and report to the County any areas within these buildings where DAQ3.4 voice quality radio coverage is not available including classrooms, administration offices, elevators, vaults, hospital emergency rooms, and such.

D. A minimum of 20 locations within a building is required to establish 95% confidence within that building and locations tested from within a building requires 95% of the locations tested to PASS for the building to be considered as a PASS.

E. The County may elect not to test all planned test locations within a building, and locations that are not tested within the building for the convenience of the County shall be recorded as a PASS in the percentage calculation.

   a. This will be annotated in the data record and in the final CATP test report

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F. Should a building fail to demonstrate DAQ3.4 voice quality communications in any test location, then that location and building shall be identified as “not covered” and the Contractor shall note the failed location.

16.7 800 MHz FSA Radio Coverage Acceptance Testing

A. The County’s acceptance of the radio coverage of the system shall be based upon the successful passage of the Coverage Acceptance Test Plan (CATP).

B. The Coverage Acceptance Tests shall not begin until the system has been fully optimized and the infrastructure optimization and tests have been successfully completed.

C. The Contractor shall submit the documentation of both the infrastructure and coverage test results to the County for review following successful completion of the coverage tests.

D. The Coverage Acceptance Tests shall only take place when full foliage conditions exist and rain shall not delay the scheduled testing.

E. Prior to initiation of the coverage testing process, the Contractor shall provide the County with written certification that the system has been properly installed and fully optimized so that CATP testing may begin.

F. The proposed schedule shall allow at least two (2) weeks for the County to review and approve the final test documentation after all testing has been completed.

16.7.1 800 MHz FSA CATP Requirements and Test Plan

A. The Contractor shall provide a detailed CATP in their proposal and the CATP shall reflect the proposed system design and include at a minimum, the following items:

   a. A schedule of the tasks and activities

   b. An explanation and description of the methodology explaining how the test will be conducted

   c. An explanation of how the results shall be tabulated and documented

   d. An explanation of why the methodology of data gathering and the subsequent presentation of the results to the County shall "prove" that the coverage requirements of this RFP have been met

   e. The Contractor’s expectation including time commitments, of the required County personnel and vehicle resources needed for the testing

   f. A list of mobile radio equipment required for the testing

B. The Coverage Acceptance Test Plan shall consist of the following:

   a. Automated outbound signal level measurements

   b. Subjective voice quality testing

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C. The coverage acceptance tests shall be performed in all accessible areas of Volusia County.

D. The Contractor shall clearly show the calculations and assumptions used for compliance with coverage requirements specified in this RFP and the calculations shall be subject to County approval and review.

E. Once radio coverage testing has been initiated, system modifications such as replacement or reorientation of base station antennas or other factors that may influence radio coverage including software-roaming parameters, shall not be made without the County's approval.

F. Modifications affecting radio coverage will require that the radio coverage test be restarted from the beginning at no cost to the County.

16.7.2 CATP Pass/Fail Criteria

A. The CATP automated outbound RSL tests and the subjective voice quality test shall be deemed to have passed if the number of test grids passing is divided by the total number of test grids and this percentage is equal to or greater than the contractual SAR percentage as proposed by the Contractor and agreed to by the County.

16.7.3 Automated Receive Signal Level Testing

A. The Contractor shall perform outbound automated RSL measurement tests.

B. The test data shall be statistically significant for the required confidence level.

C. The automated tests shall incorporate critical time constants for communications system radio coverage testing.

D. A method of correlating the test location with the automated RSL measurements, such as a GPS receiver, shall be employed to assist with analysis of the test data.

E. The test instrumentation shall be capable of operation in a vehicle for outbound tests.

F. A test route shall be developed by the Contractor and approved by the County.

G. Continuous data shall be recorded throughout the test route.

H. Transportation shall be provided by the County to any test locations not generally accessible by car if required.

I. The raw drive test data shall be provided to the County for importing into the coverage modeling software provided to the County by the Contractor.

16.7.4 Subjective Voice Quality Testing

A. The Contractor shall perform a Subjective Voice Quality test for outbound transmissions to field test units from dispatch.

B. A method of correlating the test location of the Subjective Voice Quality test such as a GPS receiver, shall be employed to assist with analysis of the test data.

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C. The test evaluation team(s) shall consist of no less than two County representatives and one Contractor representative.

D. Each evaluation team shall score each test call for outbound voice transmissions as PASS or FAIL based on a minimum DAQ 3.4 voice quality.

E. The dispatcher must successfully transmit test messages in order to complete the test.

F. If the voice quality of the test messages meet or exceed the test criteria, as agreed by a majority of the test evaluation team, the grid is considered to have passed.

G. If the test messages do not meet the test criteria, as agreed by a majority of the test evaluation team, the grid is considered to have failed.

H. If a test call in a grid fails, a single "retry" will be permitted and the user may move up to 5-feet and repeat the test.

I. All retries shall be recorded on the scoring template and no more than 5% retries will be allowed for passage of this portion of the coverage test.

J. If the discrepancy cannot be rectified, then that grid will be set aside for discussion and evaluation.

K. The test message shall consist of a short message representative of typical public safety call durations and shall include the identification of the location being tested.

L. The suggested test message is "DISPATCH TO TEST TEAM #ONE, TESTING GRID YYY, LOCATION NUMBER XXX", followed by a short sentence or two, possibly from a newspaper or a Harvard Phrase, of approximately 8 to 20 words total.

M. To ensure that the message is understood, the test message may be repeated by the dispatcher.

N. If a member of the test team exhibits bias, they may be replaced.

16.7.5 Test Equipment Records

A. The Contractor shall keep thorough records during the equipment testing process and shall provide a permanent record of the testing results to the County and its technical representative prior to the initiation of the coverage testing process.

B. The Contractor shall record the make, model, serial number, and calibration date for all radio test equipment used during the equipment testing process.

C. The Contractor shall record and track the make, model, and serial numbers of all radio equipment used during the radio coverage testing process.

D. This documentation shall include the versions of software and settings programmed into each of the radios.

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16.7.6 Test Grids and Locations

A. The Volusia County jurisdictional area shall each be divided into grid squares with sizes as determined by the methodology defined in the latest version of TSB-88 to yield a 99% confidence level and 2% confidence interval in the resulting test data.

B. Testing points within each grid shall be chosen per the TSB88 defined methodology and the test point shall be randomly chosen as to not be biased by either party and, to the extent possible, should not cluster adjacent grid test points together.

16.7.7 Coverage Test Results and Report

A. For the automated RSL test, a test location shall be considered to pass only if the automated RSL measurements are less than or equal to the maximum agreed upon thresholds for PASS/FAIL criteria for each modulation type tested.

B. The Contractor shall generate a CATP test report to summarize the test results and to recommend any corrective steps that may be required to fix any failed test.

C. The Contractor's CATP report shall include the following information for each test:

   a. Description of the test methodology and the final results

   b. Test location (map grid, address, or intersection for non-moving tests, etc.)

   c. The test results for the automated RSL test by grids shall be displayed on 11-inch x 17-inch maps with the grids color keyed to indicate the test results; red indicates a grid failure, green indicates a passed grid, yellow indicates a grid that is not accessible or tested

   d. Automated RSL detailed test results by grid

   e. Paper and soft copies in PDF format of the data record collection work sheets

   f. Date and time stamps on the test reports

   g. Test conditions (type of radio, attenuation levels, antennas, equipment serial numbers, etc.)

   h. The names of the test team participants

   i. Raw data is to be provided to the County for importing into coverage modeling software provided by the Contractor.

D. The CATP test report documentation shall be presented to the County for review following the successful completion of the coverage tests.

E. The County shall have a minimum of twenty-one (21) days to review and approve the test documentation after all testing has been completed.

F. Successful completion of the CATP test shall occur when the Contractor has demonstrated that they have met their minimum SAR coverage commitment and the contractual requirements of the contract.

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16.7.8 Coverage Test Failures

A. The CATP shall be considered to have failed if any of the following conditions are demonstrated:

   a. Unauthorized changes to the system or equipment under test

   b. The Contractor has failed to demonstrate that they have met their minimum SAR coverage commitment and the contractual requirements for outdoor radio coverage within the County jurisdictional area

B. If the system fails the coverage test as described above, then the Contractor shall take corrective action to resolve the coverage deficiencies and repeat the coverage tests.

C. The costs of the corrective actions shall be borne by the Contractor.

D. The costs associated with the repetition of the CATP shall be borne by the Contractor inclusive of the participation by the County's technical representative.

16.7.9 Remedies for Coverage Failure

A. The Contractor shall bear the full responsibility and costs to mitigate the failure to demonstrate compliance with the contractual coverage commitment.

B. Remedies for failure of the CATP shall address the entire problem area and not be limited to correcting a portion of the failed area.

C. Remedies may not degrade areas of coverage that were previously accepted.

D. A retest of the CATP shall be conducted in any area (previously failed or not) potentially affected by the remedy in order to verify that the composite coverage is maintained.

E. All remedies must meet the performance, feature-functionality, and reliability requirements of this RFP.

F. At a minimum, these remedies may include the following:

   a. Modifications to the design of the system including the antenna and transmitter configurations which shall comply with any regulatory and zoning restrictions of Volusia County

   b. The complete inspection and testing of the transmit/receive antenna systems to determine that it meets all manufacturer and design specifications and was properly installed including antenna placement and orientation

16.8 800 MHz RMACS Radio Coverage Acceptance Testing

A. The County's acceptance of the radio coverage of the system shall be based upon the successful passage of the Coverage Acceptance Test Plan (CATP).

B. The Coverage Acceptance Tests shall not begin until the system has been fully optimized and the infrastructure optimization and tests have been successfully completed.

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C. The Contractor shall submit the documentation of both the infrastructure and coverage test results to the County for review following successful completion of the coverage tests.

D. The Coverage Acceptance Tests shall only take place when full foliage conditions exist and rain shall not delay the scheduled testing.

E. Prior to initiation of the coverage testing process, the Contractor shall provide the County with written certification that the system has been properly installed and fully optimized so that CATP testing may begin.

F. The proposed schedule shall allow at least two (2) weeks for the County to review and approve the final test documentation after all testing has been completed.

16.8.1 800 MHz RMACS CATP Requirements and Test Plan

A. The Contractor shall provide a detailed CATP in their proposal and the CATP shall reflect the proposed system design and include at a minimum, the following items:

a. A schedule of the tasks and activities

b. An explanation and description of the methodology explaining how the test will be conducted

c. An explanation of how the results shall be tabulated and documented

d. An explanation of why the methodology of data gathering and the subsequent presentation of the results to the County shall "prove" that the coverage requirements of this RFP have been met

e. The Contractor’s expectation including time commitments, of the required County personnel and vehicle resources needed for the testing

f. A list of mobile radio equipment required for the testing

B. The Coverage Acceptance Test Plan shall consist of the following.

a. Automated outbound signal level measurements

b. Subjective voice quality testing

C. The coverage acceptance tests shall be performed in all accessible areas of Volusia County.

D. The Contractor shall clearly show the calculations and assumptions used for compliance with coverage requirements specified in this RFP and the calculations shall be subject to County approval and review.

E. Once radio coverage testing has been initiated, system modifications such as replacement or reorientation of base station antennas or other factors that may influence radio coverage including software-roaming parameters, shall not be made without the County’s approval.

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F. Modifications affecting radio coverage will require that the radio coverage test be restarted from the beginning at no cost to the County.

16.8.2 CATP Pass/Fail Criteria

A. The CATP automated outbound RSL tests and the subjective voice quality test shall be deemed to have passed if the number of test grids passing is divided by the total number of test grids and this percentage is equal to or greater than the contractual SAR percentage as proposed by the Contractor and agreed to by the County.

16.8.3 Automated Receive Signal Level Testing

A. The Contractor shall perform outbound automated RSL measurement tests.

B. The test data shall be statistically significant for the required confidence level.

C. The automated tests shall incorporate critical time constants for communications system radio coverage testing.

D. A method of correlating the test location with the automated RSL measurements, such as a GPS receiver, shall be employed to assist with analysis of the test data.

E. The test instrumentation shall be capable of operation in a vehicle for outbound tests.

F. A test route shall be developed by the Contractor and approved by the County.

G. Continuous data shall be recorded throughout the test route.

H. Transportation shall be provided by the County to any test locations not generally accessible by car if required.

I. The raw drive test data shall be provided to the County for importing into the coverage modeling software provided to the County by the Contractor.

16.8.4 Subjective Voice Quality Testing

A. The Contractor shall perform a Subjective Voice Quality test for inbound and outbound transmissions to field test units from dispatch.

B. A method of correlating the test location of the Subjective Voice Quality test such as a GPS receiver, shall be employed to assist with analysis of the test data.

C. The test evaluation team(s) shall consist of no less than two County representatives and one Contractor representative.

D. Each evaluation team and dispatcher shall score each test call for inbound and outbound voice transmissions as PASS or FAIL based on a minimum DAQ 3.0 voice quality.

E. Both the dispatcher and the portable radio user must successfully transmit and receive test messages in order to complete the test.

F. If the voice quality of both test messages meet or exceed the test criteria, as agreed to by a majority of the test evaluation team, the grid is considered to have passed.

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G. If the voice quality of either test messages does not meet the test criteria, as agreed to by a majority of the test evaluation team, the grid is considered to have failed.

H. If a test call in a grid fails, a single "retry" will be permitted and the user may move up to 5-feet and repeat the test.

I. All retries shall be recorded on the scoring template and no more than 5% retries will be allowed for passage of this portion of the coverage test.

J. If the discrepancy cannot be rectified, then that grid will be set aside for discussion and evaluation.

K. The test message shall consist of a short message representative of typical public safety call durations and shall include the identification of the location being tested.

L. The suggested test message is "TEST TEAM #ONE, TESTING BUILDING YYY, LOCATION NUMBER XXX", followed by a short sentence or two, possibly from a newspaper or a Harvard Phrase, of approximately 8 to 20 words total.

M. To ensure that the message is understood, the test message may be repeated by the dispatcher or portable radio user who will then make a similar test call.

N. The suggested response test message is "TEST TEAM #ONE, CONFIRMING BUILDING YYY, LOCATION NUMBER XXX", followed by a short sentence or two possibly, from a newspaper or a Harvard Phrase, of approximately 8 to 20 words total.

O. If a member of the test team exhibits bias, they may be replaced.

16.8.5 Test Equipment Records

A. The Contractor shall keep thorough records during the equipment testing process and shall provide a permanent record of the testing results to the County and its technical representative prior to the initiation of the coverage testing process.

B. The Contractor shall record the make, model, serial number, and calibration date for all radio test equipment used during the equipment testing process.

C. The Contractor shall record and track the make, model, and serial numbers of all radio equipment used during the radio coverage testing process.

D. This documentation shall include the versions of software and settings programmed into each of the radios.

16.8.6 Test Grids and Locations

A. The Volusia County jurisdictional area shall each be divided into grid squares with sizes as determined by the methodology defined in the latest version of TSB-88 to yield a 99% confidence level and 2% confidence interval in the resulting test data.

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B. Each urban area polygon shall each be divided into grid squares with sizes as determined by the methodology defined in the latest version of TSB-88 to yield a 99% confidence level and 2% confidence interval in the resulting test data.

C. Testing points within each grid shall be chosen per the TSB88 defined methodology and the test point shall be randomly chosen as to not be biased by either party and, to the extent possible, should not cluster adjacent grid test points together.

16.8.7 Coverage Test Results and Report

A. For the automated RSL test, a test location shall be considered to pass only if the automated RSL measurements are less than or equal to the maximum agreed upon thresholds for PASS/FAIL criteria for each modulation type tested.

B. The Contractor shall generate a CATP test report to summarize the test results and to recommend any corrective steps that may be required to fix any failed test.

C. The Contractor's CATP report shall include the following information for each test:

a. Description of the test methodology and the final results

b. Test location (map grid, address, or intersection for non-moving tests, etc.)

c. The test results for the automated RSL test by grids shall be displayed on 11-inch x 17-inch maps with the grids color keyed to indicate the test results; red indicates a grid failure, green indicates a passed grid, yellow indicates a grid that is not accessible or tested

d. Automated RSL detailed test results by grid

e. Paper and soft copies in PDF format of the data record collection work sheets

f. Date and time stamps on the test reports

g. Test conditions (type of radio, attenuation levels, antennas, equipment serial numbers, etc.)

h. The names of the test team participants

i. Raw data is to be provided to the County for importing into coverage modeling software provided by the Contractor.

D. The CATP test report documentation shall be presented to the County for review following the successful completion of the coverage tests.

E. The County shall have a minimum of twenty-one (21) days to review and approve the test documentation after all testing has been completed.

F. Successful completion of the CATP test shall occur when the Contractor has demonstrated that they have met their minimum SAR coverage commitment and the contractual requirements of the contract.

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16.8.8 Coverage Test Failures

A. The CATP shall be considered to have failed if any of the following conditions are demonstrated:

   a. Unauthorized changes to the system or equipment under test

   b. The Contractor has failed to demonstrate that they have met their minimum SAR coverage commitment and the contractual requirements for outdoor radio coverage within the County jurisdictional area

B. If the system fails the coverage test as described above, then the Contractor shall take corrective action to resolve the coverage deficiencies and repeat the coverage tests.

C. The costs of the corrective actions shall be borne by the Contractor.

D. The costs associated with the repetition of the CATP shall be borne by the Contractor inclusive of the participation by the County's technical representative.

16.8.9 Remedies for Coverage Failure

A. The Contractor shall bear the full responsibility and costs to mitigate the failure to demonstrate compliance with the contractual coverage commitment.

B. Remedies for failure of the CATP shall address the entire problem area and not be limited to correcting a portion of the failed area.

C. Remedies may not degrade areas of coverage that were previously accepted.

D. A retest of the CATP shall be conducted in any area (previously failed or not) potentially affected by the remedy in order to verify that the composite coverage is maintained.

E. All remedies must meet the performance, feature-functionality, and reliability requirements of this RFP.

F. At a minimum, these remedies may include the following:

   a. Modifications to the design of the system including the antenna and transmitter configurations which shall comply with any regulatory and zoning restrictions of Volusia County

   b. The complete inspection and testing of the transmit/receive antenna systems to determine that it meets all manufacturer and design specifications and was properly installed including antenna placement and orientation

16.9 VHF Paging and VHF FSA Radio Coverage Acceptance Testing

A. The County's acceptance of the radio coverage of the system shall be based upon the successful passage of the Coverage Acceptance Test Plan (CATP).

B. The Coverage Acceptance Tests shall not begin until the system has been fully optimized and the infrastructure optimization and tests have been successfully completed.

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C. The Contractor shall submit the documentation of both the infrastructure and coverage test results to the County for review following successful completion of the coverage tests.

D. The Coverage Acceptance Tests shall only take place when full foliage conditions exist and rain shall not delay the scheduled testing.

E. Prior to initiation of the coverage testing process, the Contractor shall provide the County with written certification that the system has been properly installed and fully optimized so that CATP testing may begin.

F. The proposed schedule shall allow at least two (2) weeks for the County to review and approve the final test documentation after all testing has been completed.

16.9.1 VHF Paging and VHF FSA CATP Requirements and Test Plan

A. The Contractor shall provide a detailed CATP in their proposal and the CATP shall reflect the proposed system design and include at a minimum, the following items:

a. A schedule of the tasks and activities

b. An explanation and description of the methodology explaining how the test will be conducted

c. An explanation of how the results shall be tabulated and documented

d. An explanation of why the methodology of data gathering and the subsequent presentation of the results to the County shall "prove" that the coverage requirements of this RFP have been met

e. The Contractor's expectation including time commitments, of the required County personnel and vehicle resources needed for the testing

f. A list of radio equipment required for the testing

B. The Coverage Acceptance Test Plan shall consist of the following for tone alerting and voice quality testing.

a. Automated outbound receive signal level measurements

b. Subjective voice quality testing for outbound transmissions

C. The coverage acceptance tests shall be performed in all accessible areas of Volusia County.

D. The Contractor shall clearly show the calculations and assumptions used for compliance with coverage requirements specified in this RFP and the calculations shall be subject to County approval and review.

E. Once radio coverage testing has been initiated, system modifications such as replacement or reorientation of base station antennas or other factors that may influence radio

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coverage including software-roaming parameters, shall not be made without the County's approval.

F. Modifications affecting radio coverage will require that the radio coverage test be restarted from the beginning at no cost to the County.

16.9.2 CATP Pass/Fail Criteria

A. The CATP automated outbound RSL tests and the subjective voice quality test shall be deemed to have passed if the number of test grids passing is divided by the total number of test grids and this percentage is equal to or greater than the contractual SAR percentage as proposed by the Contractor and agreed to by the County.

16.9.3 Automated Receive Signal Level Testing

A. The Contractor shall perform outbound automated RSL measurement tests.

B. The test data shall be statistically significant for the required confidence level.

C. The automated tests shall incorporate critical time constants for communications system radio coverage testing.

D. A method of correlating the test location with the automated RSL measurements, such as a GPS receiver, shall be employed to assist with analysis of the test data.

E. The test instrumentation shall be capable of operation in a vehicle for outbound tests.

F. A test route shall be developed by the Contractor and approved by the County.

G. Continuous data shall be recorded throughout the test route.

H. Transportation shall be provided by the County to any test locations not generally accessible by car if required.

16.9.4 Subjective Voice Quality Testing

A. The Contractor shall perform a Subjective Voice Quality test for outbound transmissions to field test units from dispatch.

B. A method of correlating the test location of the Subjective Voice Quality test such as a GPS receiver, shall be employed to assist with analysis of the test data.

C. The test evaluation team(s) shall consist of no less than two County representatives and one Contractor representative.

D. Each evaluation team shall score each test call for outbound voice transmissions as PASS or FAIL based on a minimum DAQ 3.0 voice quality.

E. The dispatcher must successfully transmit and the portable radio user must successfully receive test messages in order to complete the test.

F. If the voice quality of the test messages meet or exceed the test criteria, as agreed by a majority of the test evaluation team, the grid is considered to have passed.

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G. If the test messages do not meet the test criteria, as agreed by a majority of the test evaluation team, the grid is considered to have failed.

H. If a test call in a grid fails, a single "retry" will be permitted and the user may move up to 5-feet and repeat the test.

I. All retries shall be recorded on the scoring template and no more than 5% retries will be allowed for passage of this portion of the coverage test.

J. If the discrepancy cannot be rectified, then that grid will be set aside for discussion and evaluation.

K. The test message shall consist of a short message representative of typical public safety call durations and shall include the identification of the location being tested.

L. The suggested test message is a short sentence or two, possibly from a newspaper or a Harvard Phrase, of approximately 8 to 20 words total.

M. If a member of the test team exhibits bias, they may be replaced.

16.9.5 Attenuated Radio Configurations

A. A modified (attenuated) portable radio may be used to simulate a pager operating on the hip outdoors.

B. This process involves the attenuation of a portable radio to "normalize" the roof-mounted mobile 1/4-wave magnetic-mount test antenna and to simulate the performance degradation that would be encountered while operating the pager on the hip outdoors.

C. The Contractor shall provide the 1/4-wave magnetic-mount test antennas for unobstructed placement on the vehicle roof used for the testing.

D. The Contractor shall install the appropriate signal attenuators to the portable test radio to emulate the following:

   a. The receive signal level at the portable antenna port is -80 dBm

   b. The antenna adjustment of 3.0 dB for the 1/4-wave magnetic-mount test antenna when compared to a half-wave dipole

   c. The antenna height adjustment of 1.3 dB for a 1/4-wave magnetic-mount test antenna installed at 5.0-foot AGL

E. The Contractor shall provide a thorough description, including block diagrams and attenuation levels of the proposed test setup, and the County shall approve the Contractors final plan for attenuation.

F. The Contractor shall verify and the County shall witness that each portable radio to be used for the coverage test has been bench-tested and found to be operating within the manufacturer's specifications, and that the appropriate amount of attenuation is in place to "normalize" the Contractor-provided test radio.

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G. The Contractor shall certify and the County shall witness that the testing methodology and modifications to the radios provide a loss equal to that of a portable radio operating in compliance with the requirements of this RFP.

16.9.6 Test Equipment Records

A. The Contractor shall keep thorough records during the equipment testing process and shall provide a permanent record of the testing results to the County and its technical representative prior to the initiation of the coverage testing process.

B. The Contractor shall record the make, model, serial number, and calibration date for all radio test equipment used during the equipment testing process.

C. The Contractor shall record and track the make, model, and serial numbers of all radio equipment used during the radio coverage testing process.

D. This documentation shall include the versions of software and settings programmed into each of the radios.

16.9.7 Test Grids and Locations

A. The Volusia County jurisdictional area shall each be divided into grid squares with sizes as determined by the methodology defined in the latest version of TSB-88 to yield a 99% confidence level and 2% confidence interval in the resulting test data.

B. Each urban area polygon shall each be divided into grid squares with sizes as determined by the methodology defined in the latest version of TSB-88 to yield a 99% confidence level and 2% confidence interval in the resulting test data.

C. Testing points within each grid shall be chosen per the TSB88 defined methodology and the test point shall be randomly chosen as to not be biased by either party and, to the extent possible, should not cluster adjacent grid test points together.

16.9.8 Coverage Test Results and Report

A. For the automated RSL test, a test location shall be considered to pass only if the automated RSL measurements are less than or equal to the maximum agreed upon thresholds for PASS/FAIL criteria for each modulation type tested.

B. The Contractor shall generate a CATP test report to summarize the test results and to recommend any corrective steps that may be required to fix any failed test.

C. The Contractor's CATP report shall include the following information for each test:

a. Description of the test methodology and the final results

b. Test location (map grid, address, or intersection for non-moving tests, etc.)

c. The test results for the automated RSL test by grids shall be displayed on 11-inch x 17-inch maps with the grids color keyed to indicate the test results; red indicates a

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grid failure, green indicates a passed grid, yellow indicates a grid that is not accessible or tested

d. Automated RSL detailed test results by grid

e. Paper and soft copies in PDF format of the data record collection work sheets

f. Date and time stamps on the test reports

g. Test conditions (type of radio, attenuation levels, antennas, equipment serial numbers, etc.)

h. The names of the test team participants

D. The CATP test report documentation shall be presented to the County for review following the successful completion of the coverage tests.

E. The County shall have a minimum of twenty-one (21) days to review and approve the test documentation after all testing has been completed.

F. Successful completion of the CATP test shall occur when the Contractor has demonstrated that they have met their minimum SAR coverage commitment and the contractual requirements of the contract.

16.9.9 Coverage Test Failures

A. The CATP shall be considered to have failed if any of the following conditions are demonstrated:

a. Unauthorized changes to the system or equipment under test.

b. The Contractor has failed to demonstrate that they have met their minimum SAR coverage commitment and the contractual requirements for radio coverage within the County jurisdictional area.

B. If the system fails the coverage test as described above, then the Contractor shall take corrective action to resolve the coverage deficiencies and repeat the coverage tests.

C. The costs of the corrective actions shall be borne by the Contractor.

D. The costs associated with the repetition of the CATP shall be borne by the Contractor inclusive of the participation by the County's technical representative.

16.9.10 Remedies for Coverage Failure

A. The Contractor shall bear the full responsibility and costs to mitigate the failure to demonstrate compliance with the contractual coverage commitment.

B. Remedies for failure of the CATP shall address the entire problem area and not be limited to correcting a portion of the failed area.

C. Remedies may not degrade areas of coverage that were previously accepted.

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D. A retest of the CATP shall be conducted in any area (previously failed or not) potentially affected by the remedy in order to verify that the composite coverage is maintained.

E. All remedies must meet the performance, feature-functionality, and reliability requirements of this RFP.

F. At a minimum, these remedies may include the following:

   a. Modifications to the design of the system including the antenna and transmitter configurations which shall comply with any regulatory and zoning restrictions of Volusia County

   b. The complete inspection and testing of the transmit/receive antenna systems to determine that it meets all manufacturer and design specifications and was properly installed including antenna placement and orientation

16.10 Bi-Directional Amplifier Tests

A. The Contractor shall bear no responsibility for equipment or services pertaining to BDA systems.

B. The County will perform an in-house evaluation of their known BDA systems to assess their ability to support P25 linear simulcast modulations.

C. The County will do their best to mitigate any issues discovered prior to the testing of buildings containing BDA systems.

16.11 Functional Acceptance Test Plan

A. The Functional Acceptance Test Plan (FATP) shall be performed before all systems' CATP.

B. The Contractor shall provide and define in their proposal a general Functional Acceptance Test Plan.

C. The Contractor shall provide thirty (30) days prior to commencement of testing a detailed "step-by-step" Functional Acceptance Test Plan that includes a test procedure and check list specific for their system that exercises and demonstrates each and all of the required and proposed features, functions and capabilities including those of the user equipment and dispatch consoles.

16.12 Communications System Cutover Plan

A. The Contractor shall include in their proposal a preliminary cutover plan describing the transition of users to the new communications system.

B. This plan shall include a chronological chart (Gantt-type format) with the tasks to be accomplished and the time for achievement of each task shown.

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C. The Contractor shall provide a phased cutover plan that will ensure that no current dispatch function is negatively impacted or impaired during system cutover to the new communications system.

D. The Contractor shall provide an updated detailed cutover plan for each user agency sixty (60) days prior to equipment installation.

E. The plan shall be approved by the County before commencement of installation.

F. The detailed cutover plan shall include a narrative description of the sequential cutover steps and a clear delineation of which tasks are the responsibility of the Contractor and which tasks are the responsibility of the County.

G. The current communication systems shall remain operational during the cutover phase and after cutover for a period to be determined by the County.

16.13 60-Day Performance Period

A. The Performance Period shall consist of a 60-Day Performance Period or burn-in period, and shall be scheduled to begin upon written notification to the County that the system is ready for the commencement of the 60-Day Performance Period, and that any required training has been successfully completed.

B. The County will specify a small number of use agencies to be part of the 60-Day Performance Period. The 60-Day Performance Period shall not constitute beneficial use or Final System Acceptance by the County.

C. The system will be observed during this period to ensure that it performs as specified.

D. Any failure to perform as specified in the Contract will be remedied before the infrastructure is accepted.

E. If the system performs as specified for sixty (60) consecutive days, and the remainder of the acceptance tests and punch-listed items have been resolved, then the system infrastructure will be considered for acceptance.

F. Successful operation is defined as the absence of any Major System Failure of equipment or loss of system functionality.

G. Any Major System Failure that occurs may reset the 60-Day Performance Period clock at the discretion of the County.

H. The County's decision to reset the 60-Day Performance Period will be based in part, upon the source and the severity of the failure as well as the operational impact suffered by the users.

I. The decision of the County to reset the 60-Day Performance Period shall be final and binding on the Contractor.

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J. If applicable, the cutover and transition of the remaining County agencies will follow the same process as the initial agencies but will not begin until the 60-Day Performance Period has been successfully completed.

16.13.1 Major and Minor System Failures

A. Successful operation is defined as the absence of any Major System Failure of equipment or loss of system functionality. Any Major System Failure will restart the clock to day 1 of the 60-Day Performance Period test.

B. Minor failures, such as operational problems and adjustments normally encountered during implementation of a new system, shall not constitute a failure in achieving successful operation.

C. The following is a listing of items that define a Major System Failure:

a. System in non-trunked fallback mode or failsoft

b. System in "site trunking"

c. Groups of mobiles or portables receiving a denial or busy tone

d. The loss of more than one (1) dispatch console operator position

e. The loss of voice communications

f. The loss of data communications if applicable

g. Failure of the trunked system switch/controller

h. The loss of two (2) or more trunked repeater channel resources

i. A simulcast failure affecting one (1) or more sites

j. Loss or failure of the system configuration database

k. Loss or failure of the user database

l. Failures that prevent acceptance criteria from being achieved

D. The following is a listing of items that define a Minor Failure:

a. Failure of any equipment which does not cause the interruption of trunking operation or dispatch console functionality, provided that redundant equipment automatically switches into operation in accordance with the RFP

b. Momentary (10 seconds) system outages during switching to redundant control equipment

c. The failure of one (1) repeater channel, provided that such failures are corrected within the maintenance response time required by the RFP

d. Failure of a single dispatch console position that is not attributable to other system failures

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e. Failure of a site frequency standard provided that redundant equipment automatically switches into operation in accordance with the RFP

f. Failure of a single tower-top amplifier or multicoupler

g. Any component infected with a virus, malware or any security breach

E. During the 60-Day Performance Period, the Contractor shall provide maintenance response, replacement parts and materials, and qualified personnel to service the fixed-end system and equipment at the sites of work within one (1) hour after notification of a major equipment failure as reported to the Contractor's service facility, during normal working hours (8:00 a.m. through 5:00 p.m. Monday through Friday) and within two (2) hours after hours.

a. The Contractor shall have sufficient personnel and parts available to maintain the system and equipment so that the equipment can be repaired within eight (8) hours after notification of equipment failure

b. This provision shall apply on a twenty-four (24) hours per day, seven (7) days per week basis including holidays

16.13.2 Performance Documentation

A. System performance documentation shall be maintained in a common electronic database; the database shall permit sorting by field to facilitate the analysis of maintenance records.

B. This database shall be maintained by the Contractor but shall be accessible, via remote login provided to the County by the Contractor to the County at all times.

C. During the performance period, the Contractor shall establish and maintain the following documentation:

a. Prepare and maintain a service/repair record system

b. Each major piece of equipment and radio subscriber unit shall be maintained by serial number and asset number

c. Prepare and maintain a failure reporting system to insure that all failures are reported promptly to the County

d. A failure log shall be available for inspection by the County at all times

D. A formal failure report shall be submitted to the County on a monthly basis and shall show for each failure:

a. The problem and the time reported

b. The time that the technician responded

c. The problem actually found

d. The repairs performed and the time of restoration

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e. An itemized list of parts replaced

f. The technician's name

g. Any FCC required measurements made due to repairs

16.14 Final System Acceptance

A. The County will consider the system ready for Final System Acceptance upon the satisfaction of the following conditions:

a. All punch list and action items are completed and no outstanding problem issues exist

b. All equipment and services to be provided in accordance with the RFP have been received by the County

c. All required training has been performed per the RFP

d. All functional, technical, performance tests and the 60-Day Performance Period have been successfully completed, and the results have been provided to the County and accepted as complete and in accordance with the RFP

e. All as-built drawings, service manuals, operator manuals and related documentation required in the terms and conditions and the RFP have been provided to the County and are accepted as complete and in compliance with the requirements

f. All legacy system equipment and antenna systems have been removed if required and properly disposed of in accordance with County directives

g. Submission of proof of payment of fees, taxes or similar obligations

h. All permits, FCC licensing, FAA applications, certificates of inspection and other approvals and releases by governing authorities required for the County's occupancy and use have been completed and all notices filed

i. Settle liens and other claims

j. Settle Liquidated Damages due to the County, if any

k. Transfer operational, access, security and similar provisions to the County and remove temporary facilities, tools and similar items

l. Obtain Consent of Surety for final payment

B. The Contractor shall provide in their proposal, a complete listing of the Final System Acceptance documents that will be the deliverable to the County.

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17. TRAINING

A. The Contractor shall include in their proposal, their proposed high level training plan and courses to be provided and a syllabus of the proposed training program.

B. The Contractor representatives shall provide user training to County personnel who will be responsible for training additional personnel in the operation and functions of the new communications system.

C. The Contractor shall develop and provide a comprehensive and detailed plan for all training associated with the use, operation, and management of the new communication system as described in this section.

D. The Contractor shall provide the detailed training plan to the County for approval at least ninety (90) days prior to the cutover of system to live operation.

E. The training plan shall provide on-line “prerequisite” training as required, and on-site training by highly skilled training personnel with extensive training and experience on the equipment and systems supplied under this RFP.

F. The training sessions shall be scheduled at times and locations as negotiated with the County.

G. Dispatcher training may be required on a 24-hour basis without extra cost to the County.

H. The County will provide classroom space where training can be conducted.

I. The County’s live operational equipment will be used in a "hands-on" environment.

J. Written materials and audiovisual aids produced by the Contractor for the training shall be furnished to the County for continuing education purposes.

K. The Contractor shall provide all necessary instructional materials, manuals, handouts, and other training materials which shall be retained by the trainees for their reference. All training materials shall be provided in an editable electronic version such as *.pdf (Portable Document Format).

17.1 Dispatcher Trainer Training

A. The Contractor shall provide a comprehensive “Train-the-Trainer” program for the identified audiences and the subjects defined in this section.

B. The training program shall include at a minimum, training for supervisor and operator personnel.

C. Such training shall include at a minimum, five (5) sessions for up to ten (10) trainers each.

D. The first training class shall be given to supervisory personnel of the agencies involved so that any deficiencies discovered in the training program may be corrected before the remaining personnel are trained.

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E. Concurrent with the installation and prior to the performance period of the communications system, the Contractor shall provide orientation and training for all of the participating department's dispatch radio personnel trainers for all aspects of the operation and functioning of the P25 communications system and equipment.

F. The County will provide classroom space for the training and the Contractor shall provide the connectivity between the classroom and the P25 system.

G. The training shall be tailored to the requirements of each user agency and shall use the agencies' final console screen configuration.

H. The dispatch consoles used for training shall be connected to the new P25 system.

I. If the Contractor intends to utilize the actual console hardware to be provided to the County, the Contractor shall work with the County to determine which consoles are to be used for the training sessions.

J. Supervisory personnel and dispatch radio trainers shall be trained on-site in the following areas:

   a. All features and functions

   b. The configuration of the new system and its operational modes, and the primary differences between the new system and the current system

   c. Operational theory of the dispatch consoles

   d. The failure modes of the P25 system and backup systems such as RF control stations, mobile and portable equipment, trunking and conventional, and the failure modes of operation

   e. Hands-on familiarization with all communications control functions and equipment

   f. Basic dispatch operator maintenance and diagnostic troubleshooting techniques

   g. System manager terminals and report generation

   h. Other ancillary systems

17.2 System Management Training

A. The Contractor representatives shall provide on-site training to County radio communication systems personnel who will be responsible for database entries, setting up user files, and administering services for the communications system.

B. This training shall include intensive instruction on all aspects of the tasks necessary to operate the system.

C. The training class shall consist of up to six (6) people.

D. The System Manager training course shall be a comprehensive program designed to familiarize the radio communication systems personnel with all of the available features, reports, provisioning, and system diagnostics.

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E. The System Manager course must include, at a minimum, the following topics:

a. System overview

b. Operational theory of all system components

c. Detailed discussion of system failure modes and the appropriate response

d. Basic troubleshooting techniques

e. The available system features and report generation

f. The available system diagnostics and reports

g. Dispatch console management and configuration administration

h. Development and maintenance of system databases and archives

i. Detailed discussion of system and site alarm systems

j. Hands-on training and familiarization with all of the above

k. Fleet-mapping for the system

l. Disable/enable user radios authorized on the system

m. System utilization by their radios and talk groups

n. Voice logging recorder interface configuration and administration if applicable

o. ISSI interface configuration and administration

17.3 On-Site User Operator Trainer Training

A. The Contractor shall provide a comprehensive on-site "Train-the-Trainer" operator courses for the identified audiences and the subjects defined in this section.

B. The Contractor shall provide "Train-the-Trainer" type operator courses for the following categories of equipment:

a. Subscriber Mobiles

b. Subscriber Portables

c. Subscriber Control Stations

d. Vehicular Repeaters (if utilized)

e. Alternative Support Systems and Specialized Equipment (if utilized)

B. Training shall include system orientation and familiarization that includes theory of operation discussion and equipment demonstration, and shall be designed so that, upon completion, each student will be qualified to train system end-users on the operation of the specific equipment.

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C. The Contractor shall customize these "Train-the-Trainer" courses per the County's satisfaction in conjunction with the specific programming and configuration parameters utilized by the County.

D. The Contractor shall provide training for up to three (3) classes of fifteen (15) students per class.

E. The Contractor's highly skilled personnel shall conduct the training.

F. Instructional material shall be included as part of each course and will become property of the County.

G. Training aids such as videos, system diagrams, training manuals showing working functionality and a qualified instructor shall be available for these classes.

H. Each student shall receive a personal "Trainer's Guide" training manual. The "Trainer's Guide," and other training documentation shall be provided in electronic (PDF) editable format on forty-five (45) USB flash-drives supplied by the Contractor.

I. The Contractor shall provide, in addition to the training plan, and handout material, five (5) video copies that would instruct a user on the operational functions and features of all proposed radio system subscribers.

17.4 Subscriber Maintenance Training

A. The Contractor shall provide an on-site technical training seminar for a minimum of eight (8) persons for all aspects of 1st echelon maintenance training for all models of user equipment provided under the Contract.

B. The County has radio system technicians and support personnel that have daily contact with the system users and determining if a problem is an operational error, a user radio issue, or a system malfunction that may need escalation to a higher level of maintenance.

C. The Contractor shall provide 1st echelon training to the personnel so that they can identify equipment problems and initiate an efficient course of action for repairs.

D. The Contractor shall supply training personnel that are highly skilled with extensive training and experience on the equipment supplied as part of this Project, and all necessary instructional materials.

E. All manuals, schematics, diagrams, and other printed and soft copy materials shall become the property of the attendees.

F. The 1st Echelon training course shall include, at a minimum, the following topics:

   a. Operator training

   b. Testing radio units for proper operations using a service monitor and test set

   c. Adjusting radio units to within specifications using radio software, a service monitor and a test set

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d. Basic troubleshooting techniques

e. Disassembly / reassembly of radio units

f. Identifying radio units to be repaired in-house or at the factory depot

17.5 Subscriber Programming Training

A. The Contractor shall provide on-site training seminars for a minimum of eight (8) County radio communication systems personnel for all aspects of the development of radio templates and personality code plugs.

B. The training provided shall include the following areas:

a. All available programming features and functions

b. The use of each individual piece of radio service and programming software program.

c. The development of radio personality templates for all mobile, portable, and control station user equipment provided, including its operational modes and feature sets.

C. The Contractor shall supply training personnel that are highly skilled with extensive training and experience on the equipment supplied as part of this Project, and all necessary instructional materials.

D. All manuals, schematics, diagrams, and other printed and soft copy materials shall become the property of the attendees.

E. The Contractor shall provide a minimum of four (4) sets of programming cables and software where each set consists of all cables, software, and licenses required to program all mobile, portable and control station user equipment provided by the Contractor.

F. This training and programming cable and software sets shall be provided by the Contractor at no cost to the County.

17.6 Radio and Backhaul Systems Maintenance Training

A. The Contractor shall provide familiarization and maintenance training for County technical personnel during the Factory Staging and Acceptance Test and the installation phases of the Project.

B. This training will ensure that County maintenance personnel are familiar with the various components and equipment of the communications system.

C. The Contractor shall provide on-site training seminars at the County for a minimum of five (5) persons, and shall include complete training, beginning with basic digital theory through comprehensive coverage of the provisioning, operation, and maintenance of the communications system and backhaul equipment supplied under this contract.

D. The training shall include the provisioning, operation, and maintenance of the radio system's and backhaul system's network management systems.

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E. The Contractor shall supply training personnel that are highly skilled with extensive training and experience on the equipment supplied as part of this Project, and all necessary instructional materials.

F. All manuals, schematics, diagrams, and other printed and soft copy materials shall become the property of the attendees.

G. The technician training courses shall cover, at a minimum, the following topics:

a. An overview of the system configuration and capabilities, block diagrams and circuit and component descriptions

b. Network backhaul configuration, setup and IP addressing

c. A presentation of the general communications equipment, theory, configuration, and features

d. Principles of digital P25 Phase 1 and Phase 2 transmissions

e. Simulcast theory, principles, operation, alignment and maintenance

f. System failure modes, troubleshooting, diagnostics, and alarms

g. Base station operation and maintenance, transmit and receive antenna systems testing and optimization

h. Operation of specialized test equipment

i. Detailed repair procedures, unit/module replacement, alignment, optimization, and testing procedures

j. Detailed preventative maintenance and record-keeping procedures

17.7 Radio Propagation Software and Training

A. The Contractor shall provide radio propagation modeling software inclusive of all required databases and a perpetual license to allow County personnel to model radio system coverage.

B. The license shall enable three (3) concurrent user sessions.

C. The Contractor shall provide the required computer hardware specifications needed to utilize the propagation software.

D. The Contractor shall provide on-site training seminars prior to Final System Acceptance for a minimum of eight (8) persons, and shall include complete training, beginning with basic radio propagation and simulcast theory through comprehensive coverage of the operation of the software.

E. The Contractor shall supply training personnel that are highly skilled with extensive training and experience on the equipment supplied as part of this Project, and all necessary instructional materials.

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F. All printed and soft copy materials shall become the property of the attendees.

G. The Contractor shall provide the completed file and data for the radio propagation software that defines the County radio system as constructed.

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18. SYSTEM DOCUMENTATION

18.1 General

A. All drawings, as-builts, and user operational manuals identified in the Contractor's proposal and the resulting contract shall become the property of Volusia County upon Final System Acceptance.

B. The Contractor shall provide a detailed drawing that physically describes each equipment site location and a logical drawing that details IP addresses, port numbers, router, switches and any specialized equipment that the Contractor is providing.

C. The Contractor shall supply a complete set of documentation that describes the overall communications system layouts, block diagrams, architecture, as-built documents, and its operating and failure modes for all systems, subsystems, and components supplied under the contract.

D. The documentation shall consist of three (3) electronic copies on flash drives and one (1) bound hard copy of the entire system documentation to be placed at each of the fifteen (15) communication sites and at the 800 MHz System Manager's office.

E. The Contractor shall supply the documentation as specified in this section.

F. The documentation shall consist of the following at a minimum:

   a. User instruction and operation manuals

   b. Detailed equipment maintenance, setup, and alignment manuals

   c. System and equipment test data (both factory and field)

   d. Software documentation which describes system and equipment software and versions

   e. System and site as-built drawings and diagrams

   f. A complete inventory of all provided equipment and software including model numbers, serial numbers, version numbers in printed form and in the latest version of Microsoft Excel

G. The Contractor shall provide all documentation in Adobe Acrobat format (PDF) as well as in Microsoft Word or Microsoft Excel format as appropriate.

18.2 System Drawings

A. The Contractor shall prepare system engineering drawings for each site of work with all changes, configurations, and modifications documented for each individual communications site showing the equipment configuration, cabling schematic, cabling plan, and all other important system elements.

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B. The equipment shall be installed in accordance with these drawings and specifications, which shall be delivered to the County as an integral part of the communications system when it becomes operational.

C. Any deviations from the planned installation shall be noted in the as-built, installed, programmed, wired, configured, and modified drawings, in accordance with this RFP.

D. The Contractor shall provide a general system manual that describes the overall system layouts, architecture, and its operating and failure modes.

E. At a minimum, the general system manual shall include:

a. System block diagrams

b. Site layouts and floor plans for each equipment site, and dispatch facility to scale

c. Rack face drawings to scale

d. Drawings showing cable tray location details to scale

e. Interconnection drawings that show all connections between sub-assemblies, such as terminal boards, panel assemblies or other equipment, and which external connections are made

f. Documentation of numbering and labeling of all cabling associated with remote control units

g. Documentation of numbering and labeling of all connections to termination blocks associated with the control consoles and conventional interfaces

h. Documentation of numbering and labeling of all interconnecting cabling between repeaters, the central control, any remote site controllers or processors, alarm circuits, leased telephone company circuits, and the backhaul system

i. Documentation and labeling of transmission line routing and antenna mounting at all fixed sites, with detailed drawings showing all mounting hardware and accessories

j. Any unique wiring configurations or circuit modifications that are not part of the standard equipment documentation

18.3 Instruction and Operation Manuals

A. The Contractor shall provide to the County all system documentation including operating instruction manuals for each type of equipment supplied at each site.

B. This documentation shall be organized in a manner to allow the County's personnel quick access to the information.

C. As a minimum, the following shall be provided:

a. General practices

b. User operating manuals

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D. The Contractor shall supply necessary operating manuals, drawings and other documentation to assure that the County's personnel shall be able to operate the communications system both initially and in the future.

E. All system documentation shall be provided prior to training.

F. Documentation shall be used during training sessions and updated as needed for revisions found during training.

G. Revised system documentation shall be re-submitted prior to Final System Acceptance.

H. At a minimum, this documentation shall include:

a. Complete set of operations manuals shall be provided for the system as whole and for each category of equipment purchased in association with this Project

b. Manuals for OEM hardware for each component of the system

c. All system, field unit, and base station user manuals published by the equipment manufacturers

d. System diagrams showing up-to-date as-built configurations for all parts of the RF, controlling, transmission, and management systems

e. Each major component shall be identified and the interconnecting relationship shall be clearly shown

18.4 As-Built Drawings

A. Thorough "as built" documentation shall be provided by the Contractor and delivered to the County's Project Manager prior to Final System Acceptance.

B. These drawings shall include all communication sites and equipment that the Contractor had installed new, modified, and/or relocated existing equipment.

C. All deviations from the original system documentation shall be noted in the final as-built documents.

18.5 System Testing and Acceptance Documentation

A. The Contractor shall provide a complete set of documentation of the results of the System Acceptance Test Plan.

B. At a minimum, this documentation shall include:

a. The results of the Factory Staging and Acceptance Test for all staged systems

b. Site installation, mechanical, electrical and grounding inspections

c. Microwave and LMR antenna systems testing including TDR and Return Loss sweep test results, installation and grounding inspections

d. Generator, UPS, DC power systems startup and run tests

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e. Structural, geo-technical, earth ground resistance testing

f. FAA, FCC, and other regulatory studies, coordination, and licensing

g. Building permits

h. System Functional Acceptance Test Plan and results

i. Equipment Specification Test results

j. Ancillary systems tests as applicable; FSA systems, etc.

k. Radio propagation coverage maps

l. Coverage Acceptance Test Plan documentation and test results including any in-building testing

m. 60-Day Performance Period results and all Major and Minor System Failures

n. Final completed punch list

o. Final fleet map configuration with all group I.D.s, aliases, etc.

p. A complete roster of unit I.D.s and aliases

q. Documentation of final programming configuration for all software programmable equipment

r. A log of level settings for all analog audio and control circuits

s. A listing of telephone circuits by circuit number and telephone number for service on these circuits if installed

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19. WARRANTY AND EXTENDED MAINTENANCE REQUIREMENTS

A. The Contractor shall include in their response the cost to provide 1) a parts and labor warranty maintenance period, and 2) the cost of an extended corrective and preventative, parts and labor, maintenance Contract that includes all software bug fixes, hardware maintenance upgrades, licenses and any license changes, firmware upgrades, preventive maintenance, and all labor for infrastructure and subscriber equipment, communications system monitoring, hardware and software maintenance, annual preventative maintenance testing, security updates, Contractor-provided backhaul network equipment, and scheduled network server and technology platform updates. The Contractor shall detail pricing in their proposal for a two (2) year warranty maintenance period for all infrastructure equipment and an extended maintenance Contract of fifteen (15) years.

B. For all subscriber equipment, the contractor shall provide extended maintenance agreement pricing for two (2) optional warranty terms. The County will select the subscriber equipment warranty period during contract negotiations. This pricing must include the monthly maintenance cost for all mobile and portable radio models proposed in the Contractor's response:

   a. Price a three (3) year parts and labor warranty maintenance period and an extended maintenance Contract of fourteen (14) years.

   b. Price a five (5) year parts and labor warranty maintenance period and an extended maintenance Contract of twelve (12) years.

C. The Contractor shall describe its warranty and extended maintenance services in detail. Include a thorough description of services covered during each period. Include in the description after hours support, network monitoring, and maintenance staffing.

D. Any declared Severity 1 problem shall require on-site support from the OEM's technical assistance organization and engineering personnel.

E. The contractor shall specify the location of its maintenance service facility and the estimated travel time to each of the County's radio sites. Travel time to any one site given normal traffic shall be no longer than one (1) hour.

F. Software licenses: A complete list of all software licenses and associated information shall be provided to the County as part of the Contractor's response proposal. The County shall not be responsible for paying for software licenses omitted from the Contractor's proposal.

G. The Contractor shall include the price of access to its Technical Support organization in the warranty maintenance period and the extended maintenance Contract.

H. The Microwave system shall be included in the warranty maintenance period and the extended maintenance Contract and its associated pricing.

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I. The individual Cities and other radio user agencies will each be responsible for the administration of their individual maintenance agreements and the Contractor shall extend the same radio maintenance pricing to the Cities and other radio user agencies as offered to the County.

J. As part of the warranty and maintenance agreement, the Contractor shall perform a regular preventative maintenance on subscribers at a minimum of twelve-month intervals.

K. The Contractor shall state their average repair cycle time that can be met for equipment delivered to the Contractor's local service facility.

19.1 Warranty Maintenance Period

A. The Contractor shall warrant that all user and infrastructure equipment and installation services conform to the specifications provided within this RFP, or the manufacturer's published specifications, whichever is most stringent, that it shall be free from defects in materials, functionality, and workmanship for a period of at least two (2) years from the date of Final System Acceptance. During the warranty maintenance period, the Contractor will cover all software bug fixes, hardware repair, any vendor required license changes, firmware upgrades, preventive maintenance, and all labor for infrastructure and terminal (radio) equipment at no cost to the County.

B. The warranty maintenance period shall commence on the date of Final System Acceptance.

C. Third party warranties on equipment included as part of the system and not manufactured by the OEM vendor shall be passed on to the County. A complete list of equipment, associated hardware and software licenses, and warranty information shall be included in the Contractor's proposal. The County will not be responsible for paying for software licenses omitted from the Contractor's proposal.

D. During the warranty maintenance period, the Contractor shall provide signed written documentation from the OEM that it will use all its resources to complete the P25 Radio System implementation and warranty agreement if the Contractor fails to complete the requirements of the Contract.

E. The Contractor shall provide within the warranty maintenance period, all labor, parts, supplies, transportation, test equipment, and facilities to maintain all dispatch consoles and infrastructure communications system components, equipment, and software to the level of factory performance and within the requirements contained herein.

19.2 Warranty Maintenance Period Commencement

A. The warranty maintenance period shall commence for all user and infrastructure equipment and systems upon the date of Final System Acceptance.

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19.3 Spare Parts, Assemblies, and Accessories

A. The County shall not be responsible for purchase, furnishing, maintaining or storage of any spare equipment, assemblies, or modules required for the support of the new P25 system infrastructure systems and equipment.

B. The Contractor shall be responsible for all spare parts, assemblies, and modules necessary to meet the warranty and maintenance response and restoration requirements of the Contract.

C. The Contractor shall specify the location where it will maintain the spare parts, including a listing of the spare parts that will be maintained in close proximity to Volusia County.

D. The Contractor shall provide and be responsible for all necessary spares required to meet the response and restoration requirements specified in the maintenance plan of the Contract.

E. The Contractor shall include in their proposal a detailed itemized listing and price for all proposed equipment, recommended test equipment, tools, and fixtures.

F. The Contractor shall furnish a detailed description of each spare component of their proposed system including the purpose of the parts, assemblies, and modules so that parties not familiar with the OEM vendor's terminology can determine their application and their use.

G. If any spares require firmware or software, each spare shall have the appropriate versions installed. The Contractor shall propose a procedure for keeping spare equipment up to date from a software and hardware perspective.

H. In the event that the spares are consumed, the Contractor shall replenish the spares in order to meet the response and restoration requirements specified in the maintenance plan of the Contract

I. Replacement spares shall also be available via emergency request with expedited delivery within twenty-four (24) hours of the equipment failure.

J. The Contractor shall provide to the County five (5) sets of programming software, cables, and required interface devices for each model of software programmable equipment included in the system.

K. The Contractor shall provide a complete list, including model number and price, for each piece of software and equipment required to program the new equipment and any associated passwords required to maintain the system.

L. The presence of redundant backhaul routing systems shall not be considered as spare parts.

M. The Contractor shall test all spare equipment on an annual basis to verify that is operational and of the correct firmware/software version as required by the system.

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19.4 Lifecycle Support and the Availability of Replacement Parts

A. The Contractor shall provide an end of manufacture and an end of product support table with dates that identifies the end of maintenance manufacture and end of support dates for each piece of backbone, infrastructure, and radio equipment included in their proposal. (Refer to Appendix G: End of Manufacture and End of Product Support)

B. The Contractor shall provide the original date of product release for each product.

C. The Contractor shall certify that replacement parts for infrastructure equipment shall be available for a period of ten (10) years following the date of product discontinuance by the manufacturer.

D. The Contractor shall certify that replacement parts for mobile, portable, and control station radio equipment and accessories shall be available for seven (7) years following the date of product discontinuance (date for end of manufacture) by the manufacturer.

E. The location of the parts depot that stocks the replacement parts shall be specified in the proposal.

F. Should replacement parts be unavailable as outlined above, such that the radio system components cannot be repaired, the Contractor shall replace that item at no cost to the County, with a current year, equivalent model of the same item, with the same features and capabilities.

G. If equipment is proposed, which cannot be field diagnosed and repaired, or which require special instrumentation or devices to repair, the Contractor shall specify how such assemblies will be repaired at a central facility, and how the equipment will be packed, shipped, received, and repaired by the Contractor.

19.5 Ongoing Corrective and Preventative Maintenance

A. The Contractor shall describe their complete plan to provide the County with maintenance service.

B. The Contractor shall establish and maintain a database of all radios the County and Cities have purchased, which includes, model number, serial number, features supplied with each radio, software release levels, programming, history of maintenance actions, purchase date, and owning agency. Access to the radio database and ability to export data such as updates on demand shall be made available to the County.

C. The Contractor shall include the cost to extend the system infrastructure corrective and preventative maintenance on an annual basis for an additional 15 years following the expiration of the 2-year Warranty Maintenance Period.

D. The Contractor shall continue to provide all infrastructure system maintenance response after the warranty maintenance period expires for the maintenance period years 3 through 17.

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E. The Contractor shall provide signed written documentation from the OEM that it will continue to support the Contractor when troubleshooting problems during the extended maintenance period as long as the County maintains a maintenance Contract with the Contractor.

F. The maintenance response, terms, and conditions shall be the same as those described for the two (2) year warranty maintenance period.

G. Maintenance proposals shall clearly identify those items covered under the agreement, and clearly delineate items that are not included or conditions that would invalidate the maintenance agreement.

H. The Contractor shall be responsible for all costs for required tower work or troubleshooting during the Warranty Maintenance Period.

I. The Contractor shall maintain a regular schedule to perform preventative maintenance at a minimum of twelve-month intervals or as recommended by the manufacturer whichever is more frequent.

J. Preventative maintenance activities shall include the following checks on the system and adjust the equipment as required:

   a. Simulcast and voter performance tests

   b. Over-the-air transmit and receive tests to confirm antenna system performance

   c. Microwave testing including RX signal level and TX power level tests

   d. Repeater TX and RX performance (TX power, RX sensitivity, audio levels if applicable)

   e. Combiner and filter losses as applicable

   f. Receiver multicoupler/tower-top amplifier level and gain tests including testing through the tower-top amplifier test port

   g. -48VDC battery system tests

19.6 Firmware and Software Updates

A. The Contractor shall provide a complete listing of all firmware and software proposed by the Contractor and a complete listing of all software covered under the maintenance agreement.

B. The firmware and software maintenance plan shall list all licenses and subscriptions provided and shall include all maintenance and new feature releases.

C. After Final System Acceptance and prior to the end of the warranty maintenance period, the Contractor shall provide the County one (1) complete system infrastructure firmware and software update to the latest versions and patches including all operating systems and application software, anti-virus software, etc.

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D. The firmware and software updates shall include the cost of all software, services, and all labor to perform the updates.

E. All labor to install the updates shall occur during a time convenient to public safety operations and selected by the County.

F. This item shall be included in the Contractor's proposal base cost.

19.7 Technology Update and Cost

A. The County desires to update critical system components to the latest product hardware and software version over the life cycle of the infrastructure system.

B. Regardless of the Contractor's recommended system maintenance schedule, the Contractor shall provide their cost to perform a technology update every five (5) years commencing on the day of Final System Acceptance, i.e. year 5, year 10 and year 15.

C. The Contractor shall provide a list of all equipment eligible for the technology update.

D. If the OEM vendor replaces any of the components on the technology update list with new or a different technology, the County shall receive this new technology as part of the technology update.

E. The technology update shall include the replacement of critical components whose failure would result in a switchover of network master cores or the loss of service of more than one (1) communication tower site or dispatch console, but shall not include any optional upgrade to features or functions.

F. The Contractor shall replace the following components during the technology update:

a. Network core servers

b. Network core storage systems

c. Network core routers

d. Network core switches

e. Network firewalls

f. Network management servers and workstations

g. Voice logging recorder interface servers, including any required API upgrades with the voice logging recorder vendor

h. Dispatch center routers

i. Dispatch center switches

j. Dispatch center console computers

k. ISSI application server

l. Simulcast control point servers

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m. Applicable hardware and software licenses and license changes

G. Items not to be refreshed include the following if applicable:

a. Simulcast comparators and voters

b. Repeaters and receivers

c. Combiners, filters, multi-couplers

d. Antenna systems

e. Microwave backbone and antenna systems

f. UPS

g. DC power systems

h. Application servers (OTAR, OTAP, GPS, etc.) other than ISSI application server

i. Alarm systems

19.8 OEM and Third-Party Warranties

A. The Contractor shall pass the original equipment manufacturers' warranty to the County for all equipment that may have warranties for a period that extends beyond the Contractor warranty maintenance period for equipment such as communication shelters and roofing warranties, tower warranty, generator warranties, UPS and batteries, etc.

B. The Contractor shall pass the original manufacturer's third party hardware and software warranties on to the County for the manufacturer's specified warranty period.

19.9 Remote System Monitoring and Service Dispatch

A. The Contractor shall provide a description of their proposed active system network monitoring service for the County's proposed system.

B. During the warranty maintenance period, the Contractor shall provide remote network monitoring of the system for security and maintenance purposes on a 7 days per week, 24 hours per day, 365 days per year basis.

C. Network monitoring shall provide the Contractor with visibility of all system specific elements, events, and alarms.

D. The Contractor's network monitoring center shall be continuously staffed with trained technologists, who are capable of acknowledging events, running diagnostics, and initiating an appropriate maintenance response.

E. The Contractor's network monitoring center shall be responsible for the dispatch of the appropriate technical staff to effectively address the fault condition, and any subsequent escalation of the response, required to meet the contractual response and restoration times.

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F. The Contractor shall provide the County with a summary of the maintenance activity and system performance reports on a monthly basis or as requested by Volusia County.

G. The Contractor shall provide the County with an optional cost for remote system monitoring and service dispatch services during the extended maintenance period in Exhibit B – Pricing Sheets.

19.10 Preventative Maintenance Service During Warranty Maintenance Period

A. The Contractor shall provide preventative maintenance service to review, document and validate system performance for each device in the network individually and as a whole just prior to the end of the first year of warranty and just prior to the end of the second year of the warranty maintenance period.

B. The Contractor shall furnish and maintain a full and complete stock of spare parts, modules, and assemblies as needed to support the communications system and meet the required maintenance and restoration response requirements.

C. The Contractor shall provide trained personnel to perform preventative maintenance on the radio system and all support systems, including the backhaul system components provided by the Contractor, at each of the infrastructure locations.

D. The Contractor shall perform the preventative maintenance in a manner that will have the least amount of impact to the users and will contact the County prior to disabling equipment that would significantly reduce the performance of the system.

E. If the Contractor discovers equipment that does not perform per their specifications or found inoperable, the Contractor shall replace or repair the equipment.

F. Radio site maintenance documentation shall include, at a minimum, the following:

   a. Repeater TX and RX performance (TX power, RX sensitivity, audio levels where applicable)

   b. Combiner and band pass filter losses

   c. Documentation specifying system alignment measurements, microwave measurements, and tower top amplifier measurements

G. The County will have the following responsibilities:

   a. Review and comment on the preventative maintenance documents supplied by the Contractor

   b. Supply on-site presence when requested

   c. Supply tower climbers when required to investigate problems with the antenna system

   d. During the warranty maintenance period, the Contractor shall be responsible for providing tower climbers and their costs.

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19.11 Maintenance Personnel

A. The Contractor shall provide competent, experienced personnel to execute the required maintenance tasks during the warranty maintenance period and extended maintenance period.

B. All maintenance personnel shall be trained and experienced in standard communications industry practices.

C. Personnel who perform maintenance on the system shall have completed all required manufacturer-approved training for that system and equipment.

D. The Contractor shall provide evidence to the County that the said training and appropriate refresher courses have been completed by their service personnel.

E. The Contractor shall provide a resume for each technical personnel that will be assigned to support the County's new communication system, backhaul network, and user equipment.

19.12 Contractor Service Facilities

A. The preferred Contractor shall have a service facility located in Volusia County and provide service personnel on a 7 days per week, 24 hours per day, 365 days per year basis (7x24x365) at the time of Contract approval by County Council.

B. The Contractor shall maintain one (1) or more properly stocked, equipped, and staffed service facilities to maintain the communication system and equipment supplied under this RFP within the area, such that the maintenance response and restoration time requirements can be met.

C. The Contractor shall specify in their proposal, the location of their depot or secondary service facilities nearest to the County.

D. The Contractor shall specify the testing and maintenance equipment that is available as a permanent part of the Contractor’s on-site maintenance facility and used for maintaining the communications system.

19.13 Severity Levels Definitions and Response Time Requirements

A. Service for communication system infrastructure including but not limited to master core site network controller, site controllers, dispatch console systems, base station repeaters, antenna systems, control stations and communications center equipment, voting receiver equipment, and backhaul equipment shall be provided on a seven (7) days per week, 24 hours per day, 365 days per year basis.

B. Table 27 - Severity Level Response Time Requirements below provides the response time requirements for the warranty and maintenance service periods.

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Severity Level	Response Time Requirement
Severity 1	Telephone response within 30 minutes, and if required, on-site within 1 hour from receipt of notification, 7x24x365. Fault restoration within 4 hours from receipt of notification.
Severity 2	Telephone response within 30 minutes of notification, and if required, on-site within 2 hours from receipt of notification, 7x24x365. Fault restoration within 8 hours from receipt of notification.
Severity 3	Next business day.

Table 27 - Severity Level Response Time Requirements

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C. Table 28 - Severity Level Definitions, below provides definitions for the response time requirements listed in Table 27 above.

Severity Level	Problem Types
Severity 1	Major system failure One or more of Radio sites off-line 25% or more of the system talk paths off-line Loss of two (2) or more dispatch consoles Loss of ISSI or any interoperability interface Loss of the Fire Station Alerting radio communications systems Loss of master core site Loss of the network management system Failure resulting in any simulcast sub-system reverting to "site-trunking" Loss of two (2) or more System Manager/Alarm Terminals Loss of "full-featured" dispatch capability (revert to backup radio dispatch) Backhaul system failure resulting in a path outage
Severity 2	Significant system impairment 10% to 24% of the system talk paths off-line Loss of one (1) dispatch console Loss of a voice logging recorder interface Intermittent problems, interference
Severity 3	User equipment failures System problems under monitoring Operational and informational questions Configuration change support questions

Table 28 - Severity Level Definitions

19.14 Maintenance Response Penalty

A. Failure to meet the response times to a Severity 1 failure shall result in a deduction of one (1) week's maintenance Contract fees for each 30-minute period or fraction thereof beyond the 30-minute point.

B. Failure to meet the response times to a Severity 2 failure shall result in a deduction of one (1) day's maintenance Contract fees for each 30-minute period or fraction thereof beyond the 30-minute point.

C. These fees shall be deducted from the annual maintenance contract.

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19.15 Dispatch Area Maintenance Requirements

A. The County requires that Contractor maintenance personnel be on-site at 8:00 a.m. during business days to address any outside normal hours problems that were not resolved by on-site callout personnel.

B. Console system severity and response time problems will be handled as specified in Table 27 and Table 28.

19.16 Maintenance Documentation

A. There shall be a maintenance log with sufficient detail on each failure or maintenance action to enable the maintenance personnel to analyze the problems within the communications system and take the required corrective or preventative action.

B. This log shall be initiated at the start of the warranty maintenance period and shall be maintained throughout the entire warranty and extended maintenance periods.

C. The log shall include all equipment purchased under this Contract and shall include at a minimum make, model, serial number, date put in service, unit cost, asset number, and where the unit is located.

D. The maintenance log shall be stored in an electronic database that can be updated.

E. The Contractor shall provide authorized County maintenance personnel read-only access to the maintenance log.

19.17 Firmware and Software Maintenance

A. The Contractor shall provide a complete listing of all firmware and software proposed by the Contractor and a complete listing of all software covered under the firmware/software maintenance agreement.

B. The proposed firmware and software maintenance Contract shall include the costs associated with maintaining the infrastructure system and dispatch console equipment to the most current firmware and software versions as released by the Contractor over the post-warranty maintenance period.

C. The proposed maintenance Contract shall include the costs associated with maintaining the infrastructure system and dispatch console equipment to the most current firmware and software, and security patch updates and versions, for all operating systems, applications, and anti-virus software definitions as released by the Contractor over the post-warranty/maintenance period.

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20. TECHNOLOGY EVOLUTION

A. Recent advances in technology are leading to a convergence of wireless technologies such as commercial carrier, LTE, Wi-Fi, Bluetooth, and others, with Land Mobile Radio systems. Due to technology evolution during the lifetime of the proposed P25 system, it is anticipated that a number of new features will evolve in LMR.

B. Tab 5.3 provides the Contractor with an opportunity to describe any planned features or functionality that may become available during the procurement, implementation, and operation of the proposed P25 system.

   a. The Contractor shall explain how they will be a partner to the County to evolve the P25 radio system into a broadband-based Public Safety Communications System.

   b. If the Contractor is currently manufacturing and selling products in this category, please provide a description of the product, its availability, features, functionality and pricing for optional purchase consideration by the County. If such products are offered, the Contractor shall be specific regarding the requirements on the infrastructure and subscriber side hardware or software required to support the technology.

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APPENDIX A: USER EQUIPMENT

The quantities of user equipment and accessories can be found in the Pricing Sheets.

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APPENDIX B: UNIVERSAL AUDIO CARD CONNECTIONS

EOC-A Control Point Site UAC Connections	
Resource	**Equipment and Comments**
ARES	RACES Repeater at EOC-A Tower Site, 147.240 MHz/147.840 MHz
INTRCTY	Base Station at the EOC-A Tower Site
HALIFAX	Base Station at the EOC-A Tower Site for Flagler County
EVACPRM	MASTR III Repeater located at EOC-A Tower Site, Tx 460.575 MHz, Rx 465.575 MHz
AIR ONE	VHF Repeater at the EOC-A Tower Site
AIR GND	VHF Aviation Radio located at the EOC-A Tower Site
TOWER	VHF Aviation Radio located at the EOC-A Tower Site
VBI 1	M7100 Station located at the EOC-A Control Point
DISEMS3	Kenwood UHF Control Station at the EOC-A Control Point that transmits to a repeater at the Speedway
DF TAC 11	Daytona Speedway Fire TAC 11 is a UHF Unity XG-100M Control Station at the EOC-A Tower Site that transmits to a repeater at the Speedway
WHT WST	Simplex Station at the Orange City Site, Simplex 154.2800 MHz
ALLPTSC	M7100 Simplex Station at EOC-A Tower Site, Simplex 154.950 MHz
FIRE1 ZETRON IN	Audio and PTT Input Zetron at the EOSCC
FIRE2 ZETRON IN	Audio and PTT Input Zetron at the EOSCC
CPATCH1	FIN Interface at the EOSCC
CPATCH2	FIN Interface at the EOSCC
CPATCH3	FIN Interface at the EOSCC
CPATCH4	FIN Interface at the EOSCC

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EVAC Tower Site UAC Connections	
Resource	**Equipment and Comments**
FIRE1 ZETRON OUT	Audio Output to 5-way Bridge at the EVAC Site Zetron at the EOSCC
FIRE2 ZETRON OUT	Audio Output to 5-way Bridge at the EVAC Site Zetron at the EOSCC
TAC 9CV	Control Station at the Pierson Site for Flagler TAC9
MED8 CI	Tx 463.175 MHz / Rx 468.175 MHz at EOC-B
WHT N/W	Simplex Station at the Pierson Site, Simplex 154.2800 MHz
EOC	Linker to Brevard County located at the Edgewater Site
MARINE22	Marine Channel 23 located at the Port Orange Site
VHF M/A	MASTR III Repeater located at the EOC-B Site, Tx 158.7275 MHz / Rx 155.4750 MHz
8CALL90	Mutual Aid Simulcast Repeater Hailing Channel located at the EVAC, Pierson, Orange City, Port Orange, and Edgewater tower sites
8TAC92NE	Mutual Aid Repeater located at the EVAC Site
8TAC93NE	Mutual Aid Repeater located at the EVAC Site
8TAC94NE	Mutual Aid Repeater located at the EVAC Site
MA FL NE	Mutual Aid Repeater located at the EVAC Site
8TAC92SE	Mutual Aid Repeater located at the Edgewater Site
8TAC93SE	Mutual Aid Repeater located at the Edgewater Site
8TAC94SE	Mutual Aid Repeater located at the Edgewater Site
MA FL SE	Mutual Aid Repeater located at the Edgewater Site

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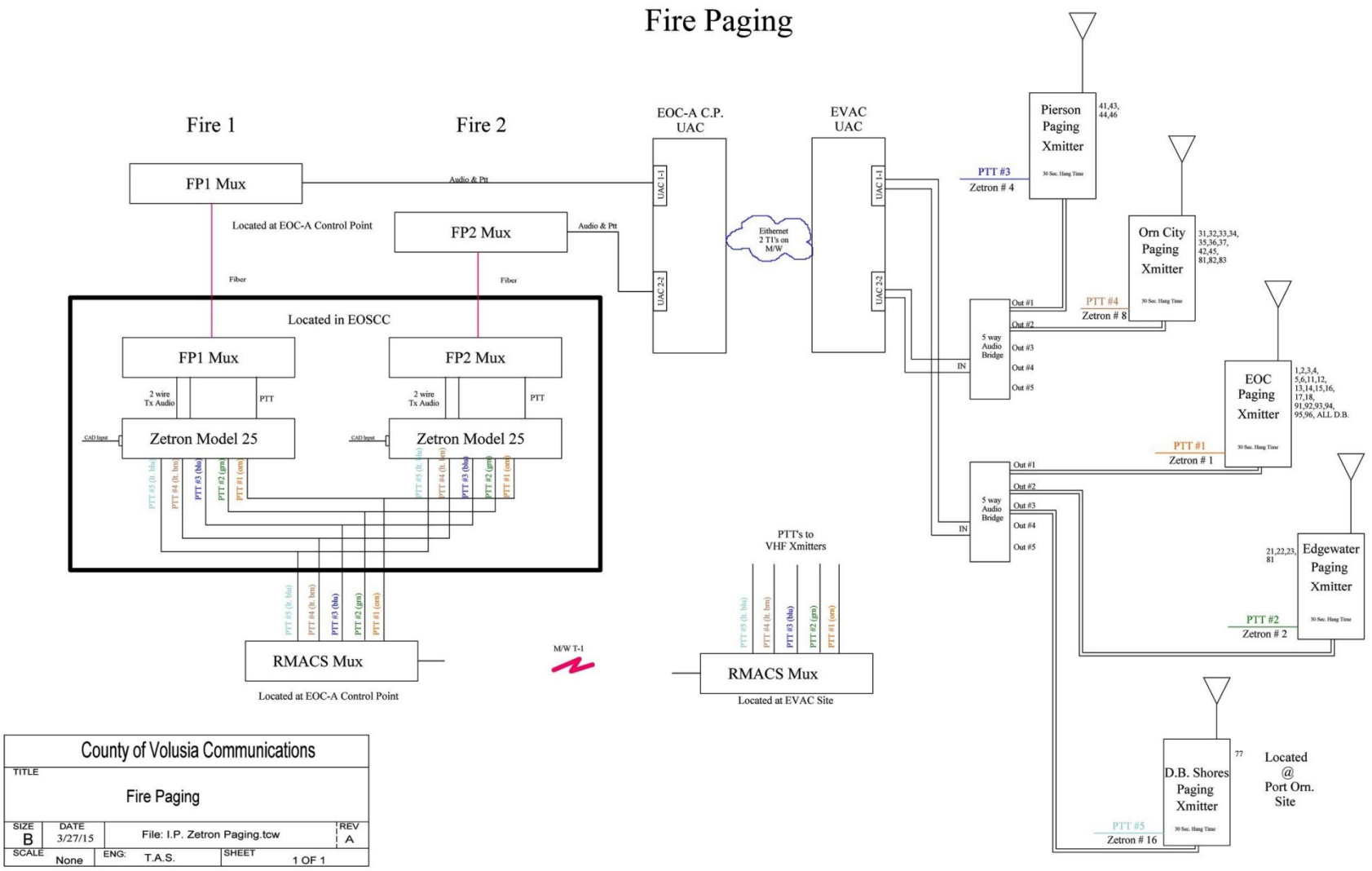
8TAC92NW	Mutual Aid Repeater located at the Pierson Site
8TAC93NW	Mutual Aid Repeater located at the Pierson Site
8TAC94NW	Mutual Aid Repeater located at the Pierson Site
MA FL NW	Mutual Aid Repeater located at the Pierson Site
8TAC92SW	Mutual Aid Repeater located at the Orange City Site
8TAC93SW	Mutual Aid Repeater located at the Orange City Site
8TAC94SW	Mutual Aid Repeater located at the Orange City Site
MA FL SW	Mutual Aid Repeater located at the Orange City Site
8TAC93EC	Mutual Aid Repeater located at the Port Orange Site

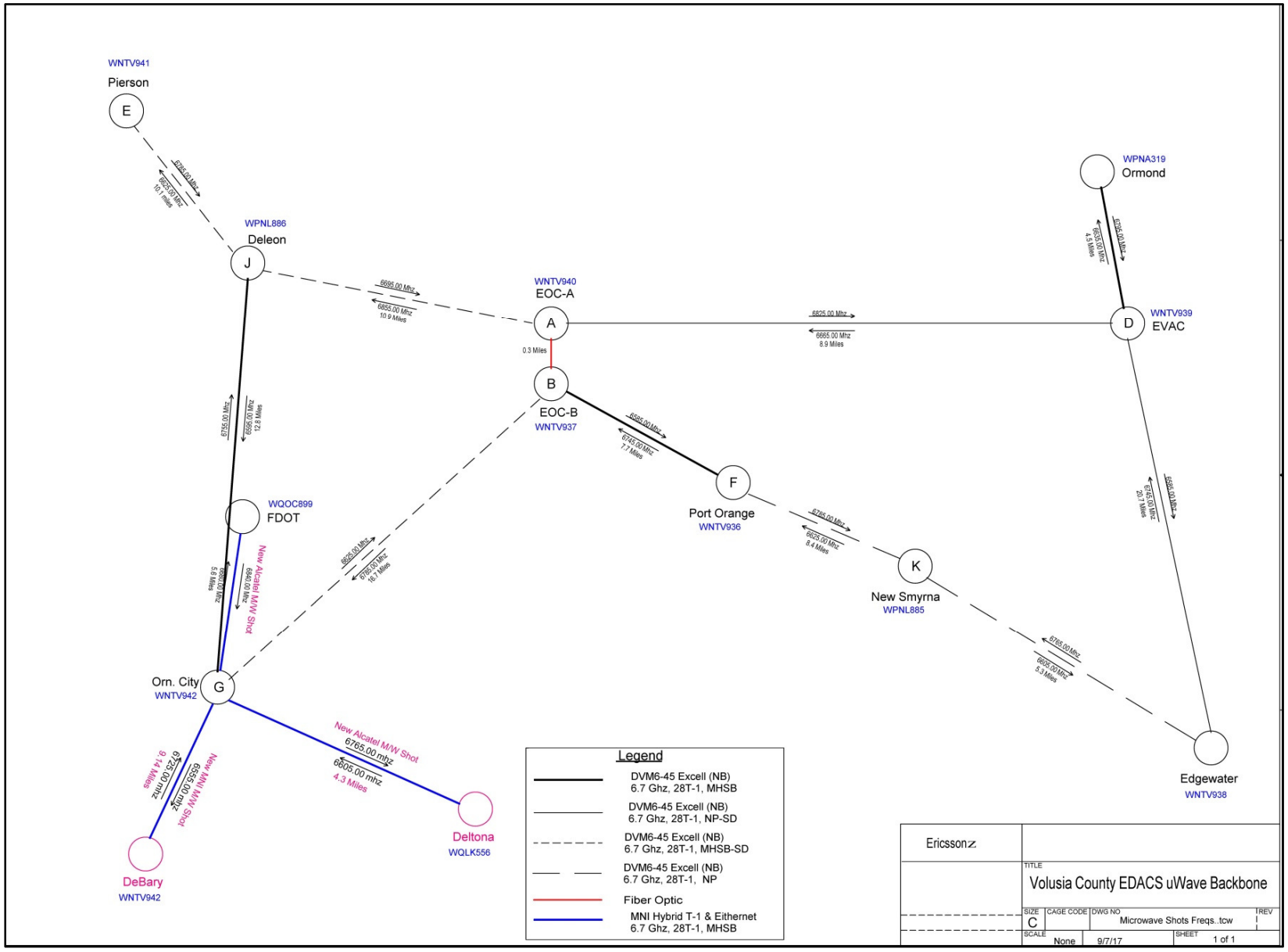
Attachment: 20._Exhibit_A_-_Technical_Specifications_-_Revisio (2022-R-8 : Purchase of a P25 Radio

APPENDIX C: CURRENT VHF FIRE PAGING SYSTEM DIAGRAM



Attachment: 20._Exhibit_A_-_Technical_Specifications_-_Revisio (2022-R-8 : Purchase of a P25 Radio

APPENDIX D: CURRENT BACKHAUL NETWORK DIAGRAM



Attachment: 20._Exhibit_A_-_Technical_Specifications_-_Revisio (2022-R-8 : Purchase of a P25 Radio

APPENDIX E: FARMTON TOWER SITE SOIL BORING

BECHTOL ENGINEERING AND TESTING, inc.

May 31, 2019
BET Project No. G19038

TO: Ms. Laura E. Laser
Volusia County Engineering & Construction
123 West Indiana Avenue, Room 402
DeLand, Florida 32720

RE: Report of Geotechnical Data
Farmton Tower Relocate
Maytown Road
Parcel No. 943000000071
Oak Hill, Volusia County, Florida

Dear Ms. Laser:

As requested, Bechtol Engineering and Testing, Inc. (BET) has completed geotechnical services at the above referenced site. The purpose of BET's study was to evaluate physical and strength characteristics of subsurface materials encountered by test borings within the area of proposed drilled shaft foundations.

In order to evaluate the physical and strength characteristics of the site's shallow subsurface soils, BET advanced one (1) Standard Penetration Test (SPT) boring (ASTM D1586) to depth of 50 feet below existing ground surface. Approximate location of the boring is shown on the Boring Location Plan presented on the attached Figure 1. Encountered subsurface conditions are presented in the form of Soil Profiles, also on Figure 1. Additionally, suggested soil parameters are tabulated on Figure 1 to aid the design-build contractor in the design and construction of drilled shaft foundation support systems.

BET appreciates the opportunity to be of service, and trusts the attached geotechnical data is sufficient for your needs. However, if you should have any questions, or if BET may be of further service, please do not hesitate to call.

Respectfully,

Bechtol Engineering and Testing, Inc.
Certificate of Authorization No. 00005492

L. Patel

Love B. Patel
Project Engineer

Thomas Bechtol, P.E.
President / Principal Engineer
Thomas Bechtol, P.E., State of Florida, Professional Engineer, License No. 38538
This item has been digitally signed and sealed by Thomas Bechtol, P.E. on the date indicated here.
Printed copies of this document are not considered signed and sealed, and the signature must be verified on any electronic copies.

CONSULTING GEOTECHNICAL, ENVIRONMENTAL AND MATERIALS TESTING ENGINEERS
605 West New York Avenue, Suite A • DeLand, FL 32720-6543 • Telephone (386) 734-8444
FAX (386) 734-8541

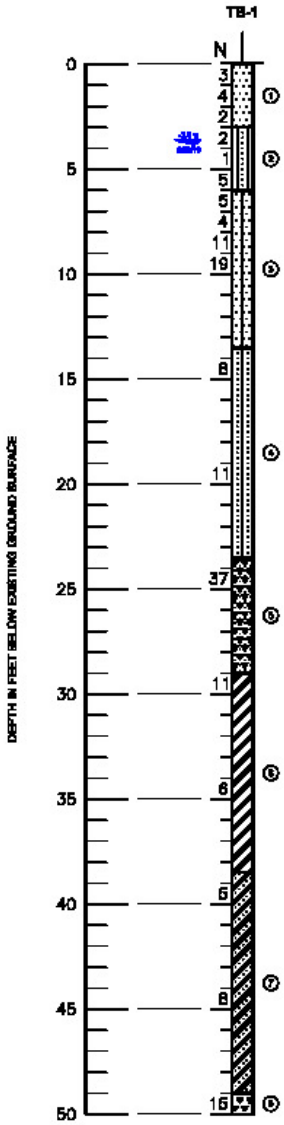
Attachment: 20._Exhibit_A_-_Technical_Specifications_-_Revisio (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

BORING LOCATION PLAN

SCALE: 1" = 100'

SOIL PROFILES

VERTICAL SCALE: 1" = 5'



SOIL & SYMBOL LEGEND

- ① DARK GRAY-BROWN TO LIGHT GRAY-BROWN SLIGHTLY SILTY FINE SAND, SOME WITH SLIGHTLY CEMENTED SANDS, (SP-SM), VERY LOOSE
- ② DARK BROWN TO BROWN SLIGHTLY SILTY FINE SAND, (SP-SM), VERY LOOSE TO LOOSE
- ③ REDDISH-BROWN TO BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND, (SP), (SP-SM), LOOSE TO MEDIUM DENSE
- ④ LIGHT BROWN TO BROWN SLIGHTLY SILTY FINE SAND, (SP-SM), LOOSE TO MEDIUM DENSE
- ⑤ GRAY AND LIGHT GRAY-BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND, SOME WITH SHELL FRAGMENTS, (SP), (SP-SM), DENSE
- ⑥ DARK GRAY SLIGHTLY SANDY CLAY, WITH TRACE SHELL FRAGMENTS, (CH), MEDIUM TO FIRM
- ⑦ GRAY SILTY CLAY, WITH TRACE SHELL FRAGMENTS, (CL), MEDIUM
- ⑧ GRAY SLIGHTLY SILTY TO SLIGHTLY CLAYEY FINE SAND, WITH SHELL FRAGMENTS, (SP-SM), (SP-SC), MEDIUM DENSE
- (SP) UNIFIED SOIL CLASSIFICATION GROUP SYMBOL AS DETERMINED BY VISUAL EXAMINATION
- GROUNDWATER LEVEL, REFERENCED IN FEET TO EXISTING GROUND SURFACE, DATE OF READING
- N STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT
- APPROXIMATE LOCATION OF STANDARD PENETRATION TEST BORING

SUGGESTED SOIL PARAMETERS

DEPTH (ft)	UNIT WEIGHT - γ (pcf)	FRICTION ANGLE - φ (degree)	COHESION - c (psf)	MODULUS OF SUBGRADE - K (pci)	STRAIN AT 50% STRESS - ε50 (in./in.)	RELATIVE DENSITY (%)
0 to 2	103	28	0.00	5	NA	13
2 to 5	41	28	0.00	7	NA	13
5 to 13.5	54	34	0.00	38	NA	38
13.5 to 23.5	51	33	0.00	28	NA	32
23.5 to 23	60	37	0.00	78	NA	68
23 to 43	68	0	0.61	31	1	NA
43 to 50	57	36	0.00	60	NA	46

BECHTOL ENGINEERING AND TESTING, Inc.
CONSULTING GEOTECHNICAL, ENVIRONMENTAL, AND MATERIALS TESTING ENGINEERS

SUPPLEMENTAL GEOTECHNICAL SERVICES
FARMTON TOWER RELOCATE
MAYTOWN ROAD
OAK HILL, FLORIDA

FILE:	CT BS	DATE:	5/23/19
DRAWN:	LP	SCALE:	NOTED
CHECKED:	LP	PROJ. NO.:	G19088
APPROVED:	TB		FIGURE 1

Attachment: 20._Exhibit_A_-_Technical_Specifications_-_Revisio (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

APPENDIX F: CRITICAL BUILDINGS

Buildings	Address	Latitude	Longitude
Administration	TCK - 123 W. Indiana Ave, DeLand 32720	29.029	-81.305
	Historic Courthouse, 125 W. New York Ave., Deland 32720	29.029	-81.302
	EOSCC, Tiger Bay Rd, Daytona Beach, FL, 32114	29.029	-81.304
	IT ESDC, 49 Keyton Drive, Daytona Beach, 32114	29.140	-81.144
	Ocean Center - 101 N Atlantic Ave, Daytona Beach, FL 32118	29.229	-81.011
Airport	Airport Terminal - 700 Catalina Dr, Daytona Beach, FL 32114	29.184	-81.061
Hospitals	AdventHealth (Florida Hospital Deland) - 701 West Plymouth Ave. DeLand, Florida 32720	29.043	-81.317
	Florida Hospital Fish Memorial - 1055 Saxon Boulevard Orange City, Florida 32763	28.914	-81.285
	Florida Hospital Memorial Medical Center - 301 Memorial Medical Parkway Daytona Beach, Florida 32117	29.241	-81.107
	Florida Hospital New Smyrna - 401 Palmetto St New Smyrna Beach, FL 32168	29.020	-80.922
	Florida Hospital Oceanside - 264 South Atlantic Avenue Ormond Beach, Florida 32176	29.284	-81.037
	Halifax Medical Center - 303 N. Clyde Morris Blvd. Daytona Beach, FL 32114	29.200	-81.054
	Halifax Health Hospital, Deltona - 3300 Halifax Crossing Boulevard Deltona, FL 32725	28.958	-81.256
	Halifax Medical Center of Port Orange - 1041 Dunlawton Ave. Port Orange, FL 32127	29.126	-81.009
	Florida Hospital Ormond - 5535 S. Williamson Boulevard Ormond Beach, FL. 32174	29.250	-81.109
Sheriff's Department District Offices	District 2 (Deland) - 1706 S. Woodland Blvd. DeLand, FL 32720	28.998	-81.304
	District 2-A - Pierson Substation 106 S. Center St. Pierson, FL 32180	29.240	-81.463
	District 3 North - 1435 US Hwy 1, Suite D-3 Ormond Beach, FL 32174	29.330	-81.122

Attachment: 20._Exhibit_A_-_Technical_Specifications_-_Revisio (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Buildings	Address	Latitude	Longitude
	District 3 South - 101 E. Canal Street New Smyrna Beach, FL 32168	29.026	-80.921
	District 4 - 1691 Providence Blvd. Deltona, FL 32725	28.906	-81.226
	District 6 - 79 S. Charles Beall Blvd. Debary, FL 32713	28.884	-81.308
Public Protection	Branch Jail - 1300 Red John Dr, Daytona Beach, FL 32124	29.140	-81.149
	Corrections - 1354 Indian Lake Rd, Daytona Beach, FL 32124	29.139	-81.146
Fire Stations	DAYTONA BEACH 7 2545 LPGA BLVD DAYTONA BEACH 32124	29.215	-81.112
	KEPLER RIDGE 42 1885 N KEPLER RD DELAND 32724	29.061	-81.262
	SPRING LAKES 32 2850 FIREHOUSE RD DELAND 32720	28.977	-81.301
	HALIFAX 13 15 SOUTHLAND RD ORMOND BEACH 32174	29.329	-81.112
	NORTH PENINSULA 14 1716 ATLANTIC AV ORMOND BEACH 32176	29.335	-81.061
	INDIAN MOUND 34 1700 ENTERPRISE OSTEEN RD ENTERPRISE 32725	28.857	-81.225
	LAKE HELEN 35 630 W MAIN ST LAKE HELEN 32744	28.985	-81.243
	DEBARY 33 75 S CHARLES R BEALL BLVD DEBARY 32713	28.884	-81.308
	ORANGE CITY 67 215 N HOLLY AV ORANGE CITY 32763	28.950	-81.298
	DELEON SPRINGS 41 5007 CENTRAL AV DELEON SPRINGS 32130	29.118	-81.350
	PIERSON 44 132 N FOUNTAIN DR PIERSON 32180	29.243	-81.467
	SPRUCE CREEK 12 1979 TAYLOR RD PORT ORANGE 32128	29.083	-81.066
	HALIFAX 11 1580 DERBYSHIRE RD DAYTONA BEACH 32117	29.244	-81.071
	GLENWOOD 46 920 GLENWOOD RD DELAND 32720	29.072	-81.328
	DAYTONA BEACH 4 1675 MASON AV DAYTONA BEACH 32114	29.211	-81.068

Attachment: 20._Exhibit_A_-_Technical_Specifications_-_Revisio (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Buildings	Address	Latitude	Longitude
	DAYTONA BEACH 1 301 BEACH ST DAYTONA BEACH 32114	29.208	-81.017
	DAYTONA BEACH 3 945 N HALIFAX AV DAYTONA BEACH 32118	29.240	-81.021
	SOUTH DAYTONA FIRE STATION 1672 S RIDGEWOOD AV SOUTH DAYTONA 32119	29.181	-81.008
	PORT ORANGE 71 4200 RIDGEWOOD AV PORT ORANGE 32127	29.141	-80.986
	PONCE INLET 78 4680 S PENINSULA DR PONCE INLET 32127	29.099	-80.941
	DELTONA 61 1685 PROVIDENCE BLVD DELTONA 32725	28.906	-81.226
	DELTONA 63 2147 HOWLAND BLVD DELTONA 32738	28.924	-81.189
	DELTONA 64 236 FORT SMITH BLVD DELTONA 32738	28.880	-81.175
	DELAND 81 201 HOWRY AV DELAND 32720	29.027	-81.306
	ORMOND BEACH 91 364 S ATLANTIC AV ORMOND BEACH 32176	29.283	-81.036
	DAYTONA BEACH 2 126 BOTEFUHR AV DAYTONA BEACH 32118	29.203	-80.999
	NEW SMYRNA BEACH 53 238 INDUSTRIAL PARK AV NEW SMYRNA BEACH 32168	29.048	-80.940
	NEW SMYRNA BEACH 52 500 3RD AV NEW SMYRNA BEACH 32169	29.029	-80.900
	RIMA RIDGE 18 500 RODEO RD ORMOND BEACH 32174	29.266	-81.228
	NEW SMYRNA BEACH 51 3151 SR 44 NEW SMYRNA BEACH 32169	29.016	-80.995
	HALIFAX PLANTATION 16 3935 OLD DIXIE HWY ORMOND BEACH 32174	29.404	-81.145
	DELTONA 62 320 DIAMOND ST DELTONA 32725	28.900	-81.271
	DELAND 83 1655 E TAYLOR RD DELAND 32724	29.001	-81.263
	DELTONA 65 2983 HOWLAND BLVD DELTONA 32738	28.947	-81.233
	ORANGE CITY 68 743 HARLEY STRICKLAND BLVD ORANGE CITY 32763	28.919	-81.292
	PORT ORANGE 75 1701 TOWN WEST BLVD PORT ORANGE 32128	29.112	-81.053

Attachment: 20._Exhibit_A_-_Technical_Specifications_-_Revisio (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Buildings	Address	Latitude	Longitude
	PORT ORANGE 72 6027 CENTRAL PARK BLVD PORT ORANGE 32127	29.093	-80.992
	NEW SMYRNA BEACH 50 1400 SR 44 NEW SMYRNA BEACH 32169	29.016	-80.938
	TURNBULL 23 1850 PIONEER TR NEW SMYRNA BEACH 32168	29.019	-80.946
	LAKE HARNEY 37 740 LAKE HARNEY WOODS BLVD MIMS 32754	28.731	-81.033
	FIRE TRAINING CENTER 15 3889 TIGER BAY RD DAYTONA BEACH 32124	29.147	-81.154
	OSTEEN 36 180 N SR 415 OSTEEN 32764	28.847	-81.163
	HOLLY HILL 96 1020 DAYTONA AV HOLLY HILL 32117	29.244	-81.038
	DAYTONA BEACH 5 627 N NOVA RD DAYTONA BEACH 32114	29.216	-81.046
	SOUTH BEACH 21 4840 S ATLANTIC AV NEW SMYRNA BEACH 32169	28.979	-80.861
	OAK HILL 22 213 N US HWY 1 OAK HILL 32759	28.870	-80.851
	ST JOHNS 45 2580 W NEW YORK AV DELAND 32720	29.023	-81.359
	PORT ORANGE 74 6701 AIRPORT RD PORT ORANGE 32128	29.068	-81.038
	EDGEWATER 57 2628 HIBISCUS DR EDGEWATER 32141	28.954	-80.896
	ORMOND BEACH 94 2301 AIRPORT RD ORMOND BEACH 32174	29.274	-81.146
	ORMOND BEACH 92 189 S NOVA RD ORMOND BEACH 32174	29.275	-81.082
	ORMOND BEACH 93 300 WILMETTE AV ORMOND BEACH 32174	29.291	-81.069
	DAYTONA BEACH 6 2020 BEVILLE RD DAYTONA BEACH 32114	29.164	-81.058
	PORT ORANGE 73 1090 CITY CENTER BLVD PORT ORANGE 32129	29.125	-81.024
	EDGEWATER 55 106 RHODE ISLAND ST EDGEWATER 32132	28.976	-80.897
	FS - DAYTONA BEACH INTERNATIONAL AIRPORT (DBIA) 2316 BELLEVUE AV DAYTONA BEACH 32114	29.178	-81.057
	DELAND 82 257 W INTL SPEEDWAY BLVD DELAND 32720	29.055	-81.308

Attachment: 20._Exhibit_A_-_Technical_Specifications_-_Revisio (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Buildings	Address	Latitude	Longitude
	DAYTONA BEACH SHORES 77 3050 S ATLANTIC AV DAYTONA BEACH SHORES 32118	29.166	-80.978
Schools	School Board - 200 N. Clara Avenue, DeLand, Florida 32720	29.031	-81.309
Elementary Schools	Blue Lake Elementary - 282 Blue Lake Ave, DeLand, FL 32724	29.031	-81.275
	Champion Elementary - 921 Tournament Dr, Daytona Beach, FL 32124	29.208	-81.137
	Chisholm Elementary - 557 Ronnoc Ln, New Smyrna Beach, FL 32168	29.030	-80.932
	Citrus Grove Elementary - 729 Hazen Rd, DeLand, FL 32720	29.040	-81.336
	Coronado Beach Elementary - 3550 Michigan Ave, New Smyrna Beach, FL 32169	29.003	-80.879
	Cypress Creek Elementary - 6100 S Williamson Blvd, Port Orange, FL 32128	29.084	-81.027
	DeBary Elementary - 88 W Highbanks Rd, DeBary, FL 32713	28.891	-81.319
	Deltona Lakes Elementary - 2022 Adelia Blvd, Deltona, FL 32725	28.921	-81.216
	Discovery Elementary - 975 Abagail Dr, Deltona, FL 32725	28.892	-81.250
	Edgewater Public School - 801 S Old County Rd, Edgewater, FL 32132	28.984	-80.907
	Enterprise Elementary - 211 Main St, Enterprise, FL 32725	28.871	-81.266
	Forest Lake Elementary - 1600 Doyle Rd, Deltona, FL 32725	28.874	-81.229
	Freedom Elementary - 1395 S Blue Lake Ave, DeLand, FL 32724	28.994	-81.272
	Friendship Elementary - 2746 Fulford St, Deltona, FL 32738	28.934	-81.188
	Holly Hill School - 1500 Center Ave, Holly Hill, FL 32117	29.249	-81.056
	Horizon Elementary - 4751 Hidden Lake Dr, Port Orange, FL 32129	29.120	-81.039
	Indian River Elementary - 650 Roberts Rd, Edgewater, FL 32141	28.946	-80.891

Attachment: 20._Exhibit_A_-_Technical_Specifications_-_Revisio (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Buildings	Address	Latitude	Longitude
	Longstreet, R. J. Elementary - 2745 S Peninsula Dr, Daytona Beach, FL 32118	29.177	-80.986
	Manatee Cove Elementary - 734 W Ohio Ave, Orange City, FL 32763	28.939	-81.309
	Marks, George W. Elementary - 1000 N Garfield Ave, DeLand, FL 32724	29.046	-81.297
	McInnis, Louise S. Elementary - 5175 US-17, De Leon Springs, FL 32130	29.123	-81.351
	Orange City Elementary - 555 E University Ave, Orange City, FL 32763	28.951	-81.292
	Ormond Beach Elementary - 100 Corbin Ave, Ormond Beach, FL 32174	29.284	-81.058
	Ortona Elementary - 1265 N Grandview Ave, Daytona Beach, FL 32118	29.247	-81.024
	Osceola Elementary - 100 Osceola Ave, Ormond Beach, FL 32176	29.286	-81.039
	Osteen Elementary - 500 Doyle Rd, Osteen, FL 32764	28.855	-81.176
	Palm Terrace Elementary - 1825 Dunn Ave, Daytona Beach, FL 32114	29.198	-81.074
	Pathways Elementary - 2100 Airport Rd, Ormond Beach, FL 32174	29.272	-81.135
	Pierson Elementary - 657 N Center St, Pierson, FL 32180	29.247	-81.464
	Pine Trail Elementary - 300 Airport Rd, Ormond Beach, FL 32174	29.276	-81.114
	Port Orange Elementary - 402 Dunlawton Ave, Port Orange, FL 32127	29.142	-80.992
	Pride Elementary - 1100 Learning Ln, Deltona, FL 32738	28.953	-81.195
	Read-Pattillo Elementary - 400 6th St, New Smyrna Beach, FL 32168	29.010	-80.920
	South Daytona Elementary - 600 Elizabeth Pl, South Daytona, FL 32119	29.169	-81.008
	Spirit Elementary - 1500 Meadowlark Dr, Deltona, FL 32725	28.906	-81.242
	Spruce Creek Elementary - 642 Taylor Rd, Port Orange, FL 32127	29.105	-81.005
	Starke, Edith I. Elementary - 730 S Parsons Ave, DeLand, FL 32720	29.016	-81.309
	Sugar Mill Elementary - 1101 Charles St, Port Orange, FL 32129	29.148	-81.001

Attachment: 20._Exhibit_A_-_Technical_Specifications_-_Revisio (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Buildings	Address	Latitude	Longitude
	Sunrise Elementary - 3155 Phonetia Dr, Deltona, FL 32738	28.882	-81.176
	Sweetwater Elementary - 5800 Victoria Gardens Blvd, Port Orange, FL 32127	29.116	-81.018
	Timbercrest Elementary - 2401 Eustace Ave, Deltona, FL 32725	28.932	-81.231
	Tomoka Elementary - 999 Old Tomoka Rd, Ormond Beach, FL 32174	29.274	-81.091
	Turie T. Small Elementary - 800 South St, Daytona Beach, FL 32114	29.196	-81.027
	Volusia Pines Elementary - 500 E Kicklighter Rd, Lake Helen, FL 32744	28.971	-81.226
	Westside Elementary - 1210 Jimmy Ann Dr, Daytona Beach, FL 32117	29.224	-81.073
	Woodward Avenue Elementary - 1201 S Woodward Ave, DeLand, FL 32720	29.010	-81.331
Middle Schools	Campbell Middle School - 625 S Keech St, Daytona Beach, FL 32114	29.195	-81.032
	Creekside Middle School - 6801 Airport Rd, Port Orange, FL 32128	29.066	-81.041
	DeLand Middle School - 1400 Aquarius Ave, DeLand, FL 32724	29.005	-81.297
	Deltona Middle School - 250 Enterprise Rd, Deltona, FL 32725	28.879	-81.273
	Galaxy Middle School - 2400 Eustace Ave, Deltona, FL 32725	28.930	-81.231
	Heritage Middle School - 1001 Parnell Ct, Deltona, FL 32738	28.892	-81.173
	Hinson Middle School - 1860 N Clyde Morris Blvd, Daytona Beach, FL 32117	29.240	-81.094
	Holly Hill School - 1500 Center Ave, Holly Hill, FL 32117	29.249	-81.056
	New Smyrna Beach Middle School - 1200 S Myrtle Ave, New Smyrna Beach, FL 32168	29.005	-80.923
	Ormond Beach Middle School - 151 Domicilio Ave, Ormond Beach, FL 32174	29.309	-81.071
	River Springs Middle School - 900 W Ohio Ave, Orange City, FL 32763	28.940	-81.312
	Silver Sands Middle School - 1300 Herbert St, Port Orange, FL 32129	29.132	-81.017

Attachment: 20._Exhibit_A_-_Technical_Specifications_-_Revisio (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Buildings	Address	Latitude	Longitude
	Southwestern Middle School - 605 New Hampshire Ave, DeLand, FL 32720	29.009	-81.314
High Schools	Atlantic High School - 1250 Reed Canal Rd, Port Orange, FL 32129	29.149	-81.027
	DeLand High School - 800 N Hill Ave, DeLand, FL 32724	29.040	-81.283
	Deltona High School - 100 Wolf Pack Run, Deltona, FL 32725	28.947	-81.246
	Mainland High School - 1255 W International Speedway Blvd, Daytona Beach, FL 32114	29.198	-81.053
	New Smyrna Beach High School - 1015 10th St, New Smyrna Beach, FL 32168	29.003	-80.930
	Pine Ridge High School - 926 Howland Blvd, Deltona, FL 32738	28.888	-81.163
	Seabreeze High School - 2700 N Oleander Ave, Daytona Beach, FL 32118	29.266	-81.030
	Spruce Creek High School - 801 Taylor Rd, Port Orange, FL 32127	29.110	-81.015
	Taylor, T. Dewitt Middle-High School - 100 E Washington Ave, Pierson, FL 32180	29.248	-81.458
	University High School - 1000 W Rhode Island Ave, Orange City, FL 32763	28.932	-81.314

Attachment: 20._Exhibit_A_-_Technical_Specifications_-_Revisio (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

APPENDIX G: END OF MANUFACTURE AND END OF PRODUCT SUPPORT

The Contractor shall provide a list of any known End of Manufacture and End of Product Support for each equipment provided as part of this proposal.

Part Name	Part Number	Description	Product Release Date	End of Manufacture Date	End of Product Support Date	Life Cycle Period

Attachment: 20._Exhibit_A_-_Technical_Specifications_-_Revisio (2022-R-8 : Purchase of a P25 Radio

Volusia County
FLORIDA

BUDGET AND ADMINISTRATIVE SERVICES
Purchasing and Contracts
123 West Indiana Avenue • Room 302 • DeLand, FL 32720-4608
Phone: 386-736-5935 • Fax: 386-736-5972
e-mail: purchasing@volusia.org • www.volusia.org

November 14, 2019

Subject: ADDENDUM NO. 5 to RFP No. 19-P-153JRD, "P25 Compliant Radio System"

This addendum is being issued to clarify questions and make changes to the Request for Proposals (RFP). This document and all changes, as listed below, shall become an integral part of the RFP and shall take precedence over what was previously stated in the RFP document.

Questions and Answers

Q1: **14.1.C and 14.1.D.j, Exhibit A Page 14-1: Our question is specific to answer #49 in Addendum #3 which states that "the County plans to convert all T1 services on the Legacy EDACS network to IP." This appears to be in conflict with the RFP Exhibit A requirement 14.1.C "The backhaul network and MPLS system shall be capable and configured to support the County's current T1 circuits that support the EDACS analog and E&M circuits" as well as 14.1.J.d "Provide native Ethernet and TDM protocols to support the County's legacy T1 circuits and channel banks linking the current EDACS system." We assume Addendum 3 supersedes the original RFP requirement.**
Please clarify the vendor's requirements specific to the legacy T1circuits.

A1: Addendum 3 supersedes the requirements listed in 14.1.c and 14.1.d regarding support for existing analog circuits in the RFP. It is the intent of the County to convert any required legacy analog circuits to IP at the cutover.

Q2: **14.2.C and 14.2.F., Exhibit A Page 14-4: Answer #78 in Addendum #3 indicates that the County will utilize the DC power available in the shelter. This appears to conflict with the requirements in Exhibit A Sections 14.2.C and 14.2.F. We assume Addendum 3 supersedes the original RFP requirement.**
Please clarify the vendor's requirements specific to providing DC power at the CR304 site.

A2: DC power will be provided by the existing DC plant at the CR304 site.

Q3: **5.3.5 Table 9, Exhibit A Page 5-38: In accordance with Table A-1 from publication TSB-88.1-E; BER for P25 Phase 2 to achieve DAQ 3.4 should be 2.4% outbound/2.6% inbound. Table 9 only references the figure of 2.4%. We assume this should reflect 2.4% outbound/2.6% inbound.**
Please confirm the BER percentages for Table 9.

A3: The TDMA BER requirement for DAQ 3.4 is 2.4% outbound and 2.6% inbound.

Q4: **7.3.4 Table 17, Exhibit A Page 7-2: The EVAC site appears to be missing from the table of VHF antenna heights.**
Please advise the height at which the EVAC VHF antenna should be installed.

A4: The antenna should be installed on the North leg at 240 feet.

Attachment: 21._Addendum_5 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

Q5: **7.3.4 Table 18, Exhibit A Page 7-3: The RMACS receive antenna height for Port Orange is stated as "EDACS Rx MC."**
Should we take this to mean "P25 Rx MC" or in other words that the RMACS system will not have its own antenna at this site, but will derive its receive signal from the P25 receive antenna and multicoupler?

A5: Currently at the Port Orange site there is only a TAC 3 repeater. The receive for this is picked off the Multicoupler from the EDACS system.

Q6: **7.3.4 Table 18, Exhibit A Page 7-3: The RMACS receive antenna height for EOC-B is stated as "None".**
Should we take this to mean that the RMACS system will derive its receive signal from the P25 receive antenna and multicoupler, at this site?

A6: The only RMACS at this site is the Hail Ch. 8TAC90. The Tx is the inverted DB-812 at 300' and the Rx is being picked off the EDACS system Rx multicoupler.

Q7: **5.9.1, Exhibit A Page 5-44: Q: Please advise the heights to be used for the PSIC transmit and receive antennas.**

A7: The antenna heights and site parameters will be what they are today. The 5 ch. site will just be re-named PSIC.

Q8: **RFP Page 41 of 68: With regard to the proposal page limitations: "Submittals shall be limited to 1000 single-sided pages with text in no smaller than twelve (12) point font, Arial preferred. Marketing materials or data sheets may be submitted in a separate binder(s) and have no page limit".**
Is it correct to assume that specifically requested technical attachments (Coverage Maps, P25 Compliance Assessment Testing Detail, etc.) would fall under the category of data sheets? Is it also correct to assume that the RFP exhibits such as Requirements Matrix, Pricing Sheets and required forms are also excluded from the page count limitation?

A8: Coverage maps, P25 Compliance Assessment Detail, the Requirements Matrix, Pricing Sheets and required forms are part of the 1000 single-sided page submittals.

Q9: **11.3.C, Exhibit A Page 11-3: Q: For purposes of this proposal, should vendors assume that no venting facilities or special battery rooms are required?**

A9: Exhibit A, Section 11.3.C of the RFP states that the battery technology deployed for the DC power systems shall not require venting.

Q10: **Addendum #3, Question #61: Q: In reference to Q61 and A61. Please confirm that the vendors can assume that the grounding systems at all existing sites do not need to be upgraded.**

A10: The grounding systems at all sites do not need to be upgraded unless they do not meet the grounding specification of the responding vendor.

Attachment: 21._Addendum_5 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

Q11: Addendum 4 did not provide a specific frequency for the FSA channel to operate on, beyond confirming it will be in the 800 MHz band. Does the County already have a specific frequency identified for the new 800 MHz FSA channel and are you able to advise what that is? If not, does the County intend to engage a search firm to seek a suitable frequency, or will this effort be the responsibility of the Contractor?

A11: In our previous frequency search, we identified 858.0875 as a potential frequency to support FSA in Volusia County. It shall be the responsibility of the Contractor to locate and license a usable channel for the 800 MHz FSA system.

Q12: Can we obtain a cleaner version of the geo report that is published in Appendix E – Farmton Tower Site Soil Boring of Exhibit A – Technical Specifications? When we print the PDF it is barely readable.

A12: The Report of Geotechnical Data has been attached to this Addendum in its original form.

Please sign and attach this addendum to your proposal submittal. If you have any questions regarding this information, please contact John Duckworth, Procurement Analyst II, at 386-822-5792 or jduckworth@volusia.org.

Pamela Wilsky, CPPO, CPPB
Activity Project Manager

PW:jrd

Please sign and return with proposal for 19-P-153JRD, "P25 Compliant Radio System"

Vendor: _____

Signed by (*Name/Position*): _____

Phone No.: _____ Date: _____

FAILURE TO RETURN THIS ENTIRE ADDENDUM WITH THE SUBMITTAL MAY CAUSE THE SUBMISSION TO BE RENDERED **NON-RESPONSIVE**.

Attachment: 21._Addendum_5 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

BECHTOL ENGINEERING AND TESTING, inc.

May 31, 2019
BET Project No. G19038

TO: Ms. Laura E. Laser
Volusia County Engineering & Construction
123 West Indiana Avenue, Room 402
DeLand, Florida 32720

RE: Report of Geotechnical Data
Farmton Tower Relocate
Maytown Road
Parcel No. 943000000071
Oak Hill, Volusia County, Florida

Dear Ms. Laser:

As requested, Bechtol Engineering and Testing, Inc. (BET) has completed geotechnical services at the above referenced site. The purpose of BET's study was to evaluate physical and strength characteristics of subsurface materials encountered by test borings within the area of proposed drilled shaft foundations.

In order to evaluate the physical and strength characteristics of the site's shallow subsurface soils, BET advanced one (1) Standard Penetration Test (SPT) boring (ASTM D1586) to depth of 50 feet below existing ground surface. Approximate location of the boring is shown on the Boring Location Plan presented on the attached Figure 1. Encountered subsurface conditions are presented in the form of Soil Profiles, also on Figure 1. Additionally, suggested soil parameters are tabulated on Figure 1 to aid the design-build contractor in the design and construction of drilled shaft foundation support systems.

BET appreciates the opportunity to be of service, and trusts the attached geotechnical data is sufficient for your needs. However, if you should have any questions, or if BET may be of further service, please do not hesitate to call.

Respectfully,

Bechtol Engineering and Testing, Inc.
Certificate of Authorization No. 00005492

L. Patel

Love B. Patel
Project Engineer

Thomas Bechtol, P.E.
President / Principal Engineer
Thomas Bechtol, P.E., State of Florida, Professional Engineer, License No. 38538
This item has been digitally signed and sealed by Thomas Bechtol, P.E. on the date indicated here.
Printed copies of this document are not considered signed and sealed, and the signature must be verified on any electronic copies.

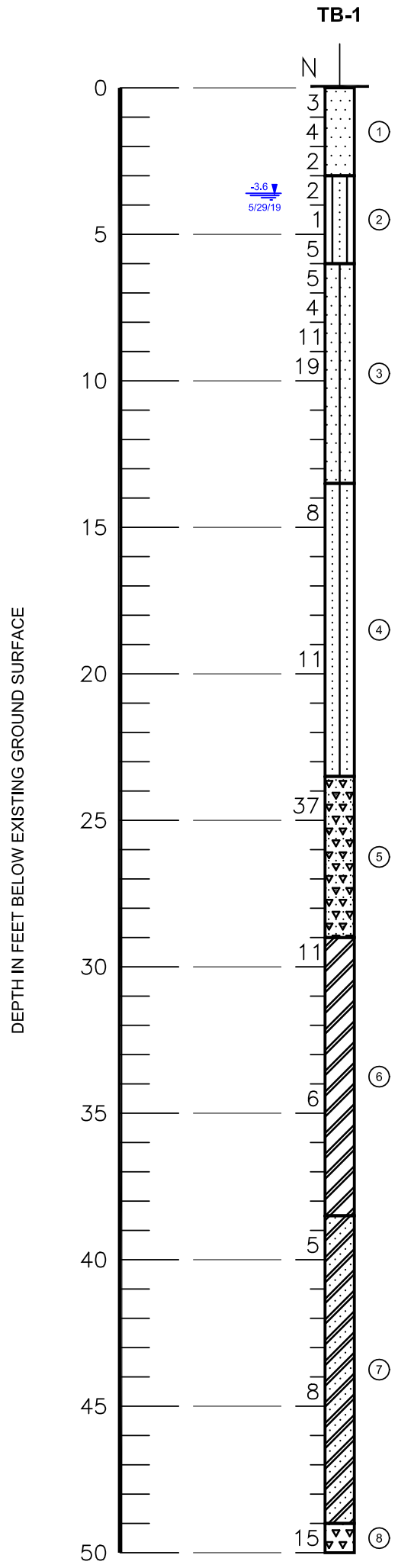
Attachment: 21._Addendum_5 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

BORING LOCATION PLAN

SCALE: 1" = 100'

SOIL PROFILES

VERTICAL SCALE: 1" = 5'



SOIL & SYMBOL LEGEND

1	DARK GRAY-BROWN TO LIGHT GRAY-BROWN SLIGHTLY SILTY FINE SAND, SOME WITH SLIGHTLY CEMENTED SANDS, (SP-SM), VERY LOOSE
2	DARK BROWN TO BROWN SLIGHTLY SILTY FINE SAND, (SP-SM), VERY LOOSE TO LOOSE
3	REDDISH-BROWN TO BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND, (SP), (SP-SM), LOOSE TO MEDIUM DENSE
4	LIGHT BROWN TO BROWN SLIGHTLY SILTY FINE SAND, (SP-SM), LOOSE TO MEDIUM DENSE
5	GRAY AND LIGHT GRAY-BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND, SOME WITH SHELL FRAGMENTS, (SP), (SP-SM), DENSE
6	DARK GRAY SLIGHTLY SANDY CLAY, WITH TRACE SHELL FRAGMENTS, (CH), MEDIUM TO FIRM
7	GRAY SILTY CLAY, WITH TRACE SHELL FRAGMENTS, (CL), MEDIUM
8	GRAY SLIGHTLY SILTY TO SLIGHTLY CLAYEY FINE SAND, WITH SHELL FRAGMENTS, (SP-SM), (SP-SC), MEDIUM DENSE
(SP)	UNIFIED SOIL CLASSIFICATION GROUP SYMBOL AS DETERMINED BY VISUAL EXAMINATION
-3.6 5/29/19	GROUNDWATER LEVEL, REFERENCED IN FEET TO EXISTING GROUND SURFACE, DATE OF READING
N	STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT
	APPROXIMATE LOCATION OF STANDARD PENETRATION TEST BORING

SUGGESTED SOIL PARAMETERS

DEPTH (ft)	UNIT WEIGHT - γ (pcf)	FRICTION ANGLE - φ (degrees)	COHESION - c (ksf)	MODULUS OF SUBGRADE - K (pci)	STRAIN AT 50% STRESS - e50 (in./in.)	RELATIVE DENSITY (%)
0 to 2	103	28	0.00	6	NA	13
2 to 8	41	28	0.00	7	NA	13
8 to 13.5	54	34	0.00	39	NA	39
13.5 to 23.5	51	33	0.00	29	NA	32
23.5 to 29	60	37	0.00	78	NA	59
29 to 49	56	0	0.61	91	1	NA
49 to 50	57	35	0.00	50	NA	45

BECHTOL ENGINEERING AND TESTING, inc.
CONSULTING GEOTECHNICAL, ENVIRONMENTAL, AND MATERIALS TESTING ENGINEERS
Certificate of Authorization No. 00005492

SUPPLEMENTAL GEOTECHNICAL SERVICES

FARMTON TOWER RELOCATE

MAYTOWN ROAD
OAK HILL, FLORIDA

FIELD:	CT BS	DATE:	5/29/19
DRAWN:	LP	SCALE:	NOTED
CHECKED:	LP	PROJ. NO.:	G19038
APPROVED:	TB		FIGURE 1

Attachment: 21._Addendum_5 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

BUDGET AND ADMINISTRATIVE SERVICES
Purchasing and Contracts
123 West Indiana Avenue • Room 302 • DeLand, FL 32720-4608
Phone: 386-736-5935 • Fax: 386-736-5972
e-mail: purchasing@volusia.org • www.volusia.org

November 27, 2019

Subject: ADDENDUM NO. 6 to RFP No. 19-P-153JRD, "P25 Compliant Radio System"

This addendum is being issued to clarify questions and make changes to the Request for Proposals (RFP). This document and all changes, as listed below, shall become an integral part of the RFP and shall take precedence over what was previously stated in the RFP document.

Questions and Answers

Q1: In Addenda 4, Exhibit A - Technical Specifications, Table 10 was updated and replaced. Can the County please provide a new Exhibit A.2 – Supplemental Forms excel document with these changes?

A1: Table 10 has been updated in Exhibit A.2 – Supplemental Forms Revision 1. Exhibit A.2 – Supplemental Forms Revision 1 has been posted. Respondents shall use the revised document when preparing their submittal. Failure to submit Exhibit A.2 – Supplemental Forms Revision 1 may cause the submittal to be deemed non-responsive.

Q2: In the excel document Exhibit Radio A.1 - Requirements Matrix on the Warranty and Extended Maintenance Sheet in section 19.5 the following statement is made. Please clarify if this a requirement?
"Purchasing Discuss verbiage – this should be in general requirements and be required at contract signing. Need to discuss what County needs to be legally binding for support of project and for on-going warranty/maintenance."

A2: The quoted statement has been removed in Exhibit A.1 – Requirements Matrix Revision 1. Exhibit A.1 – Requirements Matrix Revision 1 has been posted. Respondents shall use the revised document when preparing their submittal. Failure to submit Exhibit A.1 – Requirements Matrix Revision 1 may cause the submittal to be deemed non-responsive.

Q3: Section 13.16.1, Type 1 Primary IEEE Category C AC Power SPD - Are these units required for all sites or only the new sites?

A3: The units shall be required only for the two new sites. The existing sites already have them**.**

Q4: Section 13.16.2, Type 1 Secondary IEEE Category C AC Power SPD - Are these units required for all sites or only the new sites?

A4: The units shall be required only for the two new sites. The existing sites already have them.

Q5: Section 13.16.3, Tower Light Controller SPD - Are these units required for all sites or only the new sites? The Advanced Protection Technologies (APT) TWL Series model is not listed, is there a substitute the County would recommend?

A5: These units shall be required only at the Farmton site. The existing sites already have them including Plantation Bay.

Attachment: 22._Addendum_6 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

Q6: Exhibit A - Section 5.3.3 Table 8, the County specifies the antenna heights for each of the sites. Exhibit A - Section 10.2, the County states that it will be responsible for the frequency plan and FCC licensing.

Q: Please furnish the transmit antenna model and effective radiated power (ERP) that will be licensed by the County.

A6: The antenna heights specified in Table 8 are to be used for "system engineering purposes" so that proposers will use the same height parameters for their coverage design. The actual heights available may be slightly different due to availability of real estate on the tower. As for Section 10.2, the following text is from Section 10.2: A. The County will be responsible for the development of the 800 MHz frequency plan and for the initial coordination and licensing of the frequencies. B. The County will obtain the FCC licenses for all sites and frequencies using the antenna heights and a default set of technical parameters for antennas, emissions, transmitter power, and effective radiated power. C. The Contractor shall be responsible for any and all modifications to the County licenses including frequency coordination, engineering documentation, submittals, FCC applications and filings, waivers, etc. for the licensing of the Contractor's final communications system design. D. The Contractor shall be responsible for any and all frequencies and licensing work that is not in the County's frequency plan detailed in Tables 2 through 5 as required in this RFP. E. The Contractor shall be responsible for any and all fees levied by the frequency coordinators.

Q7: Exhibit A - Sections 5.8 and 5.9 request an 8-mile coverage radius around the DeBary site for the PSIC channels.

Q: The current FCC license (WQWE318) is conditioned upon the use of directional 65-degree beam-width panel antennas pointed toward Volusia County, commensurate with the Region 9 Plan that does not allow Volusia's NPSPAC channels to propagate more than 3 miles beyond Volusia County without a waiver from Florida Region Committee. The DeBary site is itself 2 miles into Seminole County, and an 8-mile radius would create a coverage footprint impacting Seminole, Lake and Orange Counties. Does the County intend to apply for a waiver and should the Contractor design for omni antenna radial coverage from this site, on the assumption that such a waiver will be granted?

A7: The Contractor should not assume that a waiver will be granted and propose an antenna configuration that will provide the best coverage for DeBary and southwest area of Volusia County. PSIC coverage should be provided in Volusia County only.

Q8: It is clear that 11 control stations are to be quoted for the Backup Dispatch site at 59 Keyton Drive. However, a quantity of 11 control stations is found in two places in the Pricing Sheets: once in Table 1.13 (page 14) and again in Table 1.54 (page 55).

Question: Is the second appearance intended for a different application, and the quantity of 11 units just coincidental, or were these entries mistakenly duplicated?"

A8: Table 1.13 details control stations located at 59 Keyton. Table 1.54 details control stations located in City Police departments.

Q9: Is it the County's expectation that in lieu of submitting executed Performance and Payment Bonds the vendor should provide a statement that the performance bonds will be provided at the time of contract execution? Can the County provide the required form for the Payment Bonds?

A9: The Respondent shall include, as part of their submittal, a statement confirming that the required Performance and Payment Bonds shall be provided at time of contract execution. Section 15 –

Attachment: 22._Addendum_6 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

Performance Bond – Project and Section 16 – Performance Bond – Tower Construction have been updated in RFP document 19-P-153JRD, P25 Compliant Radio System – Revision 1. Samples of the Payment/Performance Bond forms have been provided in the updated Section 15 & Section 16.

Please sign and attach this addendum to your proposal submittal. If you have any questions regarding this information, please contact John Duckworth, Procurement Analyst II, at 386-822-5792 or jduckworth@volusia.org.

Pamela Wilsky, CPPO, CPPB
Activity Project Manager

PW:jrd

Please sign and return with proposal for 19-P-153JRD, "P25 Compliant Radio System"

Vendor: _____

Signed by (*Name/Position*): _____

Phone No.: _____ Date: _____

FAILURE TO RETURN THIS ENTIRE ADDENDUM WITH THE SUBMITTAL MAY CAUSE THE SUBMISSION TO BE RENDERED **NON-RESPONSIVE**.

Attachment: 22._Addendum_6 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

REQUEST FOR PROPOSAL

FOR

P25 Compliant Radio System

RFP NO. 19-P-153JRD

Revision 1

Closing Date: Wednesday, January 15, 2020

DO NOT RESPOND TO THIS SOLICITATION ON LINE
SEE SECTION 3.4, *DELIVERY OF PROPOSALS*

Purpose of RFP

The purpose of this Request for Proposal (RFP) is to solicit competitive sealed proposals for P25 Compliant Radio System for the County of Volusia, Florida.

Attachment: 25._19-P-153JRD,_P25_Complaint_Radio_System_-_Revi (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

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RFP 19-P-153JRD

P25 COMPLIANT RADIO SYSTEM

1.0 PROJECT INTRODUCTION

A. The purpose of this Request for Proposals (RFP) is to solicit competitive sealed proposals for a technically advanced, value-conscious partner to modernize Volusia County's public safety land mobile radio system and to help integrate current and future broadband technologies into its public safety communications system.

B. First Responders are encountering a diverse set of challenges that are accelerating, fast moving, and compressing the need for the capabilities of a modern wireless broadband network. Specialized public safety-based applications like data intensive criminal justice applications, transmission of video and text location technology, messages for emergency and management purposes, and drone technology are a few of the drivers that are creating the need for much more than the capabilities found in the traditional land mobile radio network.

C. The first step toward this future communication system is detailed and requested in this RFP. Volusia County intends to modernize the current thirteen (13) site Harris radio system to a Project 25 (P25) trunked simulcast radio system that dynamically supports P25 Phase 1 and Phase 2 radio communications.

D. The County plans to replace its legacy microwave system with a modern MPLS-based microwave system.

E. The County intends to expand the radio system to include two new radio towers. One tower will be a partnership with Flagler County to be located at 1250 Old Dixie Highway, Bunnell, 32174 and the second tower, the construction of which is included as part of the scope of this RFP, will be located at 3757 Maytown Road, Oak Hill, 32759 in the southern part of the County. These towers will improve coverage in the northeast and southern areas of the County.

F. The County recognizes that P25 is not a broadband technology that provides high speed communication or capacity to integrate data, video, voice, and the public safety applications being envisioned today, on a single network. The capabilities and features of smartphones built into modern cellular networks are only marginally included in P25 vendor offerings. P25 is an upgrade to the County's current public safety wireless communication system and is a step to avoid the obsolescence of its land mobile radio system and to enhance the reliability of its communication system.

G. The Federal government has set a direction to provide public safety agencies with a modern mission critical broadband-based network by allocating frequency and funds toward the use of AT&T's nationwide "FirstNet" network. Many of the standards necessary for this to technically happen are still in development. Insights regarding the capacity levels, network hardening, coverage, and project timelines are yet to be disclosed. The use of FirstNet as a principal emergency dispatch and First Responder

Attachment: 25._19-P-153JRD,_P25_Complaint_Radio_System_-_Revi (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

network at the local government level with its many agencies may be realistic in the future as FirstNet matures, but it still appears several years off for the Volusia County area. It is critical that the County's public safety land mobile radio be upgraded to a modern P25 system now to ensure the continued reliability of public safety communication.

H. Volusia County is looking for a partner that has broad and diverse experience developing multiple communications technologies, such a satellite, terrestrial IP-based networks, wireless broadband/LTE networks, mobile networks, specialized public safety applications, and large scale public safety government networks. A vendor who can integrate its P25 radio network with multiple LTE-based carriers will improve the competitive cellular carrier environment for public safety. The technology cross-pollination that results from this kind of experience will provide First Responders with better public safety communication products that have value-conscious, value-added features now and in the future.

1.1 OVERVIEW

A. The County desires to:

1. upgrade the current 800 MHz proprietary communication system with a new state-of-the-art, Association of Public Safety Communications Officials (APCO) Project 25 (P25) communication system that dynamically supports both P25 Phase 1 and Phase 2;

2. maintain a high level of system reliability through the implementation of geo-redundant core and control point sites;

3. implement a ring topology for the new IP-based microwave backhaul network;

4. implement a P25 Phase 2 technology system to accommodate the increasing demand for radio traffic capacity, and the anticipated FCC mandates for increased radio spectrum efficiency;

5. improve radio coverage outdoors and within buildings, and has identified four (4) area polygons within the County where additional signal margins are required to overcome specific building losses;

6. to maintain interoperability with agencies that use Florida Interoperability Network (FIN), Mutual Aid channels, and VHF frequencies;

7. improve interoperability with agencies from surrounding counties such as Flagler, Seminole, Brevard, and Lake County through the implementation of a P25 open standard communication system architecture;

8. expand the availability of communication system options such as encryption, location services, over-the-air programming, and over-the-air rekeying of encryption keys.

Attachment: 25._19-P-153JRD,_P25_Complaint_Radio_System_-_Revi (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

B. The County must maintain the operation of their analog paging and fire station alerting (FSA) system when they upgrade to P25.

2.0 SCOPE OF WORK AND EXHIBITS

The Contractor acknowledges receipt of all exhibits upon submission of a signed Proposal Submittal Form with the response documents. The Contractor shall complete and return the appropriate exhibits with the submittal response.

A. Exhibit A – Technical Specifications

The P25 Compliant Radio System requirements are detailed in Exhibit A – Technical Specifications.

B. Exhibit A.1 – Requirements Matrix

The Contractor shall complete and return Exhibit A.1 – Requirements Matrix with submittal response.

C. Exhibit A.2 – Supplemental Forms

The Contractor shall complete and return Exhibit A.2 – Supplemental Forms with submittal response.

D. Exhibit A.3 – County Computing Security Procedures

The Contractor acknowledges receipt of and agrees to the County Computing Security Procedures upon submission of a signed Proposal Submittal Form with the response documents. The County Computing Security Procedures, as amended, are located at www.volusia.org/purchasing.

E. Exhibit A.4 – Technical Infrastructure Standards

The Contractor acknowledges receipt of the County's Technical Infrastructure upon submission of a signed Proposal Form with the response documents.

F. Exhibit A.5 – Technology Systems Design and Installation Guidelines

The Contractor agrees to the County's Technology Systems Design and Installation Guidelines (Division 27) upon submission of a signed Section 5.0, Proposal Form, with the response documents.

G. Exhibit B – Pricing Sheets

The Contractor shall complete and return the Pricing Sheets with submittal response.

Attachment: 25._19-P-153JRD,_P25_Complaint_Radio_System_-_Revi (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

H. Exhibit C.1 – Insurance requirements – Equipment

The Contractor acknowledges receipt of and agrees to the County's Insurance Requirements for equipment/equipment maintenance upon submission of a signed Proposal Form with the response documents.

I. Exhibit C.2 – Insurance Requirements – Tower Construction

The Contractor acknowledges receipt of and agrees to the County's Insurance Requirements for tower construction upon submission of a signed Proposal Form with the response documents.

J. Exhibit C.3 – Insurance Requirements – Tower Maintenance

The Contractor acknowledges receipt of and agrees to the County's Insurance Requirements for tower maintenance upon submission of a signed Proposal Form with the response documents.

3.0 GENERAL TERMS & CONDITIONS

3.1 Definitions

As used in this RFP, the following terms shall have the meanings set forth below:

Agreement: The document resulting from this solicitation between the County and the awarded Respondent, including this RFP, and the awarded Respondent's response along with any written addenda and other written documents, which are expressly incorporated by reference.

Contractor: That person or entity duly authorized, upon award of a contract, to have a Contract with the County to provide the product and/or services set forth herein and incurring liability for the same.

Contract Administrator: The. Director of Purchasing and Contracts or designee shall serve as Contract Administrator. The Contract Administrator shall be responsible for addressing any concerns within the scope of the Contract. Any changes to the resulting Contract shall be done in writing and authorized by the Director of Purchasing and Contracts.

County: Shall mean the County of Volusia (a body corporate and politic and a subdivision of the State of Florida) including its districts, authorities, separate units of government established by law, ordinance or resolution, partners, elected and non-elected officials, employees, agents, volunteers, and any party with whom the County has agreed by contract to provide additional insured status.

County's Project Manager(s): The Project Manager(s) have responsibility for the day to day administration of the resulting Contract for the County and will be designated prior to award of Contract.

Attachment: 25._19-P-153JRD,_P25_Complaint_Radio_System_-_Revi (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Critical Problem: A problem that prevents the System from operating in a production environment and/or affects the integrity of the data and for which no workarounds exist which would enable the System to be used in a production environment and ensure data integrity.

Day: The word "day" means each calendar day or accumulation of calendar days.

Director: The Director is the Director of Purchasing and Contracts for the County of Volusia.

Documentation: The organized collection of information that describes the structure, purpose, operation, maintenance, and data requirements for the functionality specified for the software, hardware, and services in the Scope of Work.

Hardware: Physical equipment with a purpose to facilitate electronic functions, store data, display data, process computer instructions, and direct communications.

Hardware & Software Warranty: A warranty provided by the Contractor covering the Hardware and Software provided by Contractor, and the Hardware specified by Contractor and provided by the County for the System, ensuring that all of the aforementioned shall perform in accordance with all system and application specifications in the Scope of Work for the Contract term begins after Final System Acceptance such that no other Hardware or Software is required to be purchased or installed by the County to achieve or maintain such functionality so long as the applicable applications are continuously under maintenance.

Integration: The state of connecting multiple systems with the intent of sharing or transferring data.

Interface: A boundary across which two independent systems meet and act on or communicate with each other.

Licensed Software: Contractor's licensed and other proprietary Software developed by Contractor and required to operate the System, to be provided by Contractor as part of its Services and pursuant to Scope of Work which includes each computer program or module, application and patent which makes up Contractor's Licensed Software and each copy, translation, update, upgrade, and release, together with any materials related thereto normally provided by Contractor as part of its Services. Contractor's Licensed Software shall be considered Confidential Information to the extent permitted and subject to Chapter 119, F. S. (Florida Public Records Law).

Licensed Technology: Licensed Software and Documentation.

Module: A component of a system.

Non-Critical Problem: A problem that does not materially affect the operation of the System or the integrity of the data/communications in a production environment.

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Person or Persons: An individual, firm, partnership, corporation, association, executor, administrator, trustee or other legal entity, whether singular or plural, masculine or feminine, as the context may require.

Proposal: The document submitted by the Consultant in response to a formal solicitation used to determine if the Consultant is highly qualified.

Protest: See process at www.volusia.org/purchasing.

Respondent: One who submits a response to a request for proposal (RFP).

Respondent's Project Manager: The Project Manager has responsibility for administering this Contract for the Respondent and will be designated prior to execution of the Contract.

Scope of Work (SOW): The term Scope of Work means the work to be performed by the Contractor as stated in the Respondent's response documents to this RFP and a final negotiated Contract, including all exhibits, attachments, Specifications, and materials referenced within the Scope of Work or Scope of Services.

Software: The programs, routines, languages, and/or operating systems that shall provide the functionality specified in the Scope of Work.

Software Escrow Agreement: The method of protecting against software vendor failure. A copy of the Contractor's source code, compiler instructions, file structure, documentation, and any other software required is kept by a trusted third party to ensure that the County will have access to the source code in the event that the Contractor is unable to support the software.

Specification: Technical and/or functional details that provide information on how a requirement shall be addressed by or within a proposed system.

Subcontractor: A person other than a materialman or laborer who enters into an Agreement with a Contractor for the performance of any part of the basic agreement.

System: The solution provided by the Contractor.

State: State of Florida.

Third Party Software: Other software recommended by the Respondent or the County that supplements or interoperates with the Respondent's system (software or hardware) so that the entire system provided by the Respondent operates within the functional specifications and requirements of the Scope of Work.

Turnkey Solution: A complete vendor provided solution that is supplied, installed, and purchased in a condition ready for immediate use, occupation, or operation within a specified time frame.

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3.2 RFP Closing Date

Proposals (also referred to herein as "Submittals," "Offers," or "Responses") must be received by the Volusia County Purchasing and Contracts Office, Room 302, Third Floor, 123 West Indiana Avenue, DeLand, FL, 32720-4608, no later than 3:00 p.m., local time, on Wednesday, January 15, 2020. Proposals received after this time will not be considered.

3.3 Proposed Schedule

09/27/2019 .....Release date for Request for Proposal
10/15/2019 .....Pre-proposal Conference
12/06/2019 .....Final date to receive written questions
12/20/2019 .....Final release date for answers to written questions
01/15/2020 .....Closing Date

3.4 Delivery of Proposals

DO NOT RESPOND TO THIS SOLICITATION ON LINE

All proposals shall be sealed and delivered or mailed to (faxes/e-mails will not be accepted):

County of Volusia, Florida
Purchasing and Contracts Office, Room 302
123 West Indiana Avenue, 3rd floor
DeLand, Florida 32720-4608

Mark package(s) **"RFP # 19-P-153JRD, P25 Compliant Radio System"**

Note: Please ensure that if a third party carrier (Federal Express, UPS, etc.) is used, that the third party is properly instructed to deliver the Bid Submittal **only** to Room 302, in the Purchasing and Contracts Office on the third (3rd) floor at the above address.

Bids mailed to 123 West Indiana Avenue via the United States Postal Service (USPS) are delivered to the Post Office, not to the physical address and, therefore, may not meet the requirements of Section 3.2. To be considered, a Bid must be received and accepted in the Purchasing and Contracts Office before the Bid closing date and time.

3.5 Pre-proposal Conferences and Walk-Through Site Visits - MANDATORY

A. A mandatory pre-proposal conference and walk-through site visits will be held in the Purchasing Conference Room at 123 W. Indiana Avenue, Room 300, DeLand, FL, at 9:00 a.m., EST, on Tuesday, October 15, 2019. Please allow for the site visits to take up to three days, which will begin directly after the pre-proposal meeting on Tuesday, October 15, 2019, and continue on Wednesday, October 16, 2019, and Thursday, October 17, 2019. Interested firms must attend the pre-proposal conference and walk-through visits. A sign-in sheet will be maintained.

B. NOTE: No other walk-through site visits have been scheduled. Additionally, the County of Volusia reserves the right to add an additional mandatory pre-proposal meeting, if the County deems it necessary.

C. A representative of the firm must attend the mandatory pre-proposal conference and walk-through site visits in their entirety in order to respond to the RFP. Proposals received from firms not documented on the sign-in sheets may be deemed non-responsive and may not be considered by the County. A pre-proposal sign-in sheet will be available to record attendance of the firms.

D. Proper state or federal identification such as a driver's license or passport (picture ID) is required of vendor participants for the mandatory pre-proposal conference and a walk-through site visit. Participants will be required to sign a non-disclosure agreement to protect the secure nature of the information documented of the County's systems.

E. In accordance with the American Disabilities Act and Section 286.26, Florida Statutes, persons with disabilities needing a special accommodation to participate in the proceedings, or an interpreter to participate in any proceedings, should contact the County's ADA Coordinator at 386-248-1760 for assistance, at least two (2) business days before any meeting date.

Assisted listening system receivers are available for the hearing impaired, and can be obtained from the Deputy Clerk by contacting the County's ADA Coordinator at 386-248-1760.

Read the full ADA Notice under The American with Disabilities Act (Title II), at www.volusia.org/core/fileparse.php/4175/urlt/ADANotice.pdf.

Read the County of Volusia Grievance Procedure under The Americans with Disabilities Act (Title II).

3.6 Public RFP Opening

A. Pursuant to Section 119.071, Florida Statutes, Bids or proposals ("responses") and the completed tabulation are exempt from disclosure as a public record until such time as the agency provides notice of an intended decision or until thirty (30) days after opening the Bids, proposals or final replies, whichever is earlier. Names only of firms submitting proposals will be read aloud at the RFP opening. Contact the Purchasing and Contracts Office during regular business hours to inspect responses and the completed tabulation or, to inspect the completed tabulation, go to www.volusia.org/purchasing. The foregoing notwithstanding, if, prior to the County's making responses available for inspection, the County rejects all responses and concurrently provides notice of the County's intent to reissue the solicitation, then the County may avail itself of the exemption for rejected responses set forth in Section 119.071, Florida Statutes, to the extent such exemption may apply.

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B. In accordance with the American Disabilities Act and Section 286.26, Florida Statutes, persons with disabilities needing a special accommodation to participate in the proceedings, or an interpreter to participate in any proceedings, should contact the County's ADA Coordinator at 386-248-1760 for assistance, at least two (2) business days before any meeting date.

Assisted listening system receivers are available for the hearing impaired, and can be obtained from the Deputy Clerk by contacting the County's ADA Coordinator at 386-248-1760.

Read the full ADA Notice under The American with Disabilities Act (Title II), at www.volusia.org/core/fileparse.php/4175/urlt/ADANotice.pdf.

Read the County of Volusia Grievance Procedure under The Americans with Disabilities Act (Title II).

3.7 Public Records Law

Pursuant to section 119.0701(2)(a), Florida Statutes, the County is required to provide Contractor with this statement and establish the following requirements as contractual obligations pursuant to the Agreement:

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT 386-736-5935, purchasing@volusia.org, by mail, Purchasing and Contracts Division, Attn: Public Records Custodian, 123 W. Indiana Ave. RM 302 DeLand, FL 32720.

By entering into this Contract, Contractor acknowledges and agrees that any records maintained, generated, received, or kept in connection with, or related to the performance of services provided under, this Contract are public records subject to the public records disclosure requirements of section 119.07(1), Florida Statutes, and Article I, section 24 of the Florida Constitution. Pursuant to section 119.0701, Florida Statutes, any Contractor entering into a contract for services with the County is required to:

A. Keep and maintain public records required by the County to perform the services and work provided pursuant to this Contract.

B. Upon request from the County's custodian of public records, provide the County with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes, or as otherwise provided by law.

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C. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the Contract term and following completion or termination of the Contract if the Contractor does not transfer the records to the County.

Upon completion or termination of the Contract, transfer, at no cost, to the County all public records in the possession of the Contractor or keep and maintain public records required by the County to perform the service. If the Contractor transfers all public records to the County upon completion or termination of the Contract, the Contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Contractor keeps and maintains public records upon completion or termination of the Contract, the Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the County, upon request from the County's custodian of public records, in a format that is compatible with the information technology systems of the County.

Requests to inspect or copy public records relating to the County's Contract for services must be made directly to the County. If Contractor receives any such request, Contractor shall instruct the requestor to contact the County. If the County does not possess the records requested, the County shall immediately notify the Contractor of such request, and the Contractor must provide the records to the County or otherwise allow the records to be inspected or copied within a reasonable time.

Contractor acknowledges that failure to provide the public records to the County within a reasonable time may be subject to penalties under section 119.10, Florida Statutes. Contractor further agrees not to release any records that are statutorily confidential or otherwise exempt from disclosure without first receiving prior written authorization from the County. Contractor shall indemnify, defend, and hold the County harmless for and against any and all claims, damage awards, and causes of action arising from the Contractor's failure to comply with the public records disclosure requirements of section 119.07(1), Florida Statutes, or by Contractor's failure to maintain public records that are exempt or confidential and exempt from the public records disclosure requirements, including, but not limited to, any third party claims or awards for attorney's fees and costs arising therefrom. Contractor authorizes County to seek declaratory, injunctive, or other appropriate relief against Contractor from a Circuit Court in Volusia County on an expedited basis to enforce the requirements of this section.

3.8 Proposal Form

A. See **Submittal Requirements** for complete details

B. Each Respondent shall submit **fourteen (14)** complete sets of the RFP Submittal:
- **One (1)** hard copy marked "ORIGINAL"
- **Twelve (12)** hard copies marked "COPY"

  Note: It is not necessary to return every page of the original solicitation document with the hard copies of the RFP Submittal ORIGINAL and COPY(ies); return only the pages that require signatures or information as detailed in Section 4.0.

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- **One (1) COMPLETE** electronic copy on a CD or USB drive in PDF format (Excel spreadsheets shall not be recorded in PDF). The electronic copy of the RFP Submittal shall include ALL submittal requirements, as detailed in Section 3.54.

Note the solicitation number and name of company on the CD or USB drive.

Do not send confidential information, proprietary information, or trade secrets.

C. Terms and conditions differing from those in this RFP may be cause for disqualification of the RFP Proposal.

D. The Proposal Form (Section 5.0) shall be signed by an authorized agent of the firm with documentation, such as a Memorandum of Authority, that the individual is authorized to commit the firm to a contract.

E. Failure to provide the required information may result in the proposal not being considered. Submittals shall be clear, concise, indexed by subject, typed on letter size paper, and individually bound. Submittals shall be mailed or delivered in a sealed package clearly marked on the outside with the project name, invitation number, and due date. Packages shall be received in the Volusia County Purchasing Office by the advertised deadline.

3.9 Questions, Exceptions, and Addenda Concerning RFP 19-P-153JRD

A. It is incumbent upon each Respondent to carefully examine this solicitation's specifications, scope of work/service, terms, and conditions. Questions and exceptions concerning any Section of this RFP shall be directed by letter, facsimile transmission, or e-mail to the Procurement Analyst named in item B (below), who shall be the official point of contact for this RFP. Questions and exceptions shall be submitted no later than forty (40) days before the closing date. Thereafter, no further questions or exceptions will be accepted or reviewed by the County and Respondents' right to submit questions or exceptions will terminate and any questions or exceptions not previously made shall be deemed waived. The issuance of a written addendum is the only official method by which interpretation, clarification, or additional information can be given and oral representations will not be binding on the County.

B. Mark cover page or envelope(s) "Questions, Exceptions and Addenda Concerning RFP # 19-P-153JRD, "P25 Compliant Radio System."

Submit questions to:

John Duckworth, Procurement Analyst II
Telephone:.....386-822-5792
Fax: 386-736-5972
E-mail:.....*jduckworth@volusia.org*

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C. If it becomes necessary for the County to revise any part of this RFP, an addendum will be posted on the County's web site. It is each Respondent's responsibility to check the Volusia County web site for any addenda at www.volusia.org/bidlist. Each Respondent should ensure that they have received all addenda to this RFP before submitting their proposal. In their proposals, Respondents must provide proof of receipt of each addendum by signing each addendum and returning each addendum to the County. Failure to provide this proof may cause Respondent's proposal to be rendered *non-responsive*.

D. Each addendum issued by the County shall become a material part of this solicitation and the resulting Contract.

3.10 Award

A. The County reserves the right to award the Contract to the Respondent(s) that the County deems to offer the best overall proposal or solution, as defined in Section 3.29, Evaluation Criteria in this solicitation. The County is therefore not bound to accept a proposal based only on lowest price.

B. In addition, the County has the sole discretion and reserves the right to cancel this RFP, to reject any/all proposals, to waive any/all informalities and/or irregularities, or to re-advertise with either the identical or revised specifications if it is deemed to be in the best interest of the County to do so. Nothing prohibits the County from rejecting and re-soliciting when responses exceed budget and the County must change the solicitation to lower costs.

C. The County also reserves the right to make multiple awards based on experience and/or qualifications of Respondents and to award only a portion of the items and/or services specified, if deemed to be in the County's best interest.

3.11 Award Term

A. The County is looking to promote partnership relationships within the policies and procedures of public procurement. Pursuant toward that end, the successful Respondent(s) shall be awarded a Contract for an initial seventeen (17) year term from system acceptance with subsequent renewals upon mutual agreement.

B. All renewals will be contingent upon mutual and written agreement and, when applicable, approval of County Council.

3.12 Other Agencies

A. All Respondents awarded Contracts from this solicitation shall extend all subscriber equipment pricing to any entity that utilizes the County's 800MHz public safety radio system.

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B. All Respondents awarded Contracts from this solicitation may, upon mutual agreement, permit any municipality or other governmental agency to participate in the Contract under the same prices, terms, and conditions.

C. It is understood that at no time will any city or municipality or other agency be obligated for placing an order for any other city, municipality, or agency, nor will any city, municipality, or agency be obligated for any bills incurred by any other city, municipality, or agency. Further it is understood that each agency will issue its own purchase order to the awarded Respondent(s).

3.13 F.O.B. Point

The F.O.B. points for the Contract and for all purchases made under it shall be as specified by the using department (in accordance with the RFP proposal form), in Volusia County, Florida. Delivery will not be complete until the using department has accepted each item. Delivery to a common carrier shall not constitute delivery to the ordering agency. All disputes shall be between the Seller/Respondent and the carrier.

3.14 Use of County Logo

The County owns and retains all proprietary rights in its logos, trademarks, trade names, and copyrighted images (Intellectual Property). As such, nothing in this solicitation permits or shall be construed as authorizing Respondent to use or display County's Intellectual Property on Respondents submittal documents or proposal (including any exhibits attached thereto) submitted to County by or on behalf of Respondent in response to this solicitation. The County has the right to redact the County Logo displayed on any proposal submitted.

3.15 Assignment

Contractor may not assign or otherwise convey Contractor's rights and/or obligations under this Agreement without obtaining County's prior written consent, which consent County may withhold, limit and/or condition in County's sole discretion, including, but not limited to, requiring the Contractor or his/her proposed successor in interest to post a performance bond. Any consent by the County under this Section shall be by written amendment to the Agreement in a form and substance specified by the County in its sole discretion. If Contractor desires to assign or otherwise convey its rights and/or obligations under this Agreement, Contractor shall no less than thirty (30) days prior to the assignment's proposed effective date, provide County with a written request for County's consent. Failure to provide such notice may result in the County assessing a processing fee of Five Hundred Dollars (US $500.00); however, payment of such fee shall not entitle the Contractor to the County's acceptance or approval of its request for assignment.

Nothing herein shall preclude the right of the County to waive its rights under this Section but no waiver shall be granted by the County without a written and duly executed amendment to the Agreement.

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3.16 Contract

A. The contents of this RFP and all provisions of the successful proposal deemed pertinent by the County may be, at the sole discretion of the County, incorporated into a Contract and become legally binding on the selected proposer. The content of the Contract may contain changes as a result of the RFP process and the content of the submittal received. The Contract shall, at minimum, include the substantive terms and conditions as outlined in the RFP and be subject to review by the County attorney or designee prior to approval and execution for determination of legal form and substantive sufficiency, and may contain those additional terms and conditions that the County deems in its best interest.

B. The Director of Purchasing and Contracts, County Manager, and County Chair are the sole Contracting Officers for the County of Volusia, Florida, and only they or their designees are authorized to make changes to any Contract.

C. The County shall be responsible for only those orders placed by the County on an authorized signed Purchase Order or Master Agreement. The County shall not be responsible for any order, change substitution or any other discrepancy from the Purchase Order or Master Agreement. If there is any question about the authenticity of a Purchase Order, Master Agreement, or change order, the Respondent should promptly contact the Purchasing Office at 386-736-5935.

3.17 Disclosure of Proposal Content

A. All material submitted becomes the property of the County and may be returned only at the County's option. The County has the right to use any or all ideas presented in any reply to this RFP. Selection or rejection of any submittal does not affect this right.

B. The County of Volusia, Florida, is governed by the Public Record Law, Chapter 119, FS, (as amended).

3.18 Respondent's Responsibility

A Respondent, by submitting a proposal, represents that:

A. The Respondent has read and understands the RFP in its entirety and that the proposal is made in accordance therewith;

B. The Respondent possesses the capabilities, resources, and personnel necessary to provide efficient and successful service to the County;

C. Before submitting its proposal, the Respondent has made all investigations and examinations necessary to ascertain site and/or local conditions and requirements affecting the full performance of the Contract and has verified any representations made by the County of Volusia, Florida, upon which the Respondent has relied;

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D. The Respondent understands and agrees that if the Respondent receives an award, failure to have made such investigations pursuant to Respondent's proposal to the RFP will in no way relieve the Respondent from its obligations to comply in every detail with all provisions and requirements of the Contract, nor will a plea of ignorance of such conditions and requirements be accepted as a basis for any claim by the Respondent for additional compensation or relief; and

E. The Respondent understands and accepts that it will be held responsible for any and all discrepancies, errors, etc., in discounts or rebates which are discovered during the Contract term or up to and including three (3) fiscal years following the County's annual audit.

3.19 Debarment

Purpose and Intent. The county endeavors to solicit offers from, award contracts to, and consent to subcontracts with responsible vendors and contractors only. To further this policy, the county asserts its authority to debar certain vendors and contractors from participating in solicitations pursuant to the policies and procedures herein. The serious nature of debarment requires that this sanction be imposed only when it is in the public interest for the county's protection and not for purposes of punishment. Debarment is intended as a remedy in addition to, and not in substitution of, the evaluation of the responsibility of county vendors and contractors, and this policy and the procedures provided for herein shall not supplant or supersede county's authority to reject or otherwise terminate vendors or contractors based on findings of non-responsibility on a case-by-case basis.

Further information regarding the County's policies and procedures in regards to DEBARMENT may be found at:
https://www.volusia.org/core/fileparse.php/5896/urlt/Debarment-Policy-final-3-27-17.pdf

3.20 Payment Terms

A. The County will remit full payment on all undisputed invoices within forty-five (45) days from receipt by the appropriate person(s) (to be designated at time of Contract) of the invoice(s) or receipt of all products or services ordered.

B. Pursuant to Chapter 218, Florida Statutes, the County will pay interest not to exceed one percent (1%) per month on all undisputed invoices not paid within thirty (30) days after the due date.

C. The County has the capabilities of Electronic Fund Transfer (EFT). List any discounts for prompt payment and/or willingness to accept Electronic Funds Transfer (EFT) and the discount to be applied to such payments. Vendors offering prompt payment discounts, for example 1% - net 10, the discount shall be taken if the check issue date is within specified time period from date of invoice.

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D. By submitting a proposal to the County of Volusia, Florida, the Respondents expressly agree that, if awarded a Contract, the County may withhold from any payment monies owed by the Respondent to the County for any legal obligation between the Respondent and the County, including but not limited to real property taxes, personal property taxes, fees, and commissions.

3.21 Conflict of Interest Form

All Respondents shall properly complete, have notarized, and include with their submittal the attached form disclosing any potential conflict of interest that the Respondent may have due to ownership, other clients, Contracts, or interests associated with this project.

3.22 Licenses and Certificates

A. The County reserves the right to require proof that each Respondent is an established business and is abiding by the ordinances, regulation, and laws of its community and the state of Florida, such as but not limited to: Business Tax Receipts, business licenses, Florida sales tax registration, Federal Employers Identification Number; and

B. The Respondent shall be required, upon notification of recommendation of award, to register with the Florida Department of State Division of Corporations at www.sunbiz.org in order to provide services under the resulting Contract.

C. If a license is required, the Respondent shall be licensed to perform the required work in accordance with the laws of the State of Florida and local ordinances. Respondents shall also verify that their Subcontractors are licensed to perform the work in accordance with the laws of the State of Florida and local ordinances.

D. Each Respondent shall submit with their proposal a copy of, and upon award of Contract, the Contractor shall maintain the appropriate licenses and certificates during the term of the Contract and any extensions. Failure to maintain these requirements shall be cause for immediate termination of the Contract.

3.23 Minor Irregularities

The County reserves the right to waive minor irregularities in proposals, providing such action is in the best interest of the County. Minor irregularities are defined as those that have no adverse effect on the County's best interests, and will not affect the outcome of the selection process by giving any Respondent an advantage or benefit not enjoyed by other Respondents.

3.24 Venue and Governing Law

All legal proceedings brought in connection with the Contract executed for the services provided as award under this RFP Contract shall only be brought in a state or federal court located in the State of Florida. Venue in state court shall be in Volusia County, Florida.

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Venue in federal court shall be in the United States District Court, Middle District of Florida, Orlando division. Each Respondent agrees to submit to the personal jurisdiction of these courts for any lawsuits filed there against Respondent. In the event of a legal proceeding, the action shall be by non-jury trial for the adjudication of such suit.

All questions concerning the validity, operation, interpretation, construction and enforcement of any terms, covenants or conditions of this Contract shall in all respects be governed by and determined in accordance with the laws of the State of Florida without giving effect to the choice of law principles thereof and unless otherwise preempted by federal law.

3.25 Insurance

Contractor shall provide the required insurance detailed in Exhibits C.1 – C.3 for the entire Term of the Agreement, as appropriate. Regardless of anything submitted as proof of insurance, Contractor shall comply with all requirements of Exhibit C.1 – C.3.

3.26 Unusual Costs

The Contractor may petition the County at any time for an additional rate adjustment on the basis of extraordinary and unusual changes in the costs of operation that could not reasonably be foreseen by a prudent operator and which, by all reasonable expectations, will continue for at least one (1) year. If the Contractor petitions for such in increase, the Contractor shall also petition for a rate reduction on the basis of extraordinary and unusual changes in the costs of operation that could not reasonably be foreseen by a prudent operator and which, by all reasonable expectations, will continue for at least one (1) year; failure to make such petition may be grounds for Contract termination.

The Contractor's request shall contain substantial proof and justification to support the need for the rate adjustment. The County may request from the Contractor and the Contractor shall provide such further information as may be reasonably necessary in making its determination. The County shall approve or deny the request, in whole or in part, within sixty (60) days of receipt of the request and all other additional information required by the County. Any price redetermination shall be solely based upon the documentation provided and the County reserves the right to rescind any price relief granted should the circumstances change and prices decrease.

3.27 Compliance with Regulations

A. Compliance with FEMA 2 CFR 200.318-326 and Appendix II Contract Provisions

This Agreement and the products/services provided may be utilized in the event of declared State/Federal Emergency and Contractors shall be prepared to comply with the requirements of the FEMA Super Circular CFR 200.318-326 and Appendix II Contract Provisions as amended. These documents can be found on the Internet at:

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https://www.gpo.gov/fdsys/granule/CFR-2014-title2-vol1/CFR-2014-title2-vol1-sec200-318

3.28 Waiver of Claims

Once the Contract expires, or final payment has been requested and made, the Contractor shall have no more than thirty (30) calendar days to present or file any claims against the County concerning the Contract. After that period, the County will consider the Contractor to have waived any right to claims against the County concerning the Contract.

3.29 Evaluation Criteria

Each proposal shall be evaluated using the following criteria:

- Proper timely submittal of ALL documentation in conformance with all requirements of the RFP.

- The Contractor's proposal meets or exceeds the requirements of the RFP and cumulatively provide the service and benefits to the County deemed to be in the best interest of the public. The Evaluation Process may be conducted in two (2) phases.

A. Phase One: This phase shall include the review of the submittals by a County Selected Evaluation Committee using the evaluation criteria. The Evaluation Committee may then short-list for Phase Two. The County reserves the right to request additional information including clarification of any or all information submitted by any Respondent during both phases.

The greatest benefits to the County will be determined based upon the following evaluation criteria:

1. Firm Qualifications [As noted in Tabs 1, 2, 3, 5.5 and 5.6]

   a. Experience in providing similar services / references, including timeliness of performance. In order to evaluate past performance, all proposers (whether an OEM manufacturer or reseller proposing an OEM manufacturer's equipment) are required to submit five (5) references. Four (4) references will need to have used the OEM vendor's P25 technology for a minimum of one (1) years' relevant operational service and have a combination of P25 Phase 1 and Phase 2 radios in daily operation. These four (4) reference's networks must currently support a combination of 3,000 or more P25 Phase 1 and Phase 2 radios in daily operation and must have at least six (6) tower sites. The fifth reference will be a user who has either a P25 Phase 1 or Phase 2 network similar in size to Volusia County's Public Safety Network (thirteen (13) tower sites, 10,000 radios) or greater, and has been in service operation over a year. The

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radios on this reference's network can either be all P25 Phase 1 or Phase 2.

b. Experience in designing and implementing P25 radio systems.

c. Ability to meet timeline and schedule requirements.

d. Availability of sufficient qualified, experienced staff to perform implementation, training, product maintenance and support; adequate organizational structure.

e. Adequate capital resources to maintain and support the services and software product(s) for a preferred seventeen (17) year period.

f. Ability of vendor to implement the technical requirements at contract execution.

g. Qualifications of the firm and the employees that will be assigned to the County project.

h. Organization, scope, clarity, level of detail in the Proposer's RFP submittal.

2. Price Schedules [As noted in Tab 4]

a. Provide completed Pricing Schedules for proposed Scope of Work as presented in Exhibit B.

b. Total cost of equipment and services over the length of contract specified in the RFP based on the initial cost and life cycle analysis.

3. Capabilities of Hardware and Software [As noted in Tabs 5.1, 5.4, and 5.7]

a. The ability of the hardware/software to provide the features defined in Exhibit A.

b. Technological sophistication (state of the art) of the hardware/ software product.

c. Streamlined flow and functionality; ease of use - intuitive functions and tools.

4. Project Understanding and Approach [As noted in Tabs 5.1, 5.2, and 5.7]

a. Quality and detail of the project methodology and approach to support the needs and objectives of the project.

b. Quality and detail of the Project plan.

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c. Proposed timeframe for project completion.

d. Proposed training for County radio staff and radio users.

e. System installation, and implementation plans including degree of anticipated disruption to end user public safety radio communications.

f. Respondent's demonstrated knowledge of County activities.

g. General hardware and software capabilities and required features.

h. Clear understanding of project scope, ability of services/equipment to meet the minimum requirements listed, approach, and underlying assumptions for detailed work plan, scheduling, implementation with minimal interruption of service, along with support and maintenance.

5. Technology [As noted in Tabs 5.1, 5.3, 5.4, and 5.7]

a. Performance, coverage, capability, and versatility of the proposed equipment.

b. Reliability of the proposed equipment.

c. The redundancy (fault tolerance) and disaster recovery aspects of the radio system design.

d. Adherence and support of required P25 standards, specifications, and related TIA standards.

e. Adherence to P25 Interoperability standards.

f. Respondent's use of technology that shall minimize long term County costs and improve communications.

g. Conversion methodology and a thorough understanding of the County's current operations.

6. Warranty and Maintenance Requirements [As noted in Tabs 5.8.]

a. Location of Contractor's service facility in relation to Volusia County and travel time from that facility to all existing tower sites in Volusia County's Public Safety radio network.

b. Length of equipment warranty extended to Volusia County.

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c. Quality of maintenance/service, ability to meet response time goals in the RFP, availability and locations of service parts.

d. Support capabilities of staff and resources available for software/hardware maintenance and support; types and available hours of support services.

7. Financial Stability [As noted in Tab 8]

a. Financial Stability: A Dun and Bradstreet report may be used by the County to evaluate Respondent's financial stability. All Respondents shall be prepared to supply a financial statement upon request, preferably a certified audit of the last available fiscal year.

B. Phase Two: It is anticipated the Evaluation Committee may short-list or request scripted demos from all Respondents. The Respondents will be given a scripted demonstration for presentation. Possible site visits may be scheduled and other information may be required to determine and assist in the selection of which system and Respondent shall be awarded a Contract. The Evaluation Committee shall then meet for a final ranking of the Respondents.

1. Scripted Scenario Demonstrations

a. Respondents may be invited to make presentations to County personnel using scripted scenarios provided by the County.

b. Presentations of scripted scenario demonstrations will be held at a yet to be determined location.

c. Demonstrations will follow a scripted format to ensure a fair evaluation of each proposed solution.

d. The Respondents will be provided with the demonstration scripts in advance of the actual demonstration to ensure ample preparation time.

e. Each Respondent invited to make a presentation will be given the same amount of time to prepare their response.

f. Respondent representative(s) attending these presentations must be qualified to respond to questions related to any section of the proposal, including the systems and the components.

g. The Respondents should be prepared to fully demonstrate any of the system functionality that has been characterized in the response as being currently operating in a production environment.

2. Site Visits – The County reserves the right to request site visits.

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3.30 Presentations by Respondents

A. The County of Volusia, at its sole discretion, may ask individual Respondents to make oral presentations and/or demonstrations without charge to the County.

B. The County reserves the right to require any Respondent to demonstrate to the satisfaction of the County that the Respondent has the fiscal and managerial abilities to properly furnish the services proposed and required to fulfill the requirements of the RFP. The demonstration must satisfy the County and the County shall be the sole judge of compliance.

C. Respondents are cautioned not to assume that presentations will be required and should include all pertinent and required information in their original proposal package.

3.31 Post-Proposal Discussions with Respondents

It is the County's intent to award a Contract(s) to the Respondent(s) deemed most advantageous to the County in accordance with the evaluation criteria specified in this RFP. The County reserves the right, however, to conduct post-closing discussions with any Respondent who has a realistic possibility of Contract award including, but not limited to, requests for additional information and competitive negotiations.

3.32 Termination

A. The resulting Contract may be terminated by either party upon the material breach by the other party if such breach is not cured within thirty (30) days written notice from the non-breaching party.

B. County may terminate the resulting Contract for convenience or non-appropriation upon at least thirty (30) calendar days' prior written notice to Contractor.

C. The Contractor may cancel the resulting Contract with three-hundred sixty-four (364) days written notice to the Director of Purchasing and Contracts. Failure to provide proper notice to the County may result in the Contractor being barred from future business with the County.

D. After Contractor's receipt of a notice of termination pursuant to Paragraph A above (or to the extent Contractor has not cured a material breach within thirty (30) days notice from County), and except as otherwise directed by the County, the Contractor shall:

1. Stop work under the Contract or applicable statement of work on the date specified in the notice of termination.

2. Place no further orders or subcontracts for materials, services or facilities.

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3. Terminate all orders and subcontracts to the extent that they relate to the performance of work or services terminated by the notice of termination.

4. With the approval of the County and to the extent required by the County, settle all outstanding liabilities and all claims arising out of such termination of orders and subcontracts. County's approval of such settlements shall be final for all the purposes of Section 3.30, Termination.

E. After receipt of a notice of termination, the Contractor shall submit to the County its termination claim for amounts owed by County (which shall include, without limitation, all amounts due for work or services performed through the date of termination), in the form and with a certification as prescribed by the County. Such claim shall be submitted promptly but in no event later than thirty (30) days from the effective date of termination, unless one or more extensions in writing are granted by the County, upon request of the Contractor made in writing within such thirty (30) days period or authorized extension thereof. Upon failure of the Contractor to submit its termination claim within the time allowed, the County may determine on the basis of information available to it, the amount, if any, due to the Contractor by reason of the termination and shall thereupon pay to the Contractor the amount so determined. In the event County terminates for convenience or non-appropriation, Contractor shall not be obligated to refund to County any prepaid fees.

F. **Non-Appropriation**. The resulting Contract may be terminated by the County or Contractor if the County does not appropriate the funding in any fiscal year necessary to pay the compensation set forth in the Article entitled Compensation in the resulting Contract.

G. In the event that the resulting Contract is terminated by the County or Contractor for non-appropriation, Contractor shall be paid in accordance with terms of the Article entitled Compensation in the resulting Contract. Contractor shall be paid (a) to the date of termination on a prorated basis for any task and deliverable designated for payment on the payment milestone schedule that was started but not completed and/or (b) for any work or deliverable that has been completed but not yet been paid. County's obligation to pay Contractor under this Section 3.30, Termination, and the resulting Contract is limited to the budgeted amount for the fiscal year approved by the Volusia County Council for the then current fiscal year of the resulting Contract. Contractor shall have no right to compel the Volusia County Council to appropriate funds for any fiscal year to pay the compensation.

H. Upon being notified of County's election to terminate for default of Contractor, non-appropriation or convenience, Contractor and its Subcontractors shall refrain from performing further work or incurring additional expenses under the terms of the resulting Contract which is not specifically authorized in the notice of termination.

I. If termination of the resulting Contract occurs for any reason:

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1. Except as otherwise provided in the resulting Contract, Contractor shall return to the County, or destroy, all County confidential information in Contractor' possession and shall certify the destruction or return of said information in a written document signed by the duly authorized representative of the Contractor that all such information has been destroyed or returned, provided that Contractor shall be permitted to retain an archival copy of any such confidential information (provided it continues to maintain the confidentiality of such as prescribed herein) to the extent necessary to have a record of the work or service performed hereunder.

2. For all undisputed outstanding invoices submitted to the County for Work completed or deliverables delivered prior to the effective date of the termination, the County shall cause payments to be made to Contractor within forty-five (45) days of receipt of invoice. Contractor shall invoice the County for any sums Contractor claims to be owed by County under the resulting Contract for work performed from the last invoice to the effective date of termination. County shall review such invoice for payment within fifteen (15) days of receipt and County shall pay any undisputed amount within forty-five (45) days, subject to the Article entitled Compensation in the resulting Contract. Any disputed amounts on any invoices shall be subject to the dispute resolution process set forth in the Article entitled Dispute Resolution in the resulting Contract.

J. In the event of termination by the County for non-appropriation, for all items or products ordered by Contractor before receipt by Contractor of the Notice of Termination which Contractor could not cancel without imposition of a fee, the County shall cause payments to be made to Contractor within forty-five (45) days of receipt of an undisputed invoice for all cancellation, restocking or residual fees resulting from the cancellation or return of third party products ordered from or shipped by the vendor thereof prior to the effective date of the termination.

K. In the event Contractor is unable to deliver the system in a manner that enables the System and all of its functional components to pass final acceptance testing, County shall have the right to terminate the Contract and have the right to receive from Contractor a refund of any implementation fees paid through the date of such termination.

3.33 Incurred Expenses

This RFP does not commit the County of Volusia to award a Contract, nor shall the County of Volusia be responsible for any cost or expense which may be incurred by any Respondent in preparing and submitting a proposal in response to this RFP, or any cost or expense incurred by any Respondent prior to the execution of a Contract.

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3.34 Minimum Specifications

The specifications listed in the Scope of Service are the minimum required performance specifications for this RFP. They are not intended to limit competition nor specify any particular Respondent but to ensure that the County receives quality services.

3.35 Compliance with Laws and Regulations

Contractors shall be responsible to know and to apply all applicable federal, state, and local laws, ordinances, rules, regulations (including but not limited to the following statutes: Americans with Disabilities Act (ADA),Titles I, II and III of the ADA; Federal Immigration Reform and Control Act of 1986 (as amended); and Title VII of the Civil Rights Act of 1964 (as amended), and all orders and decrees of bodies or tribunals having jurisdiction or authority which in any manner affect the work, or which in any way affect the conduct of the work. Contractor shall always observe and comply with all such laws, ordinances, rules, regulations, orders, and decrees. The awarded Contractor shall protect and indemnify the County and all its officers, agents, servants, or employees against any claim or liability arising from or based on the violation of any such law, ordinance, rule, regulation, order, or decree caused or committed by Contractor, its representatives, Subcontractors, sub-consultants, professional associates, agents, servants, or employees.

At time of submittal, Contractors must hold the required licensure to be the prime Contractor for all work to be performed under this RFP. If any Contractor proposes to use a Subcontractor or sub-consultant to perform any work under this RFP, such Subcontractor and/or sub-consultant shall, at the time of submittal, hold the required licensure for all work to be performed under this Contract as a Subcontractor and shall maintain such license(s) in full force and effect during the term of the awarded Contract. All licenses and permits required to perform Contractor's duties under this RFP, whether such license or permit is required by the federal government, State of Florida, Volusia County, or any municipality, shall be at each Contractor's sole cost and expense, and shall not be a cost of the County. All required licenses and permits shall be maintained in full force and effect during the term of the awarded Contract.

3.36 Scrutinized Companies-FL Statute Section 287.135 and 215.47

Contractor must certify that the company is not participating in a boycott of Israel. For Contracts for goods or services of one million dollars or more, Contractor must also certify that Contractor is not on the Scrutinized Companies that Boycott Israel List, not on the Scrutinized Companies with Activities in Sudan List, and not on the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or has not been engaged in business operations in Cuba or Syria. Subject to limited exceptions provided in state law. The County will not contract for the provision of goods or services with (i) any company participating in a boycott of Israel, and, (ii) for Contracts for goods or services of one million dollars or more, any other scrutinized company as described above. Contractor must submit the certification form (See Section 14.0). Submitting a false certification shall be deemed a material breach of contract. The County shall provide notice, in writing, to the Contractor of the County's determination concerning the false

certification. The Contractor shall have five (5) Calendar days from receipt of notice to refute the false certification allegation. If such false certification is discovered during the active contract term, the Contractor shall have ninety (90) days following receipt of the notice to respond in writing and demonstrate that the determination of false certification was made in error. If the Contractor does not demonstrate that the County's determination of false certification was made in error then the County shall have the right to terminate the Contract and seek civil remedies pursuant to Section 287.135, Florida Statutes, as amended from time to time.

3.37 Limitation of Liability and Indemnification of County

A. **Indemnification**. The Contractor shall indemnify, defend and hold harmless the County, including its districts, authorities, separate units of government established by law, ordinance or resolution, partners, elected and non-elected officials, employees, agents, volunteers, and any party with whom the County has agreed by contract to provide additional insured status from and against all claims, damages, losses, and expenses, including, but not limited to attorney's fees, arising out of, resulting from, or incident to Contractor's performance of its obligations in whole or part of this Contract, unless such injury or damage is occasioned solely by the fault, negligence, or willful misconduct of the County.

B. In all claims against County, no indemnification obligation shall be limited in any way by any limitation on the amount or type of damages, compensation or any benefits payable by or for Contractor, or its employees, agents, contractors, or subcontractors.

C. **Sovereign Immunity**. County expressly retains all rights, benefits and immunities of sovereign immunity in accordance with Section 768.28, Florida Statutes (as amended). Notwithstanding anything set forth in any Section of this Agreement to the contrary, nothing in this Agreement shall be deemed as a waiver of immunity or limits of liability of the County beyond any statutory limited waiver of immunity or limits of liability which may have been or may be adopted by the Florida Legislature and the cap on the amount and liability of the County for damages, regardless of the number or nature of claims in tort, equity, or contract, shall not exceed the dollar amount set by the legislature for tort. Nothing in this Agreement shall inure to the benefit of any third party for the purpose of allowing any claim against the County, which claim would otherwise be barred under the doctrine of sovereign immunity or by operation of law.

D. **Infringement Claim.**

1. For all Licensed Software or derivate works of the Licensed Software used by County under this Agreement, Contractor agrees to protect, defend, indemnify, and hold harmless County, its agents, elected officials and employees of County from and against any and all claims, demands, actions, and causes or action which may arise asserting that all or any part of Contractor's Licensed Software or applications that are owned and licensed by Contractor to County for use thereof by County, infringe or misappropriate any third party's patent, copyright, trademark, trade secret, or other intellectual property rights protected by law. (replaces "valid state patent, copyright, trademark, or any trade secret protected

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under United States law.").

2. In the event of an infringement claim, Contractor shall have the option: (i) to procure for County the right to continue using any product or service found to be infringing; (ii) to replace any such infringing product or service with a non-infringing product or service; or (iii) to modify such infringing product or service to make it non-infringing. Contractor shall have no obligation under this Section 3.37, Limitation of Liability and Indemnification of County, if the infringement claim is based upon the use of the system in combination with other hardware or software applications not furnished by Contractor, or if such a claim arises from County's modification of the system without the authorization of Contractor.

3.38 Records & Right to Audit

County shall have the right to audit the books, records, and accounts of Contractor and its Subcontractors that are related to the resulting Contract. Contractor and its Subcontractors shall keep such books, records, and accounts as may be necessary in order to record complete and correct entries related to the resulting Contract. Contractor shall preserve and make available, at reasonable times for examination and audit by County, all financial records, supporting documents, statistical records, and any other documents pertinent to this Contract for a retention period of five (5) years after completion or termination of the Contract, and any renewals, as required by Item 65, General Records Schedule GS1-SL for State and Local Government Agencies, effective February 19, 2015 and the Florida Public Records Act (Chapter 119, Florida Statutes). Contractor shall, by written Contract, require its Subcontractors to agree to the requirements and obligations of this Section 3.38, Audits will be subject to applicable privacy and confidentiality laws and regulations and Contractor's privacy and confidentiality policies and procedures.

3.39 Change in Scope of Services/Work

A. The County may order changes in the work consisting of additions, deletions, or other revisions within the general scope of the awarded Contract. No claims may be made by the Contractor that the scope of the project or of the Contractor's services has been changed, requiring changes to the amount of compensation to the Contractor or other adjustments to the Contract, unless such changes or adjustments have been made by written amendment or change order to the Contract signed by the County Representative, County's Director of Purchasing and Contracts, and the Contractor.

B. If the Contractor believes that any particular work is not within the Statement of Work of the Contract, is a material change, or will otherwise require more compensation to the Contractor, the Contractor must immediately notify the County's Representative in writing of this belief. If the County's Representative believes that the particular work is within the scope of the Contract as written, the Contractor will be ordered to and shall continue with the work as changed and at the cost stated for the work within the Statement of Work. The Contractor must assert its right to an adjustment under this clause within thirty (30) days from the date of receipt of the written order.

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C. The County reserves the right to negotiate with the awarded Contractor(s) without completing the competitive RFP process for materials, products, and/or services similar in nature to those specified within this RFP for which requirements were not known when the RFP was released.

3.40 Modifications Due to Public Welfare or Change in Law

The County shall have the power to make changes in the Contract as the result of changes in law and/or Ordinances of Volusia County to impose new rules and regulations on the Contractor under the Contract relative to the scope and methods of providing services as shall from time-to-time be necessary and desirable for the public welfare. The County shall give the Contractor notice of any proposed change and an opportunity to be heard concerning those matters. The Statement of Work and method of providing services as referenced herein shall also be liberally construed to include, but is not limited to the manner, procedures, operations and obligations, financial or otherwise, of the Contractor. In the event any future change in Federal, State, or County law or the Ordinances of Volusia County materially alters the obligations of the Contractor, or the benefits to the County, then the Contract shall be amended consistent therewith. Should these amendments materially alter the obligations of the Contractor, then the Contractor or the County shall be entitled to an adjustment in the rates and charges established under the Contract. Nothing contained in this Contract shall require any party to perform any act or function contrary to law. The County and Contractor agree to enter into good faith negotiations regarding modifications to the Contract which may be required in order to implement changes in the interest of the public welfare or due to change in law. When such modifications are made to the Contract, the County and the Contractor shall negotiate in good faith, a reasonable and appropriate adjustment for any changes in services or other obligations required of the Contractor directly and demonstrably due to any modification in the Contract under this clause.

3.41 Safety

The Contractor shall take the necessary precautions and bear the sole responsibility for the safety of the methods employed in performing the work. The Contractor shall at all times comply with the regulations set forth by federal, state, and local laws, rules, and regulations concerning "OSHA" and all applicable state labor laws, regulations, and standards. The Contractor shall indemnify and hold harmless the County from and against all liabilities, suits, damages, costs, and expenses (including attorney's fees and court costs) which may be imposed on the County because of the Contractor, Subcontractor, or supplier's failure to comply with the regulations.

3.42 Right to Require Performance

A. The failure of the County at any time to require performance by the Contractor of any provision hereof shall in no way affect the right of the County thereafter to enforce same, nor shall waiver by the County of any breach of any provision hereof be taken or held to be a waiver of any succeeding breach of such provision or as a waiver of any provision itself.

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B. In the event of failure of the Contractor to deliver services in accordance with the Contract terms and conditions, the County, after due written notice, may procure the services from other sources and hold the Contractor responsible for any resulting additional purchase and administrative costs. This remedy shall be in addition to any other remedies that the County may have.

3.43 Force Majeure

Neither party shall be liable for any failure or delay in the performance of its obligations under the Contract to the extent such failure or delay necessarily results from the occurrence of a Force Majeure Event beyond the control or reasonable anticipation of either party, including, but not limited to, compliance with any unanticipated government law or regulation not otherwise in effect at the time of execution of this Contract, acts of God, unforeseeable governmental acts or omissions, fires, strikes, natural disasters, wars, riots, transportation problems, and/or any other unforeseeable cause whatsoever beyond the reasonable control of the parties (and such cause being referred to as a "Force Majeure Event"). Accordingly, the parties further agree that:

A. Upon the occurrence of Force Majeure Event, the non-performing party shall be excused from any further performance of those obligations under this Contract that are affected by the Force Majeure Event for as long as (a) the Force Majeure Event continues; and (b) the non-performing party continues to use commercially reasonable efforts to recommence performance whenever and to whatever extent possible without delay.

B. Upon the occurrence of a Force Majeure Event, the non-performing party shall notify the other party of the occurrence of such event and describe in reasonable detail the effect(s) of such event upon the party's performance of its obligations and duties pursuant to this Contract. Such notice shall be delivered or otherwise communicated to the other party within two (2) business days following the failure or delay caused by the Force Majeure Event, or as soon as possible after such failure or delay if the Force Majeure Event precludes the non-performing party from providing notice within such time period.

C. In the event of a Force Majeure Event, the time for performance by the parties under the applicable statement of work shall be extended for a period of time equal to the time lost by reason of such cause through execution of a Change Order pursuant to the terms of the Contract.

3.44 Contractor's Personnel

The Contractor shall be responsible for ensuring that its employees, agents, and Subcontractors comply with all applicable laws and regulations and meet all federal, state, and local requirements related to their employment and position.

By submission of a proposal, each Contractor certifies that it does not knowingly or willingly and will not during the performance of the resulting Contract employ illegal alien workers (i.e., non-U.S. citizens who have not been issued valid, appropriate, and current

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non-immigrant work visas, Form I-551s, or other similar governmental documentation necessary to authorize such persons to reside and perform compensated work or services, whether temporarily or permanently, within the United States) or otherwise violate the provisions of the Federal Immigration Reform and Control Act of 1986, as amended.

During the performance of the Contract, the Contractor shall agree to the following:

- The Contractor shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, age, handicap, or national origin, except when such condition is a bona fide occupational qualification reasonably necessary for the normal operations of the Contractor. The Contractor agrees to post in conspicuous places, visible to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.

- The Contractor, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, shall state that such Contractor is an Equal Opportunity Employer.

Notices, advertisements, and solicitations placed in accordance with federal law, rule, or regulation shall be deemed sufficient for the purpose of meeting the requirements of this Section 3.44.

The Contractor shall include the provisions of the foregoing paragraphs above in every subcontract or purchase order so that the provisions will be binding upon each Subcontractor.

The Contractor and any Subcontractor shall pay all employees working on the awarded Contract not less than minimum wage specified in the Fair Labor Standards Act (29 CFR 510-794), as amended.

Any information concerning the County, its products, services, personnel, policies, or any other aspect of its business learned by the Contractor or personnel furnished by the Contractor in the course of providing services pursuant to the Contractor, shall be held in confidence and shall not be disclosed by the Contractor or any employee or agents of the Contractor or personnel furnished by the Contractor, without the prior written consent of the County.

3.45 Disadvantaged Business Enterprise Program

The County Council has adopted policies which assure and encourage the full participation of Disadvantaged Business Enterprises (DBE) in the provision of goods and services. The County encourages joint ventures between majority-owned firms and qualified disadvantaged / minority / women-owned firms.

3.46 Performance and Payment Bonds – Project (excluding tower construction)

Contractor shall furnish Performance and Payment Bonds, prior to performing any work under the Contract in an amount equal to the total value of the project (excluding tower construction) including any amendments or change orders made thereto pursuant to the

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order or other documentation executed by the parties, in strict accordance with FL Statute, §255.05. Failing to do so, shall constitute a material breach of this Contract. The Bonds shall be secured from or countersigned by an agency or surety company recognized in good standing and authorized to do business in the State of Florida.

Simultaneously with the delivery of the executed Contract to the County, a Respondent to whom a Contract has been awarded must deliver to the County, executed, separate performance and payment bonds on the prescribed forms, each in an amount of one hundred percent (100%) of the Contract price of the accepted proposal, excluding the cost of tower construction, as security for the faithful performance of this Contract and for the payment of all persons performing labor or furnishing materials in connection therewith. The performance and payment bonds shall have as the surety thereon only such surety company or companies as are authorized to write bonds of such character and amount under the laws of the State of Florida and with a resident agent in Florida. The Attorney-in-Fact or other officer who signs performance and payment bonds for a surety company must record with such bonds a certified copy of his Power-of Attorney authorizing him/her to do so.

3.47 Performance and Payment Bonds – Tower Construction

Contractor shall furnish Performance and Payment Bonds, prior to performing any work under the Contract in an amount equal to the total value of the tower construction including any amendments or change orders made thereto pursuant to the order or other documentation executed by the parties, in strict accordance with FL Statute, §255.05. Failing to do so, shall constitute a material breach of this Contract. The Bonds shall be secured from or countersigned by an agency or surety company recognized in good standing and authorized to do business in the State of Florida.

Simultaneously with the delivery of the executed Contract to the County, a Respondent to whom a Contract has been awarded must deliver to the County, executed, separate performance and payment bonds on the prescribed forms, each in an amount of one hundred percent (100%) of the Contract price of the tower construction portion of the accepted proposal as security for the faithful performance of this Contract and for the payment of all persons performing labor or furnishing materials in connection therewith. The performance and payment bonds shall have as the surety thereon only such surety company or companies as are authorized to write bonds of such character and amount under the laws of the State of Florida and with a resident agent in Florida. The Attorney-in-Fact or other officer who signs performance and payment bonds for a surety company must record with such bonds a certified copy of his Power-of Attorney authorizing him/her to do so.

3.48 Claim Notice

The Contractor shall immediately report in writing to the County's designated representative or agent any incident that might reasonably be expected to result in any claim under any of the coverage mentioned herein. The Contractor agrees to cooperate with the County in promptly releasing reasonable information periodically as to the disposition of any claims, including a résumé of claims experience relating to all Contractor

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operations at the County project site. The designated representative for the County shall be:

Name:	County of Volusia, Florida Personnel/Risk Management Division
Address:	230 North Woodland Boulevard, Suite 250 DeLand, Florida 32720
Telephone:	386-736-5963
Fax:	386-822-5006

3.49 County/Contractor Relationship

The County of Volusia reserves the right to award one or more Contracts to provide the required services as deemed to be in the best interest of the County.

Any awarded Contractor shall provide the services required herein strictly under a Contractual relationship with the County and is not, nor shall be, construed to be an agent or employee of the County. As an independent Contractor the awarded Contractor shall pay any and all applicable taxes required by law; shall comply with all pertinent Federal, State, and local statutes including, but not limited to, the Fair Labor Standards Act, the Americans with Disabilities Act, the Federal Civil Rights Act, and any and all relevant employment laws. The Contractor shall be responsible for all income tax, FICA, and any other withholdings from its employees or Subcontractor's wages or salaries. Benefits for same shall be the responsibility of the Contractor including, but not limited to, health and life insurance, mandatory social security, retirement, liability/risk coverage, and worker's and unemployment compensation.

The independent Contractor shall hire, compensate, supervise, and terminate members of its work force; shall direct and control the manner in which work is performed including conditions under which individuals will be assigned duties, how individuals will report, and the hours individuals will perform.

3.50 New Material

Unless otherwise provided for in this specification, the awarded Contractor represents and warrants that the goods, materials, supplies, or components offered to the County under this RFP solicitation are new, not used or reconditioned. The Contractor represents that these goods, materials, supplies, or components are not of such age or so deteriorated as to impair their usefulness or safety and that the goods, materials, supplies, or components offered are current production models of the respective manufacturer. If the Contractor believes that furnishing used or reconditioned goods, materials, supplies, or components will be in the County's interest, the Contractor shall so notify the County Procurement Analyst in writing no later than ten (10) working days prior to the date set for opening of proposals. The notice shall include the reasons for the request and any benefits that may accrue to the County if the Procurement Analyst authorizes the inclusion of used or reconditioned goods, materials, supplies, or components.

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3.51 Damages

Due to the nature of the services to be provided and the potential impact to the County for loss, the Contractor cannot disclaim consequential or special damages related to the performance of this Contract. The Contractor shall be responsible and accountable for any and all damages, directly or indirectly, caused by the actions or inaction of its employees, staff, or Subcontractors. There are no limitations to this liability.

3.52 Proposal Acceptance/Rejection

The County reserves the right to accept or reject any or all proposals received as a result of this RFP, or to negotiate separately with competing Respondents, and to waive any informalities, defects, or irregularities in any proposal, or to accept that proposal or proposals, which in the judgment of the proper officials, is in the best interest of the County.

3.53 Proposal Acceptance Period

Any Proposal in response to this RFP shall be valid through **December 31, 2021.** At the end of this time the proposal may be withdrawn at the written request of the Respondent if no award has been made. If the Proposal is not withdrawn at that time it remains in effect until an award is made or the solicitation is canceled regardless of the status of the proposal bond. The County reserves the right to request an extension of the proposals if a Contract has not been executed by December 31, 2021.

3.54 Proof of Third Party Software License

If Third Party Software is provided by the Contractor to the County, whether by itself or in conjunction with any products, equipment, solutions, or services provided by the Contractor or any of its subcontractors, the Contractor shall:

A. Provide documented proof of proper licensure allowing the County the lawful use of all such third-party software products as contemplated by this Agreement. This proof will include, at a minimum, copies of software licenses and proofs-of-purchase (*e.g.*, copies of paid invoices).

B. Provide updated copies of such proof of proper licensure as requested and as necessary when software is changed during system upgrades or modifications.

C. Supply additional supporting evidence of software licensure upon request in order to meet auditing and/or tracking requirements of the County. This includes promptly supplying such evidence of licensure in the event of an audit or evaluation of the County's software or systems performed at the request or upon the demand of a software developer or supplier.

The Contractor shall respond to all requests for documentation regarding third-party software licensure within one (1) week, unless otherwise agreed between the parties. Time

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is of the essence in producing such documentation, insofar as there may be penalties assessed against the County for any delays encountered during a license audit.

The Contractor shall further indemnify, defend, and hold the County harmless from and against any contractual, statutory, or regulatory penalties and costs assessed against the County arising from the Contractor's failure to provide proper software licensure or proof thereof, including the cost to the County of purchasing appropriate licenses to continue the County's use of the software pursuant to this Agreement.

3.55 Product Malfunction

In the event that the County terminates the Contract due to default by the Contractor or does not accept the proposed product(s) after installation due to errors, malfunctions, and/or non-performance of the Contractor (or its sub-contractor), the County shall have the right to use the product(s), without charge, until it can be replaced in accordance with the Transition Plan provisions of this solicitation.

In the event that the Contractor cannot correct Critical or Non-Critical Problems noted by the County in the then implemented version (including updates) of the product(s), the Contractor shall replace the product or provide a "work around" within ten (10) calendar days after notification that a software correction is required. In the event that the Contractor does not keep the product(s) functioning according to specifications in accordance with the County's sole judgment, then the County, at its sole option, shall have the right to return any or all of the product(s) and related technical data and terminate the Contract. The County may elect to levy liquidated damages as may be established in the awarded Contract or withhold final payments in the case that the system proves unreliable or does not perform. The County may terminate the Contract for this cause.

3.56 Transition Services

A. If the Contract expires or is earlier terminated, the Contractor shall provide Transition Support Services to the County and develop a transition plan (the "Transition Plan") in the form of an Amendment or Change Order to this Contract to be signed by the County and the Contractor. Contractor's time will be limited to Support Services needed to produce required materials and to respond to questions regarding the System to be transitioned to another Contractor. Examples of Support Services include but are not limited to delivering via electronic media, accurate copies of any data that is requested and necessary to perform the services. The Contractor shall cooperate with County to develop and implement an orderly transition plan and Contractor shall continue to provide services to County until the Transition Plan is completed to the satisfaction of the County. Materials include but are not limited to assistance including all documentation so Contractor can provide the Transition Support Services to County or another Contractor. However, in no event shall Contractor be obligated to disclose any proprietary information or trade secrets to any competitor of Contractor.

B. If the Contract is earlier terminated by the Contractor, other than for default by the County, then Contractor shall provide Transition Support Services at no cost to the

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County. If this Contract expires or is earlier terminated by the County, then Contractor shall provide Transition Support Services upon terms mutually agreed upon by the parties.

3.57 Return of Assets

Except as otherwise provided in the Contract, or upon termination of the Contract, the Contractor shall return all County-owned assets including, but not limited to, stored data and information.

3.58 Excessive Downtime

Equipment or software furnished under the Contract shall be capable of continuous operation in accordance with the minimum requirements.

3.59 Ownership of County Intellectual Property

Contractor agrees that all domain names registrations, SSL certificates, personal name SLDs, e-mail addresses, other registrations, and trade names or trademarks that County owns prior to or acquires under this Agreement, whether purchased by the County or by Contractor for the specific benefit of the County under this Agreement shall be owned by the County with all rights of title, interest, and possession. As such, Contractor agrees that County shall have immediate and unfettered access to and the use and benefit of County's domain name registrations, SSL certificates, Personal name SLDs, and trade names or trademarks at any time, including upon the termination of this Agreement by either party. Contractor further agrees that County's domain names, SSL certificates, personal name SLDs, trade names or trademarks shall not be used by Contractor or its subcontractors unlawfully or allow unauthorized access to County's data in County systems or networks.

3.60 Data Security

With respect to the System and environment the Contractor uses to provide services, including those for data storage and transmission, the Contractor agrees as follows:

A. Ownership of County Data. County is the owner of its data, data compilations and reports or compilations of its data generated from use of the Licensed Software ("County Data"). Notwithstanding anything to the contrary contained in this Agreement, the County shall have the right to use the Contractor's Licensed Software to access and have unfettered use of such data, reports, compilations, or information derived from or resulting from the use of the Licensed Software and/or to generate reports from such data, files or information. Contractor acknowledges and agrees that the County is the owner and custodian of said data, compilations and information whether or not such is electronically retained and regardless of the retention media and that the use of the Licensed Software in relation to such information or data does not in any way restrict County in the County's rights of disclosure of its data and information.

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B. County Proprietary Information. After notification of Contract award and prior to commencement of work, the Contractor shall conduct background screening for all of its employees and approved contractors or subcontractors who provide services to the County or have access to the County proprietary information, including, without limitation, criminal background checks. In addition, the Contractor shall train its employees and approved contractors and subcontractors who handle the County proprietary information on security standards and activities. The Contractor shall take necessary security measures to ensure that the County proprietary information cannot be downloaded to or printed from any devices that its employees, contractors or subcontractors use, including, and without limitation, desktops, laptops, and USB flash drives. The Contractor is responsible for providing background screening verification to the County.

C. County Data. In storing or processing the County Data, the Contractor shall not comingle the County Data with any data from Contractor's other clients.

D. Security Operating Protocols. The Contractor shall employ generally accepted industry security methods and internal security operating protocols to prevent intrusion into the service the Contractor provides to the County or interception of data or communications by unauthorized third parties. Such practices shall include, without limitation: encryption of data for storage and for transmission; firewall protection; password protection; review of firewall logs and intrusion detection notifications on a daily basis; and update of virus definitions and security patches on an as-needed basis.

E. Hosting Provider. The Contractor shall only use servers located in secure facilities in the U.S. and administered by a third party hosting provider ("Hosting Provider") to provide services to the County. The Contractor represents and warrants that each Hosting Provider used by the Contractor will cause to be conducted, on at least an annual basis, an SSAE 16 Type II (or equivalent) security audit by a reputable security specialist who shall identify in a written report (a copy of which shall be promptly delivered to the County upon request and which shall be the Contractor's Proprietary Information) any readily identifiable security vulnerabilities in connection with the applicable Hosting Provider's services that the Contractor uses and the operating environment thereof.

F. County Data Location. Except for sending the County Data to the County, the Contractor shall keep the County Data solely in its Hosting Provider's facility or facilities located in the United States and shall not allow such data to leave such facility or facilities in any form.

G. Security Breach. Within twelve (12) hours of discovery, the Contractor shall notify the County should it discover any breach of the security provisions set forth in this Agreement or a loss, interception, unauthorized disclosure or other compromise of the County Data and shall immediately coordinate with the County to investigate and remedy such breach(es) in a diligent and timely manner. Except as may be strictly required by applicable law, the Contractor agrees that it will not inform any third party of any such security breach involving the County Data without the

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County's prior written consent; however, if such disclosure is required by applicable law, the Contractor agrees to work with the County regarding the content of such disclosure so as to minimize any potential adverse impact upon affected parties.

H. Backup Materials. The Contractor shall maintain backup servers as well as a complete and current backup copy of the System that the Contractor uses to provide services to the County and the data processed through the System ("Backup Materials"). Backup Materials shall be maintained at a separate physical location located in the United States. If access or use of the service is interrupted, the appropriate backup shall be activated within four (4) hours to minimize disruptions.

3.61 Access to County System

A. The County, in its sole discretion, may permit the Contractor to have on-line access to designated computer systems of the County in order to facilitate the Contractor's ability to perform its obligations under this Agreement. Such access shall be used only in furtherance of the Contractor's duties under this Agreement and may not be used for any other purpose. If such access is granted, the Contractor shall give to the County the names of the Contractor's employees who have a legitimate business need for such access to the County's computer systems, and the County shall provide a separate user identification code for each person, if applicable.

B. The Contractor, at its own expense, shall provide and maintain any hardware, telecommunications services and software not furnished by the County which is needed to communicate reliably with the County's computer systems. The County, in its sole discretion, may terminate the Contractor's access to the County's computer network at any time. The Contractor shall ensure that: (a) computer access is limited to those employees with a legitimate business need whose names have been furnished to the County; and (b) such employees with access agree to keep any information so obtained strictly confidential, to use such information only to perform the Contractor's contract obligations to the County and to cease accessing the County's computer systems when no longer required to perform work under this Agreement.

C. The Contractor shall promptly notify the County if it becomes aware of any unauthorized access to the County's computer systems or unauthorized use of the information on the systems. Any information to which the Contractor, its officers, employees, subcontractors or agents becomes privy as a result of such access shall be deemed proprietary information and protected by the provisions of this Agreement.

D. The Contractor shall cooperate with the County in the investigation of any apparent unauthorized access by the Contractor to the County computer or electronic data storage systems or unauthorized release of the County proprietary information by the Contractor. The Contractor warrants and agrees that its personnel will not remotely access the County's system from a networked computer unless the network is protected from all third party networks by a firewall that is maintained

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with all patches up to date by an administrative staff. Said firewall must be certified by the International Computer Security Association (ICSA) (or an equivalent certification as determined by the County) if the connection to the County's network is an ongoing connection such as broadband or Metro E.

4.0 SUBMITTAL REQUIREMENTS

It is **not** necessary to return every page of this document with the Proposal; return *only* the pages that require signatures or information as listed below.

Proposals shall include all of the information solicited in this RFP, and any additional data that the Respondent deems pertinent to the understanding and evaluating of the proposal. Proposals shall be organized in sections tabbed in the order described below. The Respondent should not withhold any information from the written response in anticipation of presenting the information orally or in a demonstration, since oral presentations or demonstrations may not be solicited. All proposals shall include at minimum:

Submittal Format – Material shall be submitted in a loose leaf binder format, not as bound documents or with coil spines (plastic or metal). Respondents shall not submit material in any binder that exceeds two inches (2"); provide proposal in multiple binders if required. **Submittals shall be limited to 1000 single-sided pages with text in no smaller than twelve (12) point font, Arial preferred. Marketing materials or data sheets may be submitted in a separate binder(s) and have no page limit.**

NOTE: Failure of the Respondent to clearly and specifically address each of the items listed below may result in the Proposal *not* being evaluated or considered for award.

All proposals shall include at a minimum:

Tab 1 – Respondent's Profile and Submittal Letter

A. A submittal letter signed by an authorized agent of the firm, as listed on the Florida Department of State, Division of Corporations' Sunbiz report available at www.sunbiz.org (Sunbiz), shall be required. If anyone other than the officers listed on the Sunbiz website will be signing this RFP, a memorandum of authority signed by an officer of the firm allocating authorization shall be required. If firm is not currently registered as a vendor in the State of Florida (Sunbiz), include documentation designation of contracting authority. The memorandum of authority shall be on the firm's letterhead and shall clearly state the name, title and contact information for the individual designated by the firm.

B. A brief profile of the firm, including: (customize to fit your project)

1. A brief history of the business;

2. Organizational structure of business;

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3. Designation of the legal entity by which the business operates (i.e., sole proprietorship, partnership, limited liability partnership, corporation, limited liability corporation, etc.) including documentation from the appropriate state's agency confirming firm's legal entity type. For non-Florida businesses, submit documentation from the state in which the business was formed and documentation from the State of Florida providing authorization to perform business in the state of Florida;

4. A Florida Department of State, Division of Corporations' Sunbiz report available at www.sunbiz.org;

5. Ownership interests;

6. Active business venues (counties, states, etc.);

7. Present status and projected direction of business;

8. The overall qualifications of the business to provide the services requested;

Tab 2 – Forms

1. **Proposal Form**

   Complete the Proposal Form provide in the RFP (see Section 5.0).

2. **W-9**

   Include a completed W-9 form. If the firm is not registered with Volusia County, on-line registration is available at www.volusia.org/purchasing under Vendor Self Service, which links to the registration site and the W-9 form can be accessed through this site as well.

3. **Addenda**

   Any addenda issued subsequent to the release of this solicitation must be signed and returned with the firm's proposal. Failure to return signed addenda may be cause for the proposal to be considered non-responsive.

4. **Insurance**

   Attach evidence of required insurance coverage or proof of insurability in the amounts indicated. If available, a properly completed ACORD Form is preferable. Final forms must contain the correct solicitation and/or project number, name the Volusia County contact person, and shall be in accordance with Exhibits C.1 – C.3 Insurance Requirements.

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5. **Business Tax Receipt (BTR)**

   To be responsive to this solicitation, each Respondent who is currently required to have a Business Tax Receipt (BTR) at the time of submittal shall provide a copy of their current BTR in their response to this solicitation.

   There are two exceptions to this requirement:

   1. If Respondent's business does not have a physical location in Volusia County, no submission is required, OR

   2. If Respondent's business type is exempt, submit a Proof of Exemption approved by the Volusia County Revenue Director (see Section 8.0).

   Reference: Chapter 114, Article I, Section 114-1 of the Volusia County Code of Ordinances:
   https://library.municode.com/fl/volusia_county/codes/code_of_ordinances?nodeId=PTIICOOR_CH114TA_ARTIINGE

6. **Conflict of Interest Form**

   All Respondents shall properly complete, have notarized, and include with their proposal the attached statement disclosing any potential conflict of interest that the Respondent may have due to ownership, other clients, contracts, or interests associated with this project. (see Section 10.0)

7. **Drug-Free Work Place Form (see Section 11.0)**

8. **Certification Regarding Debarment (Prime) Form (see Section 12.0)**

9. **Certification Regarding Debarment (Sub) Form (see Section 13.0)**

10. **Certification Regarding Prohibition Against Contracting with Scrutinized Companies (see Section 14.0)**

11. **Payment/Performance Bond - Project (see Section 15.0)**

12. **Payment/Performance Bond – Tower Construction (see Section 16.0)**

Tab 3 – References

All proposers, whether an OEM manufacturer or reseller proposing an OEM manufacturer's equipment, are required to submit five (5) references.

Four (4) references are required to demonstrate the use of the OEM vendor's P25 technology for a minimum of one (1) years' relevant operational service and have a combination of P25 Phase 1 and Phase 2 radios in daily operation. The four (4) networks referenced must be currently supporting a combination of 3,000 or more

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P25 Phase 1 and Phase 2 radios in daily operation and must have at least six tower sites.

The fifth reference will be a user who has either a P25 Phase 1 or Phase 2 network similar in size to Volusia County's Public Safety Network (13 tower sites, 10,000 radios) or greater, and has been in service operation over a year. The radios on this reference's network can either be all P25 Phase 1 or Phase 2.

Include company name, contact person, phone number and e-mail address, as staff will contact references as part of the evaluation. Respondents shall confirm that reference contact information is correct and inform references that the County of Volusia may be contacting them as part of the RFP evaluation. A conference call may be requested with the reference. Additional pages may be used to illustrate the scope of the referenced network. The County of Volusia shall not be listed as a reference. (Use Section 6.0)

Tab 4 – Pricing Sheets

Complete the Pricing Sheets in Exhibit B.

Tab 5 – P25 Compliant Radio System

Tab 5.1 Project Understanding

1. Respondent shall clearly describe their ability to deliver a state-of-the-art, secure solution.

2. Respondent shall clearly state their background in implementing comparable systems with other agencies.

3. Respondent shall clearly state the anticipated benefits to the County for using the Respondent's proposed solution.

4. The Respondent's proposed solution shall not require the use of the Respondent to customize any feature that can otherwise be configured such as menus, reports, databases, screens, etc.

5. Respondent shall clearly state how the proposed system provides maximum flexibility with minimal or no customization required by the Respondent.

6. The system shall provide all features within the current version of the software, requiring no coding or programming modifications and with all changes done through configuration of existing software.

7. The core solution shall meet the majority of the County's functionality requirements.

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8. Respondent shall submit detailed documentation for any required modifications or customization.

9. Custom changes shall be developed, integrated, and stored in a manner that facilitates future releases (version upgrades) from the Respondent.

10. The Respondent shall incorporate into a gap analysis, and provide this gap analysis here, for each instance where its core solution does not meet the requirements outlined in this solicitation.

Tab 5.2 Conceptual Plan

The summaries in this section shall contain as little technical language as possible and shall be oriented to non-technical personnel.

1. Brief Narrative

   a. Included in this tab shall be a brief narrative summarizing the Respondent's solution.

   b. There shall be a clear identification of any third party providers / subcontractors with details of what role each party shall perform.

   c. Describe the support of third party products (if any) that have been customized and are not supported by the third party vendor, but bundled with the solution.

2. Conceptual Training Plan

   As detailed in Section 17 Training of Exhibit A – Technical Specifications.

Tab 5.3 Technology Evolution

Statements made in this section shall not be construed to be a commitment to deliver future functionality beyond that which is included in the other sections of this proposal.

Recent advances in technology are leading to a convergence of wireless technologies such as commercial carrier, LTE, Wi-Fi, Bluetooth, and others, with Land Mobile Radio systems. Due to technology evolution during the lifetime of the proposed P25 system, it is anticipated that a number of new features will evolve in LMR.

1. This section provides the Contractor with an opportunity to describe any planned features or functionality that may become available during the procurement, implementation, and operation of the proposed P25 system.

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2. The Contractor shall explain how they will be a partner to the County to evolve the P25 radio system into a broadband-based Public Safety Communications System.

3. If the Contractor is currently manufacturing and selling products in this category, please provide a description of the product, its availability, features, functionality and pricing for optional purchase consideration by the County. If such products are offered, the Contractor shall be specific regarding the requirements on the infrastructure and subscriber side hardware or software required to support the technology.

Tab 5.4 Requirements Matrices, Supplemental Forms

The Respondent shall complete the following exhibits and include these Exhibits in this submittal subsection:

1. Exhibit A.1 - Requirements Matrix;

2. Exhibit A.2 – Supplemental Forms.

The MS Excel spreadsheet response column should expand as required in the matrices. Please verify all responses are clearly visible in the provided MS Excel spreadsheet and PDF formats. Each workbook contains multiple worksheets on separate tabs. Respondent shall complete all worksheets in each exhibit.

NOTE: Although the Respondent shall "self-rate" the responses, all requirements may be validated during demonstrations prior to final ranking of the Respondents. If functionality cannot be validated, ranking of the Respondent shall be changed.

Tab 5.5 Resources and Qualifications of the Respondent's Personnel

1. The Respondent shall provide an organization chart showing the reporting structure and where the proposed project would be assigned within the organization.

2. The Respondent shall provide information on the proposed Project Manager's qualifications and experience that shall be assigned to this project.

3. The Respondent shall describe its proposed project team including personnel and their qualifications.

4. The Respondent shall identify the total number of Respondent's technical personnel required to customize/configure (if required) its product, test its system on-site at the County, provide training (knowledge transfer) to County staff; and implement the system.

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5. The Respondent shall provide proven certification and training on the delivered system for technical support. Updated documentation shall be provided during the Contract term to the County Project Manager.

Tab 5.6 Resources to be provided by the County

The Respondent shall list any resources or other items expected to be provided by the County. All County staffing requirements within the project shall be detailed, including the specific tasks to be performed and estimated amount of required time by staff type.

Tab 5.7 Additional Information

The Respondent shall include and reference all supporting information, including marketing materials, that Respondent believes relevant to understanding its solution.

Tab 5.8 Warranty and Maintenance Requirements

As detailed in Section 19 Warranty and Maintenance of Exhibit A – Technical Specifications.

Tab 6 - Agreements

1. The Respondent shall include all agreements that the Respondent proposes to be signed by the County. Agreements shall be specific to the solution proposed, not merely blank or generic forms.

2. The Respondent shall clearly indicate if these agreements or, specifically, what portions of the agreement, are subject to negotiation. These agreements and the flexibility of the Respondent shall be considered during the evaluation of the Proposal.

3. Software Escrow Agreement. For those Respondents proposing the use of a Software Escrow Agreement, the Respondent shall provide a copy of the Software Escrow Agreement or indicate that an agreement shall be provided.

4. Third Party Agreement: For those Respondents proposing the use of a Third Party Agreement, the Respondent shall provide a copy of the Third Party Agreement or indicate that an agreement shall be provided.

5. Note: All proposed agreements shall be included on the CD or USB drive in MS Word format, clearly marked as a separate file.

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Tab 7 - Definitions

The Respondent shall include definitions of all terms required to fully define all aspects of the proposed system. The Respondent shall identify any conflicting definitions in the RFP and the proposal and shall provide a proposed definition along with a detailed justification for the conflict. THE RESPONDENT SHALL NOT SUBMIT A DICTIONARY OF COMMONLY USED TERMS, ONLY THOSE DEFINITIONS THAT ARE UNIQUE TO THE PROPOSED SOFTWARE SOLUTION.

Tab 8 - Financial Statement

A Dun and Bradstreet report may be used by the County to evaluate Respondent's financial stability. All Respondents shall be prepared to supply a financial statement upon request, preferably a certified audit of the last available fiscal year.

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Date: _____

5.0 PROPOSAL FORM

TO: County of Volusia, Florida
Office of Purchasing and Contracts Director
123 W. Indiana Avenue, 3rd Floor
DeLand, FL 32720-4608

The undersigned hereby declare(s) that [firm name] _____ has carefully examined the specifications to furnish:

P25 Compliant Radio System

for which proposals were advertised to be received **no later than 3:00 p.m., local time, Wednesday, January 15, 2020,** and further declare that [firm name] _____ will furnish the P25 compliant radio system according to specifications.

Please submit all documents in accordance with Section 4.0 Submittal Requirements.

The County reserves the right to negotiate with the award vendor(s) for additional items similar in nature not known at time of closing.

Sole Proprietor: ❑ YES ❑ NO **Total number employees: _____**

The following information is required in order to be granted a price redetermination.

F.O.B. Destination

Prompt payment discount, if applicable: _____ % _____ Days; Net 45 Days

Do you accept electronic funds transfer (EFT)? ❑ YES ❑ NO

Do you offer a discount for electronic funds transfer (EFT)? ❑ YES, ____ % ❑ NO

Have you supplied all the Submittal Requirements outlined below?

- ❑ Tab 1 – Submittal Letter including the Memorandum of Authority, if required
- ❑ Tab 1 – Respondent's Profile
- ❑ Tab 2 - Forms
  - ❑ Completed and Executed RFP proposal Form
  - ❑ W9
  - ❑ Any Addenda pertaining to this RFP
  - ❑ If you have a physical location in Volusia County, submit on of these:
  - ❑ Current **Business Tax Receipt**, ***OR*** ❑ **Proof of Exemption** Form

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- ❑ Proof of Insurance
- ❑ Conflict of Interest form
- ❑ Drug Free Workplace
- ❑ Certification Regarding Debarment (Prime)
- ❑ Certification Regarding Debarment (Sub)
- ❑ Certification Regarding Scrutinized Companies
- ❑ Payment/Performance Bond - Project
- ❑ Payment/Performance Bond – Tower Construction

❑ Tab 3 – References, in accordance with requirements of Tab 3
❑ Tab 4 – Pricing Sheets
❑ Tab 5 – P25 Compliant Radio System
- ❑ Tab 5.1 – Project Understanding
- ❑ Tab 5.2 – Conceptual Plan
- ❑ Tab 5.3 – Technology Evolution
- ❑ Tab 5.4 - Requirements Matrix, Supplemental Forms
- ❑ Tab 5.5 - Resources and Qualifications of the Respondent's Personnel
- ❑ Tab 5.6 - Resources to be provided by the County
- ❑ Tab 5.7 - Additional Information
- ❑ Tab 5.8 – Warranty and Maintenance Requirements

❑ Tab 6 – Agreements
❑ Tab 7 – Definitions
❑ Tab 8 – Financial Statement, upon request
❑ Did you include a CD or USB drive, as required in Section 3.8, Proposal Form?

The County of Volusia reserves the right to reject any or all proposals, to waive informalities, and to accept all or any part of any proposal as they may deem to be in the best interest of the County.

I hereby certify that I have read and understand the requirements of this Request for Proposal No. **19-P-153JRD** and, that I, as the Respondent, will comply with all requirements, and that I am duly authorized to execute this proposal/offer document and any Contract(s) and/or other transactions required by award of this RFP.

Further, as attested to by below signature, I will provide the required insurance, per §3.25, *Insurance*, upon notification of recommendation of award.

The vendor acknowledges that information provided in this proposal is true and correct:

✘ _____

Authorized Signature

Printed Name

Title Date

Company Name

Full Address

Attachment: 25._19-P-153JRD,_P25_Complaint_Radio_System_-_Revi (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Telephone	Fax	E-mail Address
Dun & Bradstreet #		Federal I.D. #

Attachment: 25._19-P-153JRD,_P25_Complaint_Radio_System_-_Revi (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

6.0 REFERENCES

Agency **#1**	
Address	
City, State, ZIP	
Contact Person	
E-mail	Phone:
Date(s) of Service	
Type of Service	
Comments:	
Agency **#2**	
Address	
City, State, ZIP	
Contact Person	
E-mail	Phone:
Date(s) of Service	
Type of Service	
Comments:	
Agency **#3**	
Address	
City, State, ZIP	
Contact Person	
E-mail	Phone:
Date(s) of Service	
Type of Service	
Comments:	

Attachment: 25._19-P-153JRD,_P25_Complaint_Radio_System_-_Revi (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Agency **#4**	
Address	
City, State, ZIP	
Contact Person	
E-mail	Phone:
Date(s) of Service	
Type of Service	
Comments:	
Agency **#5**	
Address	
City, State, ZIP	
Contact Person	
E-mail	Phone:
Date(s) of Service	
Type of Service	
Comments:	

Attachment: 25._19-P-153JRD,_P25_Complaint_Radio_System_-_Revi (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

7.0 NOTIFICATION REGARDING PUBLIC ENTITY CRIME & DISCRIMINATORY VENDOR LIST REQUIREMENTS & DISQUALIFICATION PROVISION

A. Pursuant to Florida Statutory requirements, potential Respondents are notified:

287.133(2)(a) A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a Bid, proposal, or reply on a Contract to provide any goods or services to a public entity; may not submit a Bid, proposal, or reply on a Contract with a public entity for the construction or repair of a public building or public work; may not submit Bids, proposals, or replies on leases of real property to a public entity; may not be awarded or perform work as a Contractor, supplier, subcontractor, or consultant under a Contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in s. 287.017 for CATEGORY TWO for a period of 36 months following the date of being placed on the convicted vendor list.

287.133(2)(b) A public entity may not accept any Bid, proposal, or reply from, award any Contract to, or transact any business in excess of the threshold amount provided in s. 287.017 for CATEGORY TWO with any person or affiliate on the convicted vendor list for a period of 36 months following the date that person or affiliate was placed on the convicted vendor list unless that person or affiliate has been removed from the list pursuant to paragraph (3)(f). A public entity that was transacting business with a person at the time of the commission of a public entity crime resulting in that person being placed on the convicted vendor list may not accept any Bid, proposal, or reply from, award any Contract to, or transact any business with any other person who is under the same, or substantially the same, control as the person whose name appears on the convicted vendor list so long as that person's name appears on the convicted vendor list.

287.134(2)(a) An entity or affiliate who has been placed on the discriminatory vendor list may not submit a Bid, proposal, or reply on a Contract to provide any goods or services to a public entity; may not submit a Bid, proposal, or reply on a Contract with a public entity for the construction or repair of a public building or public work; may not submit Bids, proposals, or replies on leases of real property to a public entity; may not be awarded or perform work as a Contractor, supplier, subcontractor, or consultant under a Contract with any public entity; and may not transact business with any public entity.

287.134(2)(b) A public entity may not accept any Bid, proposals, or replies from, award any Contract to, or transact any business with any entity or affiliate on the discriminatory vendor list for a period of 36 months following the date that entity or affiliate was placed on the discriminatory vendor list unless that entity or affiliate has been removed from the list pursuant to paragraph (3)(f). A public entity that was transacting business with an entity at the time of the discrimination resulting in that entity being placed on the discriminatory vendor list may not accept any Bid, proposal, or reply from, award any Contract to, or transact any business with any other entity who is under the same, or substantially the same, control as the entity whose name appears on the discriminatory vendor list so long as that entity's name appears on the discriminatory vendor list.

B. By submitting a proposal, the Respondent represents and warrants that the submission of its proposal does not violate Section 287.133, Florida Statutes (2005), nor Section 287.134, Florida Statutes (2005).

C. In addition to the foregoing, the Respondent represents and warrants that Respondent, Respondent's subcontractors and Respondent's implementer, if any, is not under investigation for violation of such statutes.

D. Respondent should read carefully all provisions of 287.133 and 287.134, Florida Statutes (2005).

Attachment: 25._19-P-153JRD,_P25_Complaint_Radio_System_-_Revi (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

8.0 PROOF OF EXEMPTION

BUSINESS SERVICES
REVENUE DIVISION
123 W. INDIANA AVE. • ROOM 103 • DELAND, FL 32720-4602
PHONE: 386-736-5938 • FAX: 386-822-5729
www.volusia.org/revenue

I certify that the business known as (*business name*) _____,
providing _____ services, which is located at (*street address*) _____
_____, (*city*) _____, falls under the business tax exemption described in:

- ❑ Florida Statute 205. 063
- ❑ Florida Statute 205. 064
- ❑ Florida Statute 205. 065
- ❑ Florida Statute 205. 162
- ❑ Florida Statute 205. 171
- ❑ Florida Statute 205. 191
- ❑ Florida Statute 205. 192

https://library.municode.com/fl/volusia_county/codes/code_of_ordinances?nodeId=PTIICOOR_CH114TA_ARTIINGE

OR is the type of business indicated below:

- ❑ Child Care – Residential
- ❑ Commercial Rentals
- ❑ Door to Door/Peddler Sales
- ❑ Insurance Adjuster, Agent, or Company
- ❑ Pharmacist/Pharmacy *(Prescription Drugs Only)*
- ❑ Radio/Television Station
- ❑ Religious Institution
- ❑ Residential Rentals over 6months
- ❑ Sale of Alcoholic Products only

_____ _____
(Authorized Signature) *(Printed Name)*

STATE OF _____

COUNTY OF _____

Sworn to and subscribed before me this _____ day of _____, 20_____, by _____, who is/are personally known to me ***or*** *who has/have produced _____ as identification.*

_____
NOTARY PUBLIC – STATE OF _____
Type or print name:
_____
Commission No.: _____
Commission Expires: _____

(Seal)

A business that falls under one of the exempt classifications listed above is not required to have a Volusia County Business Tax Receipt.

_____
Revenue Director/Designee

Attachment: 25._19-P-153JRD,_P25_Complaint_Radio_System_-_Revi (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

9.0 HOLD HARMLESS AGREEMENT

I, _____, (*print owner's name*), am the owner of _____ (*print company name*), an incorporated/unincorporated business operating in the State of Florida. As such, I am bound by all laws of the state of Florida, including but not limited to those regarding the workers' compensation law.

I hereby affirm that I or [the above-named business] employs fewer than four employees, all of whom are listed below, including myself, and therefore, the business is exempt from the statutory requirement for workers' compensation insurance for its employees. I certify that I will provide the County of Volusia with the name of each new employee together with all required waivers and releases for each prior to any employee being allowed to work to provide services under the Contract set forth below. If any such employee is allowed to work without a signed waiver and release, such action will be a material breach of this Agreement. All signed waivers and releases shall be furnished before the commencement of any work by an employee or the undersigned to the County Project Manager or designated county representative.

On _____, 20____, the County of Volusia and I or (*the above-named business)* entered into a Contract for _____ (*please insert name of Contract*) (hereinafter "Agreement") which is incorporated by reference herein.

On behalf of myself, my business, and the employees listed below, I and they hereby agree to waive and release any and all workers' compensation claims or liens under Chapter 440, Florida Statutes, against the County of Volusia and its agents, officials and employees, arising from any work or services provided under the Agreement whether or not it shall be alleged or determined that the act was caused by intention, or through negligence or omission of the County of Volusia or its agents, officials and employees or subcontractors.

In the event that a workers' compensation claim or lien is made against the County of Volusia and/or its agents, officials or employees by myself or my employees or agents as a result of any work or services performed under the Agreement, I agree to indemnify, keep and hold harmless the County of Volusia, Florida, its agents, officials and employees, against all injuries, deaths, losses, damages, claims, liabilities, judgments, costs and expenses, direct, indirect or consequential (including, but not limited to, fees and charges of attorneys and other professionals) arising out of the Agreement with the County of Volusia, whether or not it shall be alleged or determined that the act was caused by intention or through negligence or omission of the County of Volusia or its employees, agents, or subcontractors. I or the above-named business shall pay all charges of attorneys and all costs and other expenses incurred in connection with the indemnity provided herein, and if any judgment shall be rendered against the County of Volusia in any action indemnified hereby, I or the above-named business shall, at my or its own expense, satisfy and discharge the same. The foregoing is not intended nor should it be construed as, a waiver of sovereign immunity of the COUNTY OF VOLUSIA under Section 768.28, Florida Statutes.

Attachment: 25._19-P-153JRD,_P25_Complaint_Radio_System_-_Revi (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Owner: _____ *(print name)* _____

(signature)

Employee 1: _____ *(print name)* _____

(signature)

Employee 2: _____ *(print name)* _____

(signature)

Employee 3: _____ *(print name)* _____

(signature)

STATE OF _____

COUNTY OF _____

Sworn to and subscribed before me this ____ day of _____, 20____, by _____, who is/are personally known to me ***or*** *who has/have produced _____ as identification.*

_____

_

NOTARY PUBLIC – STATE OF _____

Type or print name:

_____

Commission No.: _____

(Seal) *Commission Expires:* _____

Attachment: 25._19-P-153JRD,_P25_Complaint_Radio_System_-_Revi (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

10.0 CONFLICT OF INTEREST FORM

I HEREBY CERTIFY that:

1. I, *(printed name)* _____, am the *(title)* _____ and the duly authorized representative of the firm of *(Firm Name)* _____ whose address is _____, and that I possess the legal authority to make this affidavit on behalf of myself and the firm for which I am acting; and,

2. Except as listed below, no employee, officer, or agent of the firm have any conflicts of interest, real or apparent, due to ownership, other clients, Contracts, or interests associated with this project; and,

3. This proposal is made without prior understanding, agreement, or connection with any corporation, firm, or person submitting a proposal for the same services, and is in all respects fair and without collusion or fraud.

EXCEPTIONS to items above (List): _____

_____

_

Signature: _____

Printed Name: _____

Firm Name: _____

Date: _____

STATE OF _____

COUNTY OF _____

Sworn to and subscribed before me this ____ day of _____, 20____, by _____, who is/are personally known to me ***or*** *who has/have produced _____ as identification.*

_____

NOTARY PUBLIC – STATE OF _____

Type or print name:

_____

Commission No.: _____

(Seal) *Commission Expires:* _____

Attachment: 25._19-P-153JRD,_P25_Complaint_Radio_System_-_Revi (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

11.0 DRUG-FREE WORK PLACE

The undersigned firm, in accordance with Florida statute 287.087, hereby certifies that _____

_____does:
(Name of Firm)

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.

3. Give each employee engaged in providing the commodities or contractual services that are proposed a copy of the statement specified in subsection (1).

4. In the statement specified in subsection (1), notify the employees that, as a condition of working on the commodities or contractual services that are under proposal, the employee will propose by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contender to, any violation of Chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.

5. Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.

6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

As the person authorized to sign the statement, I certify that this firm complies fully with the above requirements.

_____ _____
Name and Title Date

_____
Signature

_____
Firm

_____
Street address

_____
City, State, Zip

Attachment: 25._19-P-153JRD,_P25_Complaint_Radio_System_-_Revi (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

12.0 CERTIFICATION REGARDING DEBARMENT (PRIME)

Certification Regarding Debarment, Suspension,
And Other Responsibility Matters
Primary Covered Transactions

TO BE COMPLETED BY PRIME CONTRACTOR

A. The prospective primary participant (contractor) certifies to the best of its knowledge and belief, that it and its principals (subcontractors and suppliers):

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

2. Have not within a three (3) year period preceding this bid proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property.

3. Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (1) (b) of this certification; and

4. Have not within a three-year period preceding this bid proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

B. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this bid proposal.

_____ _____
Name and Title Date

_____
Signature

_____
Firm

_____
Street address

_____
City, State, Zip

Attachment: 25._19-P-153JRD,_P25_Complaint_Radio_System_-_Revi (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

13.0 CERTIFICATION REGARDING DEBARMENT (SUB)

Certification Regarding
Debarment, Suspension, Ineligibility
And Voluntary Exclusion

TO BE COMPLETED BY ALL SUB-CONTRACTORS

A. The prospective participant (sub-contractor) certifies to the best of its knowledge and belief, that it and its principals (subcontractors and suppliers):

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

2. Have not within a three (3) year period preceding this bid proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property.

3. Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (1) (b) of this certification; and

4. Have not within a three-year period preceding this bid proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

B. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this bid proposal.

_____ _____
Name and Title Date

_____
Signature

_____
Firm

_____
Street address

_____
City, State, Zip

Attachment: 25._19-P-153JRD,_P25_Complaint_Radio_System_-_Revi (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

14.0 CERTIFICATION REGARDING PROHIBITION AGAINST CONTRACTING WITH SCRUTINIZED COMPANIES

I hereby certify that neither the undersigned entity, nor any of its wholly owned subsidiaries, majority-owned subsidiaries, parent companies, or affiliates of such entities or business associations, that exists for the purpose of making profit have been placed on the Scrutinized Companies that Boycott Israel List created pursuant to s. 215.4725 of the Florida Statutes, or are engaged in a boycott of Israel.

In addition, if this solicitation is for a contract for goods or services of one million dollars or more, I hereby certify that neither the undersigned entity, nor any of its wholly owned subsidiaries, majority- owned subsidiaries, parent companies, or affiliates of such entities or business associations, that exists for the purpose of making profit are on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, created pursuant to s.
215.473 of the Florida Statutes, or are engaged in business operations in Cuba or Syria as defined in said statute.

I understand and agree that the County may immediately terminate any contract resulting from this solicitation upon written notice if the undersigned entity (or any of those related entities of respondent as defined above by Florida law) are found to have submitted a false certification or any of the following occur with respect to the company or a related entity: (i) it has been placed on the Scrutinized Companies that Boycott Israel List, or is engaged in a boycott of Israel, or (ii) for any contract for goods or services of one million dollars or more, it has been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or it is found to have been engaged in business operations in Cuba or Syria.

Name of Respondent:_____

By:_____

(Authorized Signature)

Title:_____

Date:_____

Attachment: 25._19-P-153JRD,_P25_Complaint_Radio_System_-_Revi (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

15.0 PAYMENT/PERFORMANCE BOND - Project

Surety Assigned Bond No._____

PAYMENT/PERFORMANCE BOND

This bond is given to comply with §255.05, Florida Statutes.

CONTRACTOR	SURETY	OWNER
[*name*]	_____	County of Volusia
[*principal business address*]	_____	123 W. Indiana Avenue
[*phone number*]	_____	Deland, FL 32720
		(386) 736-5920

PROJECT NAME: P25 Compliant Radio System (excluding tower construction)

COUNTY CONTRACT NO.: 19-P-153JRD

PROJECT DESCRIPTION:

BY THIS BOND, We [*contractor*], as Contractor, and _____, a corporation, as Surety, are bound to the County of Volusia, Florida, herein called Owner, in the sum of $[xx,xxx,xxx.xx], for payment of which we bind ourselves, our heirs, personal representatives, successors, and assigns, jointly and severally.

THE CONDITION OF THIS BOND is that if Contractor:

1. Performs the contract dated [*execution date*], between Contractor and Owner for implementation of a P25 compliant radio system (excluding tower construction), the contract documents being made a part of this bond by reference (which include all Contract Documents as defined in the Contract Documents, including this surety bond, and such alterations as may be made in said Contract Documents as therein provided for), at the times and in the manner prescribed in the contract; and

2. Promptly makes payments to all claimants, as defined in Section 255.05(1), Florida Statutes, supplying Contractor with labor, materials, or supplies, used directly or indirectly by Contractor in the prosecution of the work provided for in the contract; and

3. Pays Owner all losses, damages, expenses, costs, and attorney's fees, including appellate proceedings, that Owner sustains because of a default by Contractor under the contract; and

4. To the limits of § 725.06(2), Florida Statutes, shall indemnify and hold harmless Owner, their officers and employees, from liabilities, damages, losses and costs, including, but not limited to, reasonable attorney's fees, to the extent caused by the negligence, recklessness, or intentional wrongful misconduct of Contractor and persons employed or utilized by Contractor in the performance of the construction contract; and

Attachment: 25._19-P-153JRD,_P25_Complaint_Radio_System_-_Revi (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

5. Performs the guarantee of all work and materials furnished under the contract for the time specified in the contract, then this bond is void; otherwise it remains in full force.

6. Any action instituted by a claimant under this bond for payment must be in accordance with the notice and time limitation provisions in Section 255.05(2) and (10), Florida Statutes.

7. Any changes in or under the contract documents and compliance or noncompliance with any formalities connected with the contract or the changes do not affect Surety's obligation under this bond, and Surety does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications.

IN TESTIMONY WHEREOF, witness the hands and seals of the parties hereto this _____ day of _____, 20___.

(If sole Ownership or Partnership, two (2) Witnesses required).
(If Corporation, Secretary only will witness/attest and affix seal).

[TYPE LEGAL NAME OF CONTRACTOR]

By: _____
Title: _____
Print Name: _____

WITNESS:

_____
Corporate Secretary or Witness
Print Name: _____

(affix corporate seal)

WITNESS:

_____
Print Name: _____

[Name of Corporate Surety]

By:_____
ATTORNEY-IN-FACT
PrintName: _____

(affix corporate seal)

(Power of Attorney must be attached)
*A.M. Best No.:*_____
*NAIC No.:*_____

Attachment: 25._19-P-153JRD,_P25_Complaint_Radio_System_-_Revi (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

16.0 PAYMENT/PERFORMANCE BOND – Tower Construction

Surety Assigned Bond No._____

PAYMENT/PERFORMANCE BOND

This bond is given to comply with §255.05, Florida Statutes.

CONTRACTOR	SURETY	OWNER
[*name*]	_____	County of Volusia
[*principal business address*]	_____	123 W. Indiana Avenue
[*phone number*]	_____	Deland, FL 32720
		(386) 736-5920

PROJECT NAME: P25 Compliant Radio System – Tower Construction

COUNTY CONTRACT NO.: 19-P-153JRD

PROJECT DESCRIPTION:

BY THIS BOND, We [*contractor*], as Contractor, and _____, a corporation, as Surety, are bound to the County of Volusia, Florida, herein called Owner, in the sum of $[xx,xxx,xxx.xx], for payment of which we bind ourselves, our heirs, personal representatives, successors, and assigns, jointly and severally.

THE CONDITION OF THIS BOND is that if Contractor:

1. Performs the contract dated [*execution date*], between Contractor and Owner for construction of a radio tower and associated infrastructure, the contract documents being made a part of this bond by reference (which include all Contract Documents as defined in the Contract Documents, including this surety bond, and such alterations as may be made in said Contract Documents as therein provided for), at the times and in the manner prescribed in the contract; and

2. Promptly makes payments to all claimants, as defined in Section 255.05(1), Florida Statutes, supplying Contractor with labor, materials, or supplies, used directly or indirectly by Contractor in the prosecution of the work provided for in the contract; and

3. Pays Owner all losses, damages, expenses, costs, and attorney's fees, including appellate proceedings, that Owner sustains because of a default by Contractor under the contract; and

4. To the limits of § 725.06(2), Florida Statutes, shall indemnify and hold harmless Owner, their officers and employees, from liabilities, damages, losses and costs, including, but not limited to, reasonable attorney's fees, to the extent caused by the negligence, recklessness, or intentional wrongful misconduct of Contractor and persons employed or utilized by Contractor in the performance of the construction contract; and

Attachment: 25._19-P-153JRD,_P25_Complaint_Radio_System_-_Revi (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

5. Performs the guarantee of all work and materials furnished under the contract for the time specified in the contract, then this bond is void; otherwise it remains in full force.

6. Any action instituted by a claimant under this bond for payment must be in accordance with the notice and time limitation provisions in Section 255.05(2) and (10), Florida Statutes.

7. Any changes in or under the contract documents and compliance or noncompliance with any formalities connected with the contract or the changes do not affect Surety's obligation under this bond, and Surety does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work or to the specifications.

IN TESTIMONY WHEREOF, witness the hands and seals of the parties hereto this _____ day of _____, 20___.

(If sole Ownership or Partnership, two (2) Witnesses required).
(If Corporation, Secretary only will witness/attest and affix seal).

[TYPE LEGAL NAME OF CONTRACTOR]

By: _____
Title: _____
Print Name: _____

WITNESS:

_____
Corporate Secretary or Witness
Print Name: _____

(affix corporate seal)

WITNESS:

_____
Print Name: _____

[Name of Corporate Surety]

By:_____
ATTORNEY-IN-FACT
PrintName: _____

(affix corporate seal)

(Power of Attorney must be attached)
*A.M. Best No.:*_____
*NAIC No.:*_____

Attachment: 25._19-P-153JRD,_P25_Complaint_Radio_System_-_Revi (2022-R-8 : Purchase of a P25 Radio Communications Equipment -

Volusia County
FLORIDA

BUDGET AND ADMINISTRATIVE SERVICES
Purchasing and Contracts
123 West Indiana Avenue • Room 302 • DeLand, FL 32720-4608
Phone: 386-736-5935 • Fax: 386-736-5972
e-mail: purchasing@volusia.org • www.volusia.org

December 6, 2019

Subject: ADDENDUM NO. 7 to RFP No. 19-P-153JRD, "P25 Compliant Radio System"

This addendum is being issued to clarify questions and make changes to the Request for Proposals (RFP). This document and all changes, as listed below, shall become an integral part of the RFP and shall take precedence over what was previously stated in the RFP document.

Questions and Answers

Q1: Would the County consider modifying the specification included in Exhibit A - Technical Specifications: Section 4.7.4 Control Channel Reliability. A. "In the event that the control channel of a simulcast cell or single-site fails, the failure shall be detected and any of the remaining channels shall be automatically assigned to transmit the control signaling." to read: "In the event that the control channel fails, the failure shall be detected and one of the remaining base stations shall be automatically assigned to transmit the control signaling."

A1: The specification as stated by the County in Section 4.7.4 will remain. Respondents shall describe in their submittal how their solution addresses control channel reliability. Alternative approaches will be considered by the County.

Please sign and attach this addendum to your proposal submittal. If you have any questions regarding this information, please contact John Duckworth, Procurement Analyst II, at 386-822-5792 or jduckworth@volusia.org.

Pamela Wilsky, CPPO, CPPB
Activity Project Manager

PW:jrd

Please sign and return with proposal for 19-P-153JRD, "P25 Compliant Radio System"

Vendor: _____

Signed by (*Name/Position*): _____

Phone No.: _____ Date: _____

FAILURE TO RETURN THIS ENTIRE ADDENDUM WITH THE SUBMITTAL MAY CAUSE THE SUBMISSION TO BE RENDERED **NON-RESPONSIVE.**

Attachment: 26._Addendum_7 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

Volusia County
FLORIDA

BUDGET AND ADMINISTRATIVE SERVICES
Purchasing and Contracts
123 West Indiana Avenue • Room 302 • DeLand, FL 32720-4608
Phone: 386-736-5935 • Fax: 386-736-5972
e-mail: purchasing@volusia.org • www.volusia.org

December 10, 2019

Subject: ADDENDUM NO. 8 to RFP No. 19-P-153JRD, "P25 Compliant Radio System"

This addendum is being issued to clarify questions and make changes to the Request for Proposals (RFP). This document and all changes, as listed below, shall become an integral part of the RFP and shall take precedence over what was previously stated in the RFP document.

Q1: Will the County consider a thirty day extension of the current RFP due date of January 15, 2020?

A1: No. The closing date for this RFP 19-P-153JRD remains January 15, 2020 at 3:00p.m. EST.

Please sign and attach this addendum to your proposal submittal. If you have any questions regarding this information, please contact John Duckworth, Procurement Analyst II, at 386-822-5792 or jduckworth@volusia.org.

Pamela Wilsky, CPPO, CPPB
Activity Project Manager

PW:jrd

Please sign and return with proposal for 19-P-153JRD, "P25 Compliant Radio System"

Vendor: _____

Signed by (*Name/Position*):

_____

Phone No.: _____ Date: _____

FAILURE TO RETURN THIS ENTIRE ADDENDUM WITH THE SUBMITTAL MAY CAUSE THE SUBMISSION TO BE RENDERED **NON-RESPONSIVE.**

Attachment: 27._Addendum_8 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

BUDGET AND ADMINISTRATIVE SERVICES
Purchasing and Contracts
123 West Indiana Avenue • Room 302 • DeLand, FL 32720-4608
Phone: 386-736-5935 • Fax: 386-736-5972
e-mail: purchasing@volusia.org • www.volusia.org

December 12, 2019

Subject: ADDENDUM NO. 9 to RFP No. 19-P-153JRD, "P25 Compliant Radio System"

This addendum is being issued to clarify questions and make changes to the Request for Proposals (RFP). This document and all changes, as listed below, shall become an integral part of the RFP and shall take precedence over what was previously stated in the RFP document.

Q1: Can the County furnish shelter drawings or arrange a time for a physical inspection of the Farmton site shelter so that vendors can quote the necessary electrical and grounding systems as required by the RFP?

A1: A diagram and manufacturer specs for the shelter planned to be placed at the Farmton site have been attached to this addendum.

Q2: On the pricing pages for 1.42 CR304 Microwave back haul the RFP states " -48VDC Battery Plant"
At the site walks it was stated by Volusia County staff that we were to attach to the 48 VDC Battery Plant that is existing at the site. Please clarify.

A2: The Contractor will use the -48Vdc power plant existing at CR304 to power Volusia's microwave equipment. The contractor will have to supply one flatpack module to power Volusia's microwave. The Contractor shall install a DC breaker panel in Volusia's microwave rack and also provide DC disconnect breakers (50-100 Amps for example) in Flagler's distribution panel to feed Volusia' rack (s). There are two spare ports available on the existing dehydrator which can be used with Volusia County's equipment.

Q3: On the pricing pages for 1.9 EOSCC Dispatch Center the RFP states "Control Station Radio for P25 Conventional Backup Repeaters via Conventional Gateways" No reference to this is listed anywhere else in the RFP document. Please provide clarification and details for this specification.

A3: This item was inadvertently carried over in the template and should be stricken.

Q4: Can the engineering company of Bechtol provide the bearing capacity values or skin friction and bearing for the geotech report?

A4: Bechtol has advised that the information requested is not available.

Attachment: 28._Addendum_9 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

Please note the last day for questions was Friday, December 6, 2019 no other new questions may be submitted, however follow up questions in response to this Addendum No. 9 may be submitted.

Sign and attach this addendum to your proposal submittal. If you have any questions regarding this information, please contact John Duckworth, Procurement Analyst II, at 386-822-5792 or jduckworth@volusia.org.

Pamela Wilsky, CPPO, CPPB
Interim Director of Purchasing and Contracts

PW:jrd

Please sign and return with proposal for 19-P-153JRD, "P25 Compliant Radio System"

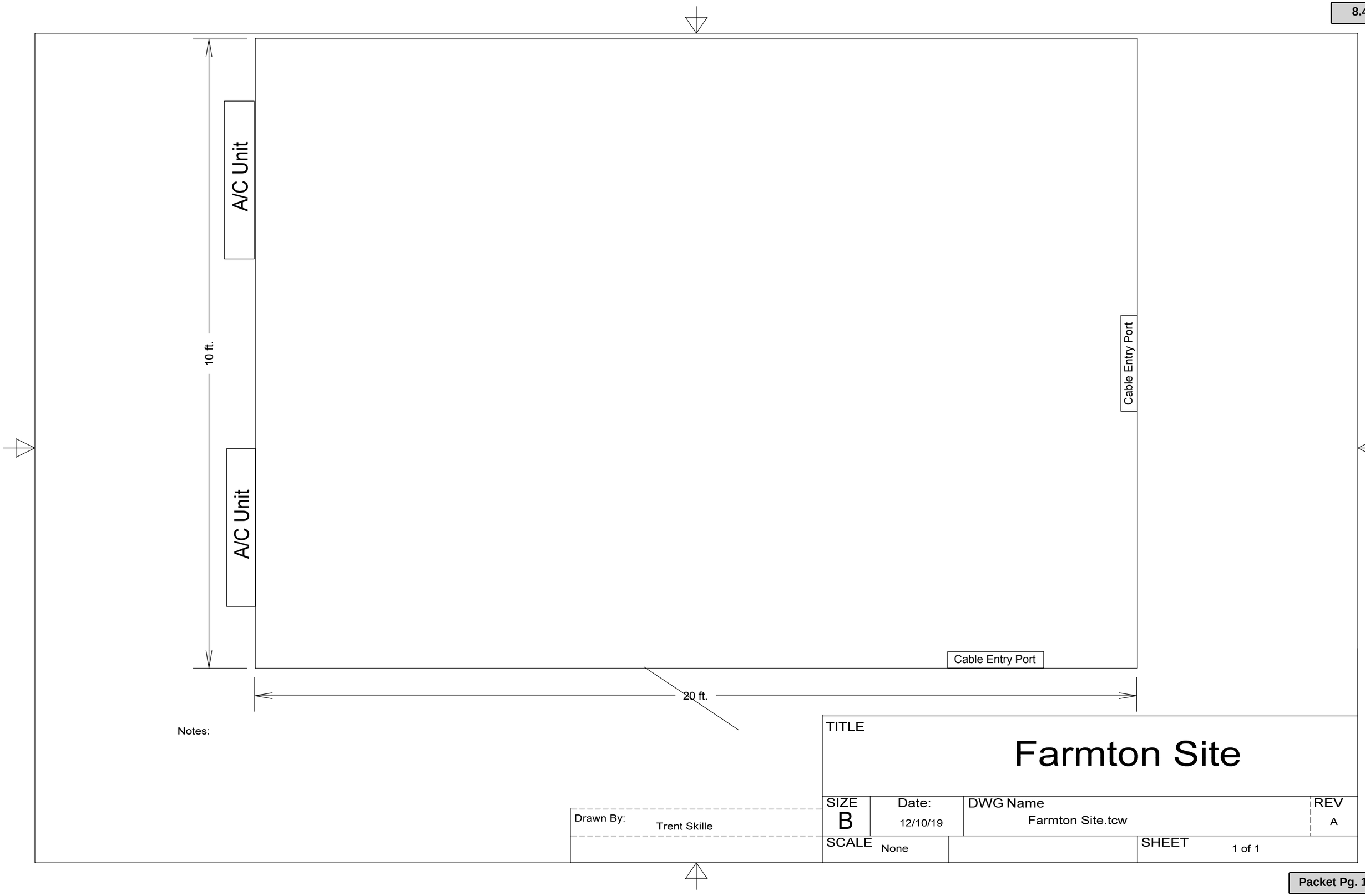
Vendor: _____

Signed by (*Name/Position*):
_____

Phone No.: _____ Date:_____

FAILURE TO RETURN THIS ENTIRE ADDENDUM WITH THE SUBMITTAL MAY CAUSE THE SUBMISSION TO BE RENDERED **NON-RESPONSIVE**.

Attachment: 28._Addendum_9 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)



Notes:

TITLE

Farmton Site

SIZE	Date:	DWG Name	REV
B	12/10/19	Farmton Site.tcw	A

Drawn By: Trent Skille

SCALE None

SHEET 1 of 1

Attachment: 28._Addendum_9 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

REVISIONS				
INIT.	REV	DESCRIPTION	DATE	APPROVED
SL	–	RELEASE FOR APPROVAL	3/28/00	G. BRADSHAW
SL	A	REVISED DESIGN CRITERIA	7/13/00	

ANDREW CORPORATION
SHELTER MODEL RCS1020-355T1-95
FOR THE STATE OF FLORIDA

BUSINESS UNIT HEADQUARTERS
AND MANUFACTURING FACILITY

ANDREW – ANG
27 Amlajack Blvd
Newnan, GA U.S.A. 30265
Telephone: (770) 251-8777
FAX: (770) 304-4640

MANUFACTURING FACILITY

ANDREW – AKAN
1290 Southwest 10th Road
Burlington, KS U.S.A. 66839
Telephone: (316) 364-5200
FAX: (316) 364-5128

DESIGN OPTIONS

SPECIFIC PROJECT DRAWINGS SHALL SPECIFY WHICH OPTIONS APPLY TO A PARTICULAR SHELTER MODEL. ALL UNITS OF A PARTICULAR MODEL NUMBER SHALL BE CONSTRUCTED WITH THE SAME DESIGN OPTIONS.

STRUCTURAL

FLOOR

SLAB THICKNESS
- ■ 2F 2" THICK
- □ 3F 3" THICK

DESIGN LIVE LOAD
- □ PSF125F 125 PSF LIVE LOAD
- ■ PSF200F 200 PSF LIVE LOAD

ROOF

OVERHANG
- □ OHØR NO OVERHANG
- ■ OH3R 3" OVERHANG

DESIGN SNOW LOAD
- ■ PSF60R 60 PSF SNOW LOAD
- □ PSF100R 100 PSF SNOW LOAD

WALLS

WALL PANEL THICKNESS
- □ 3W 3" THICK
- ■ 4W 4" THICK

INTERIOR FINISHES

FLOOR

SUBFLOOR
- ■ SFØF NO SUBFLOOR
- □ SFWF PLYWOOD, _____ THICK
- □ SFCF CEMENT BOARD, ____THICK

FLOOR FINISH
- ■ FFTF VINYL COMPOSITION TILE
- □ FFOF OTHER _____

CEILING

PANELLING
- ■ FRP50C 1/2" FRP
- □ FRP75C 3/4" FRP
- □ CFOC OTHER _____

WALLS

PANELLING
- ■ FRP50W 1/2" FRP
- □ FRP75W 3/4" FRP
- □ WFOW OTHER _____

INSULATION

FLOOR
- ■ R13F NOMINAL R13 FLOOR

ROOF
- □ R2R NOMINAL R2 ROOF
- ■ R13R NOMINAL R13 ROOF
- □ R24R NOMINAL R24 ROOF

WALLS
- □ R2W NOMINAL R2 WALLS
- ■ R13W NOMINAL R13 WALLS
- □ R24W NOMINAL R24 WALLS

PANEL FINISH

FLOOR

INTERIOR SURFACE
- □ FFF FLOAT FINISH
- ■ FTF HARD TROWEL FINISH

ROOF

EXTERIOR SURFACE
- ■ FBR BROOM FINISH

WALLS

EXTERIOR SURFACE
- ■ FAW EXPOSED AGGREGATE
- □ FSW SMOOTH (FLOAT)
- □ FFLW FORMLINER _____
- □ FOW OTHER _____

DESIGN CRITERIA

FLOOR LIVE LOAD*, PSF	200		
ROOF LIVE (SNOW) LOAD*, PSF	60		
		WINDWARD	LEEWARD	ROOF
WIND LOAD, MPH (3 SECOND GUST)	150			
UBC, PSF		48.8	-30.5	-42.7
BOCA, PSF		60.2	-42.0	-54.1
SBCCI, PSF		54.5	N/A	-63.6
OBBC, PSF		60.2	-42.0	-54.1
ASCE7		29.7	-35.9	-76.3

SEISMIC ZONE IV	"Z"="Aa"=0.40
UBC, HORIZONTAL SEISMIC COEFFICIENT	0.37
BOCA, HORIZONTAL SEISMIC COEFFICIENT	0.22
SBCCI, HORIZONTAL SEISMICCOEFFICIENT	0.22
OBBC, HORIZONTAL SEISMIC COEFFICIENT	0.22
FIRE RATING OF WALLS	
3" WALL (OPT "3W")	1 HOUR
4" WALL (OPT "4W")	2 HOURS

* DEPENDS ON DESIGN OPTION SELECTED.

BUILDING CODE DATA

MODEL CODE	EDITION	CONSTRUCTION TYPE	OCCUPANCY/ USE GROUP
UBC	1991	V-N	B4
	1994	V-N	S2
	1997	V-N	S2
BOCA	1990	5B	S2
	1993	5B	S2
	1996	5B	S2
SBCCI	1991	VI-UNPROTECTED	S2
	1994	VI-UNPROTECTED	S2
	1997	VI-UNPROTECTED	S2
OBBC	1995	5B	S2
	1996	–	–
	1998	–	–
NEC	1993	–	–
	1996	–	–

1997 FLORIDA ENERGY EFFICIENCY CODE EXEMPT

MODEL NUMBER DESIGNATION

RCS 10 – 20 – 355T1 – 95

- REINFORCED CONCRETE SHELTER SYSTEM
- WIDTH: 8' – 12'
  EXAMPLE: 11.5' = 115
  EXAMPLE 10.0' = 10
- LENGTH: 8' – 32'
- DETAIL NUMBER
  DIFFERENTIATES SHELTERS OF THE SAME SIZE WITH DIFFERENT LAYOUTS
- FINISHED INTERIOR HEIGHT: 8' – 10'
- FLORIDA 1997 SBCCI CODE UPDATES

BASIS OF DESIGN

THESE PROJECT DRAWINGS ARE INTENDED TO BE USED IN CONJUNCTION WITH THE "SYS-RCS" REINFORCED CONCRETE SHELTER SYSTEM DRAWINGS (SHEETS 1 – 18). SEE "SYS-RCS" FOR ALL TYPICAL STRUCTURAL AND ARCHITECTURAL DETAILS, AND TYPICAL CASTING LAYOUTS. WHERE TYPICAL DETAILS ARE NOT APPLICABLE, PROJECT DRAWINGS SHALL SHOW SPECIFIC DESIGN DETAILS.

ANDREW CORPORATION
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FAX: (303) 381-5380

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DRAWN BY: S. LANKFORD	DATE: 3/28/00	TITLE: SYSTEM DESIGN DATA	
CHECKED BY: S. CLARK	DATE: 5/18/00	DIAL CALL/NEXTEL COMMUNICATIONS	
PROJECT ENGR	DATE		
PROJECT MGR: G. BRADSHAW	DATE: 7/10/00	SIZE: B / FSCM NO. / DRAWING NUMBER: RCS1020-355T1-95	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES (MM)		SCALE: N.T.S. / PLOT SCALE: .25=12 / SHEET 1 OF 9	READ NO. ER03276A

Attachment: 28_Addendum_9 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

ITEM	QTY	U/M	PART NO.	DESCRIPTION
1	1	EA	RCS1020-355T-295	CONCRETE SHELTER CASTING
2				
3	1	EA	367981-123CE-6	DOOR, 3'-6"x7', NH, 18GA, CYLINDRICAL PREP, PAINTED COCOA
4	1	EA	367978-17	RHRB LOCKSET, UNICAN (1000-28-US26D)
5	1	EA	379890-8-2	BEST Z1 CORE W/CORE KEY
6	1	BX	379890-10-1	HINGES, 4 1/2" X 4 1/2" STD. DUTY
7	1	EA	367981-164-360	THRESHOLD, 3'-6"
8	1	EA	379890-12	LOCKGUARD, PICKPLATE
9	1	EA	J21310	DRIP CAP, 44"
10	1	EA	367966-52	DOOR CANOPY, 30" x 42" - PAINTED COCOA
11	1	EA	-	OPEN DOOR ALARM (367959-1)
12	1	EA	367991-13	DOOR HOLDER
13	1	EA	379902-108	LITERATURE, HOLDER
14	1	EA	367986-318	SWITCH, MOLDED CASE/60 AMP (PART #QQ0200)
15	6	EA	366175-17-1	LIGHT, INTERIOR FLUOR. W/LENS & COVER
16	1	EA	366176-13	EMERGENCY LIGHT
17	1	EA	D21930-1	LIGHT, EXTERIOR WITH PHOTOCELL (WEATHERPROOF)
18	1	EA	367986-114	DISTRIBUTION PANEL COVER
19	12	EA	-	BULB, FLUORESCENT COOL WHITE (D21550)
20	1	EA	-	BULB, INCANDESCENT 100W (D21570)
21	1	EA	366250-15	SWITCH, MANUAL TRANSFER SP/200A
22				
23	1	EA	367986-40	DISTRIBUTION PANEL 200A, 40 SPACE
24	1	EA	-	GROUND BAR KIT, PK18GTA (DIST) (D21990)
25	1	EA	367981-170-2	1/4" BENT PLATE, THRESHOLD
26	4	EA	-	BREAKER, 15A/120V (D21410)
27	8	EA	-	BREAKER, 20A/120V (D21430)
28	2	EA	367986-139	BREAKER, 45A/240V
29				
30	8	EA	367986-3	BREAKER, 30A/240V
31	2	EA	-	BOX, 6" X 6" (367973-60)
32				
33				
34	1	EA	368016-4-2	POWER FAILURE ALARM
35	1	EA	367989-83	SURGE ARRESTOR , TRANSTECTOR #CP2365
36	2	EA	367328-31-9	A/C MARVAIR AVP 5 TON #AVP60ACA5N
37	1	EA	-	TOWER LIGHT CONTROLLER (CUSTOMER SUPPLIED & INSTALLED)
38	1	EA	367961-14	TIMER 24 HOUR
39	2	EA	367986-32	BREAKER 30A/120V
40	2	EA	367316-1-6A	A/C INSTALLATION KIT
41	1	EA	367961-30	7-DAY TIMER (LEAD LAG)
42	1	EA	367960-72	APPLETON GENERATOR RECEPTACLE #AJA20034-200RS
43				
44	1	EA	D21470	BREAKER 15A/240V
45				
46	3	EA	-	LUG, 2 HOLE FOR #2 SOLID (367970-67)
47	2	EA	E21590	HI/LO TEMP
* 48	75	FT	-	WIRE, #2 SOLID TINNED COPPER (367956-26)
49	28	FT	367982-10	TRIM, 1/2" EDGE TRIM FOR TELCO BOARD
50	1	EA	368013-4-103.5	PANELING, FRP, 1/2" x 48" x 103.5"
* 51	5	FT	-	2" RUNNING THREAD (367952-22)
52	50	EA	-	HALO GROUND STAND-OFFS (367959-30)
* 53	10	EA	-	DOUBLE CRIMP CONNECTOR, #2 - #2
* 54	10	EA	-	DOUBLE CRIMP CONNECTOR, #2 - #6
* 55	200	FT	-	WIRE, #2 GREEN COPPER STRANDED (367956-8)
* 56	55	FT	-	WIRE #6 GREEN COPPER STRANDED (023170)
57				
58	2	EA	368007-40-1	WAVEGUIDE PLATE, 24 PORT, 4"
* 59	4	EA	-	LUG, 2 HOLE, CRIMP, #2 WIRE (367970-52)
* 60	28	EA	-	LUG, 2 HOLE, CRIMP, #6 WIRE (208172)
61	2	EA	367964-41	GROUNDBAR, 1/4" x 4" x 30"
* 62	2	FT	-	WIRE, #2 WELDING CABLE (367956-121)
63	3	EA	-	CADWELD, WELD METAL #XL65 (379996-4)
64	1	EA	366250-43	SWITCH, FUSED 2P/200A SQD#D224NRB
65	4	EA	367963-27	FUSES
* 66	20	FT	-	WIRE, #3/0 THHN CABLE (367956-22)
67	1	EA	368FT-1020	FLOOR TILE KIT
68	1	EA	368RR13-1020	CEILING INSULATION & FRAMING KIT
69	1	EA	368WR13-1020-95	WALL INSULATION & FRAMING KIT
70	1	EA	368P4-1020-95	INTERIOR FRP PANELLING KIT
71	2	EA	-	1 1/2" PVC TERMINAL ADAPTORS, SCH. 40, (367996-124)
72	2	EA	-	1/2" PVC TERMINAL ADAPTORS, SCH. 40 (367996-18)
73				
74				
75	2	EA	-	GROUNDING BUSHING - 2" (367950-15)

ITEM	QTY	U/M	PART NO.	DESCRIPTION
76	1	EA	367964-42-2	TRAPEZE GROUND BAR KIT
77	2	FT	-	PVC, 1/2", SCH. 40, (367996-65)
78	1	EA	-	BOX, 2" x 4" WEATHERPROOF (367973-3)
79	1	EA	-	COVER, 2" x 4" DUPLEX WEATHERPROOF (367973-109)
80	1	EA	-	RECEPTACLE, DUPLEX GFI, 20A/120V (366200-63)
81				
82	7	EA	-	RECEPTACLE, DUPLEX 20A/120V (D22790)
83				
84	2	EA	-	SWITCH, 15A/120V (D22990)
85				
86	1	EA	242315-1	TELCO GROUND BAR 4" x 10"
87	24	EA	367954-45	HANGER, HANGER BRACKET
88	1	EA	367976-45-36	WEATHERSTRIP, 3'-6" LONG
89	24	EA	-	HANGER, HAT BRACKET (J21430)
90	12	EA	367954-23	CLAMP, CORNER
91	4	EA	367954-26	CLAMP, SPICE
92	2	EA	367974-36-2	WIREWAY, CLOSING PLATE (4" x 4") W/O KNOCKOUTS
93	4	EA	367954-123-24	CABLE LADDER, 24"
94	1	EA	367974-16	WIREWAY, 4" x 4" x 5'
95	2	EA	367976-45-7	WEATHERSTRIP, 7'-0" LONG
96	1	EA	367976-20-5	WEATHERSTRIP, 3'-6" LONG (THRESHOLD)
97	1	EA	367962-18-1	FAN OUTLET ASSEMBLY
98	1	EA	367962-18	SQUIRREL VENT FAN
99	2	EA	-	1" FLEX CONDUIT 90° CONNECTOR (367984-5)
* 100	1	EA	-	2" LB W/COVER & GASKET (368016-109-1)
* 101	14	FT	-	1" FLEX CONDUIT (367984-4)
* 102	2	EA	-	1" FLEX CONDUIT STRAIGHT CONNECTOR (367984-6)
103	2	EA	-	UNISTRUT 1 5/8" (368017-22)
104				
105	1	EA	368007-51	WAVEGUIDE PLATE, 12 PORT, 4" 2x6 CONFIG
106				
107	6	EA	367976-76-2	CAULK VULKEM, BRONZE
108	1	EA	368007-29-1	WAVEGUIDE, 18-PORT 4"
109	1	EA	367968-53	FIRE EXTINGUISHER, 20 LB.
110	1	EA	367959-24	SMOKE DETECTOR, 120V
111	1	EA	367959-24-1	SMOKE DETECTOR RELAY
112	1	EA	379902-193	EYE WASH KIT
113				
114	.250	GAL	367988-30-5	PAINT, KEM-AQUA 600T, COCOA #8598 (FOR DOOR)
115	.250	GAL	367988-30-1	PRIMER, POLANE W2, GRAY (FOR DOOR)
* 116	1	EA	-	2" EMT CONDUIT (367967-16)
117	2	EA	367996-122-207	2" X 7" NIPPLE
118	1	EA	-	2" EMT BOX CONNECTOR (367969-1)
* 119	7	EA	-	2" LOCKNUTS (367951-7)

NOTE: QTY'S IN MATERIAL LIST WITH "*" ARE LISTED FOR REFERENCE ONLY. ACTUAL AS-BUILT QUANTITIES MAY VARY.

REVISIONS				
INIT.	REV	DESCRIPTION	DATE	APPROVED
SL	-	RELEASE FOR APPROVAL	3/28/00	G. BRADSHAW
SL	A	REVISED REVISION BLOCK	5/16/00	G. BRADSHAW
MH	B	ADDED ITEMS 22, 25, 116, 117, 118, 119	5/16/00	G. BRADSHAW
SL	C	DELETED ITEM #22, REVISED #116, 118, & 119	7/13/00	

SHEET	1	2	3	4	5	6	7	8	9
REVISION	A	C	B	B	-	-	-	B	-

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ANDREW

ANDREW CORPORATION
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FAX# (770) 501-6440

DRAWN BY: S. LANKFORD	DATE: 3/28/00
CHECKED BY: S. CLARK	DATE: 5/18/00
PROJECT MGR:	DATE:
PROJECT MGR: G. BRADSHAW	DATE: 7/10/00

TITLE: BILL OF MATERIAL
DIAL CALL, INC./NEXTEL COMMUNICATIONS

SIZE: B	FSCM NO.	DRAWING NUMBER: RCS1020-355T1-95	ER03277C
SCALE: N.T.S.	PLOT SCALE: .25=12	SHEET 2 OF 9	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES (MM)

Attachment: 28._Addendum_9 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

NOTES:

1. CONDUIT TO BE EMT OR RIGID UNLESS NOTED. MINIMUM SIZE OF CONDUIT AND FITTINGS IS 1/2" OR AS NOTED. UPSIZING IS PERMITTED. LAYOUT LOCATIONS ARE FOR REFERENCE ONLY AND MAY VARY UNLESS OTHERWISE NOTED.
2. ALL BOXES, LIGHT FIXTURES AND ELECTRICAL EQUIPMENT TO BE ± 1/2" UNLESS OTHERWISE NOTED. BOXES OR RECEPTACLES 6"x6" OR SMALLER SHALL NOT BE INSTALLED ON PANELING TRIM.
3. PACK EXTRA SET(S) OF FUSES (ITEM #65) IN LITERATURE HOLDER.
4. FOR RECTIFIER DROPS (STARTING ON THE LEFT AND PROCEEDING TO THE RIGHT:

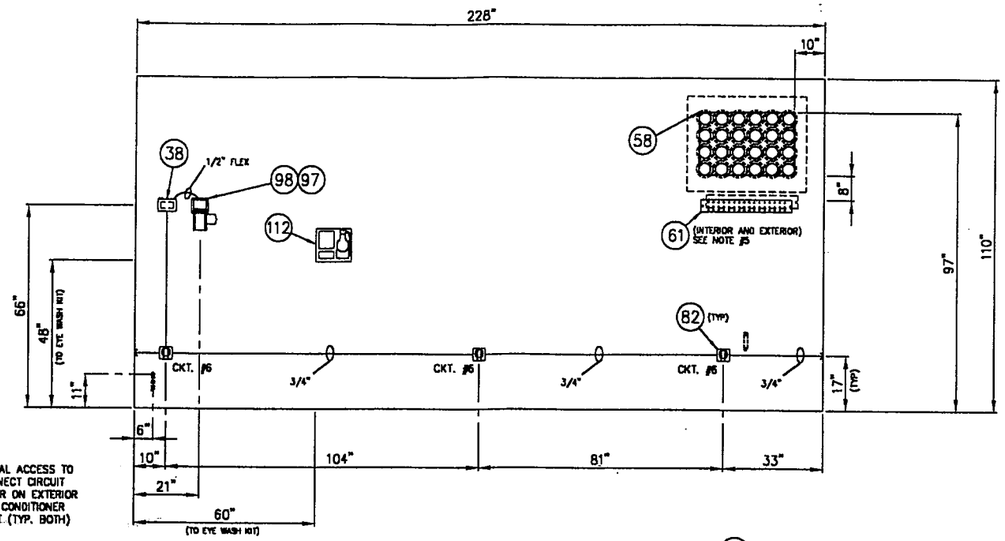
   RECTIFIER DROP #1 (PRIMARY) – COIL 7 FEET OF 1" FLEX WITH 5 FEET OF WIRE PAST END AND TY-RAP. INCLUDES:
   - RECTIFIER #1 (CKT #17,#19)
   - RECTIFIER #2 (CKT #18,#20)
   - RECTIFIER #3 (CKT #21,#23)
   - RECTIFIER #4 (CKT #22,#24)

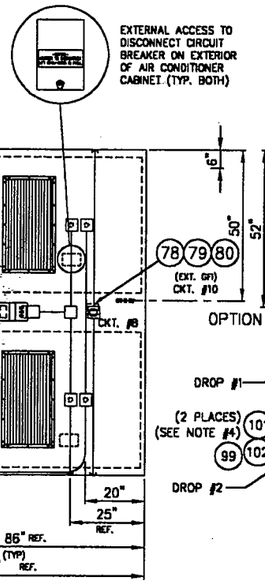
   RECTIFIER DROP #2 (SECONDARY) – COIL 7 FEET OF 1" FLEX WITH 5 FEET OF WIRE PAST END AND TY-RAP. INCLUDES:
   - RECTIFIER #5 (CKT #25,#27)
   - RECTIFIER #6 (CKT #26,#28)
   - RECTIFIER #7 (CKT #29,#31)
   - RECTIFIER #8 (CKT #30,#32)

5. SEE SHEET 4 FOR GROUNDING LAYOUT AND SHEET 5 FOR GROUNDING DETAILS.
6. COIL 5 FEET OF WIRE FROM CKT. #21 FOR FUTURE CUSTOMER USE.
7. INSERT ROMEX CONNECTOR IN KNOCKOUT IN 6X6 BOXES TO ALARM BLOCKS. IDENTIFY THE SHELTER ALARMS & PIGTAIL 2' OF ALARM WIRE IN 6" X 6" BOX FOR FUTURE TERMINATION IN RADIO INTEGRATION.
8. SURGE ARRESTOR (#35) TO BE INSTALLED IN RADIO INTEGRATION. POWER & ALARM WIRES TO BE TERMINATED AT END OF SURGE ARRESTOR CONDUIT LOCATION. COIL AN EXTRA 3 FEET OF WIRE FOR CONNECTION OF EQUIPMENT.
9. EXTERIOR TOWER LIGHT CONTROLLER/BOX IS CUSTOMER SUPPLIED AND INSTALLED BY OTHERS. IT IS ON THE BOM DRAWING FOR REFERENCE ONLY.
10. LABEL HI & LO TEMP ALARMS

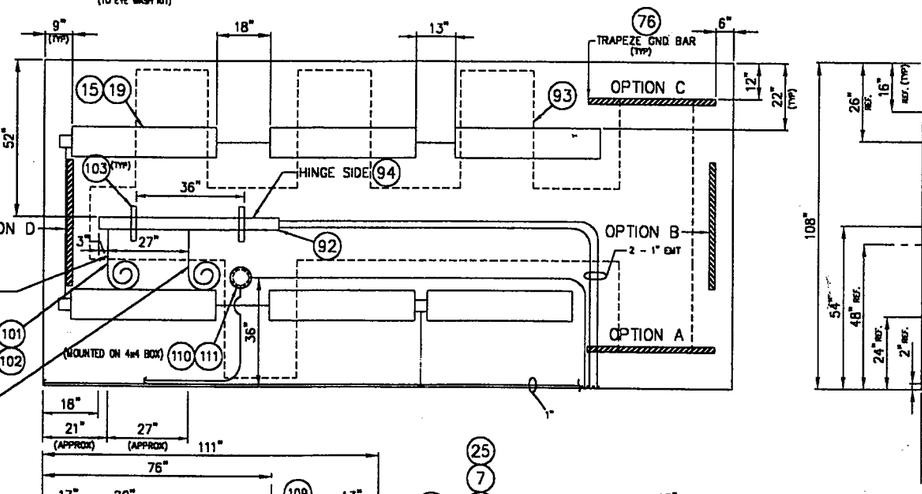
REVISIONS				
INIT.	REV	DESCRIPTION	DATE	APPROVED
SL	–	RELEASE FOR APPROVAL	3/28/00	G. BRADSHAW
MH	A	ADDED ITEMS 22, 25, 116, 118, 119	5/18/00	G. BRADSHAW
SL	B	ADDED (OPTION D) TRAPEZE GROUND BAR	7/13/00	

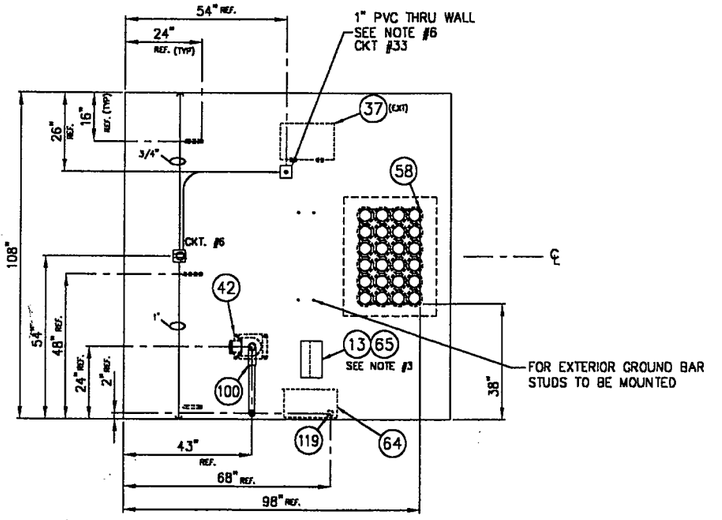
EXTERIOR DIMENSIONS	
LENGTH:	20'-0"
WIDTH:	10'-0"
HEIGHT:	10'-3"
INTERIOR DIMENSIONS	
LENGTH:	19'-0"
WIDTH:	9'-2"
HEIGHT:	9'-2"

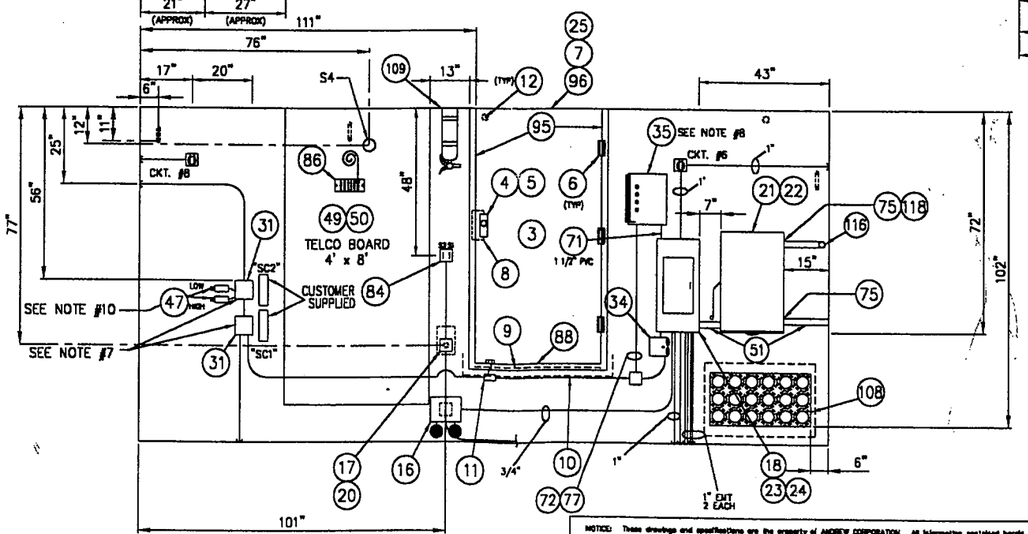




EXTERNAL ACCESS TO DISCONNECT CIRCUIT BREAKER ON EXTERIOR OF AIR CONDITIONER CABINET. (TYP. BOTH)







SYMBOL LEGEND

- 4"x4" JUNCTION BOX
- 20A 125V SINGLE RECEPT. IN A 4"x4" BOX
- 20A 125V DUPLEX RECEPT. IN A 4"x4" BOX
- 20A 125V DOUBLE DUPLEX RECEPT. IN A 4"x4" BOX
- 20A 250V SINGLE RECEPT. IN A 4"x4" BOX
- 20A 125V SINGLE RECEPT. IN A 2"x4" BOX
- 20A 125V DUPLEX RECEPT. IN A 2"x4" BOX
- 2"x4" JUNCTION BOX
- 15A 120V LIGHT SWITCH IN A 4"x4" BOX
- 2-15A 120V LIGHT SWITCHES IN A 4"x4" BOX
- 15A 120V LIGHT SWITCH IN A 2"x4" BOX
- HINGE COVER BOX (HINGE TO LEFT IS SHOWN)

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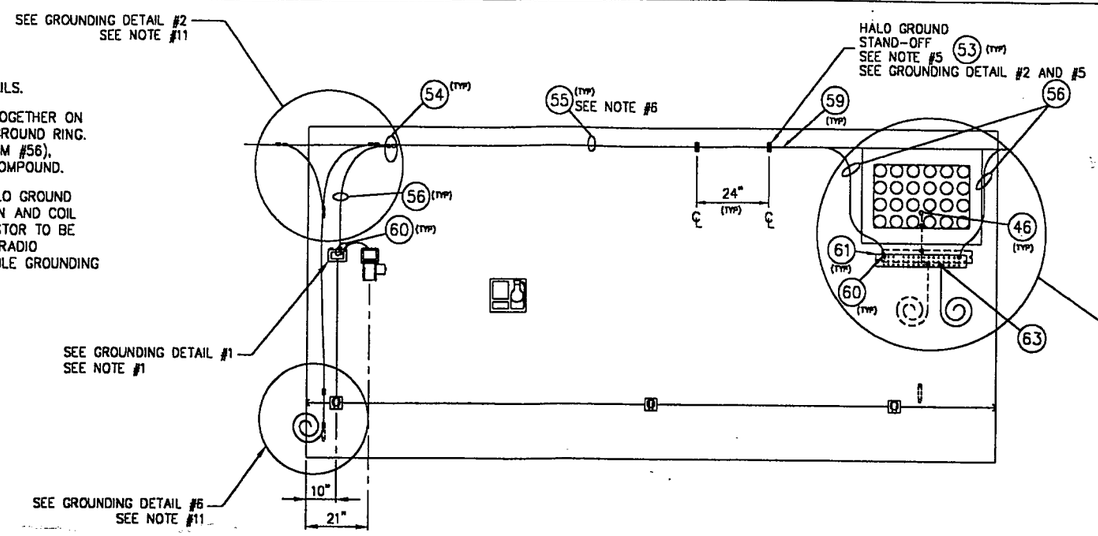
DRAWN BY: S. LANKFORD	DATE: 3/28/00	STYLE: EQUIPMENT LAYOUT
CHECKED BY: S. CLARK	DATE: 5/18/00	DIAL CALL, INC./NEXTEL COMMUNICATIONS
PROJECT MGR: G. BRADSHAW	DATE: 7/10/00	SIZE: B; FSCM NO.; DRAWING NUMBER: RCS1020-355T1-95
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES (mm)		SCALE: 1/4" = 1'-0"; PLOT SCALE: .25 = 12; SHEET 3 OF 9; ACAD NO. ER032788

Attachment: 28._Addendum_9 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

NOTES:

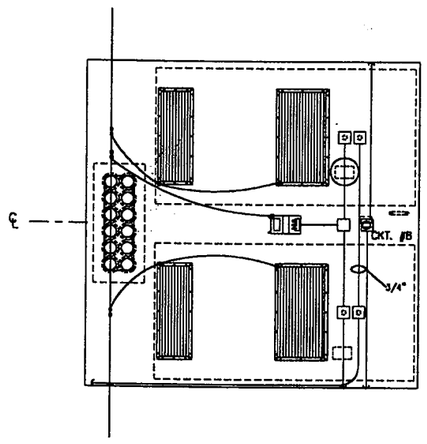
1. GROUND ALL BOXES AND METALLIC OBJECTS LARGER THAN 4" x 4" WITH #6 AWG AS SHOWN–ADD GREEN STRANDED WIRE (ITEM #56) AND 2–HOLE CRIMP LUGS (ITEM #60)
2. A NO–OXIDE COMPOUND IS TO BE APPLIED TO ALL CONNECTIONS, GROUND BARS AND HALO. EXCESS GREASE IS TO BE WIPED CLEAN. REMOVE PAINT AND APPLY THE NO–OXIDE COMPOUND BETWEEN ALL GROUNDING LUG CONNECTIONS AS SPECIFIED.
3. MAINTAIN A 9" RADIUS MIN. WHEN BENDING ALL GROUNDING WIRE FOR THE HALO.
4. INSTALL A 2–HOLE MECHANICAL LUG (1 EACH, ITEM #46) TO THE GENERATOR RECEPTACLE AND EXT. DISCONNECT.
5. HALO GROUND RING IS TO BE #2 GREEN COPPER STRANDED WIRE AND TO BE MOUNTED 6" OFF THE CEILING.
6. ALL GROUND POINTS ARE TO BE DIRECTED TOWARD THE NEAREST GROUND EXIT. ALL CONNECTIONS TO INTERIOR HALO GROUND RING TO BE DOUBLE CRIMPED.
7. CADWELD (1 EACH, ITEM #63) #2 (TINNED) SOLID WIRE (ITEM #48) TO THE INTERIOR AND EXTERIOR GROUND BARS WITH 10 FOOT COILS.
8. #2 AWG WELDING CABLE (ITEM #62) TO BE USED TO GROUND THE DOOR TO THE DOOR FRAME USING 2–HOLE CRIMP TYPE LUGS (ITEM #59).
9. CADWELD (ITEM #63) #2 (TINNED) SOLID WIRE (ITEM #48) TO THE EXTERIOR GROUND BAR AND CONNECT TO THE WAVEGUIDE ENTRY PORT WITH A 2–HOLE MECHANICAL LUG (ITEM #46).
10. #2 AWG WELDING CABLE (ITEM #62) TO BE USED TO GROUND THE EXTERIOR DOOR CANOPY TO THE DOOR FRAME USING 2–HOLE CRIMP TYPE LUGS (ITEM #59).
11. OMNI DROPS TO CONSIST OF #2 GREEN COPPER STRANDED (ITEM #55) (TOP PART) CRIMPED TO #2 SOLID TINNED COPPER (ITEM #48) (BOTTOM PART) COILED 10 FEET.
12. INTERIOR GROUND BAR TO BE CONNECTED TO INTERIOR HALO GROUND RING VIA 2–HOLE CRIMP TYP LUGS. (ITEM #60) AND #6 WIRE (ITEM #56). (TYPICAL 2 PLACES)
13. SEE SHEET 5 FOR GROUNDING DETAILS.
14. CABLE LADDER IS TO BE BONDED TOGETHER ON ONE SIDE AND TO INTERIOR HALO GROUND RING. USE #6 GREEN STRANDED WIRE (ITEM #56), 2–HOLE (ITEM #60), AND NO–OX COMPOUND.
15. RUN #6 GROUNDING WIRE FROM HALO GROUND RING TO SURGE ARRESTOR LOCATION AND COIL 2 FEET EXTRA WIRE. SURGE ARRESTOR TO BE GROUNDED AFTER INSTALLATION IN RADIO INTEGRATION. TY–RAP 1 #6 2–HOLE GROUNDING LUG TO COILED WIRE.

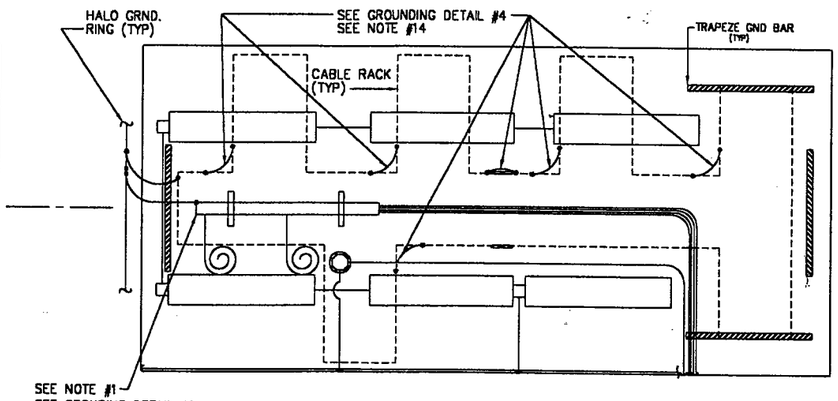
REVISIONS				
INIT.	REV	DESCRIPTION	DATE	APPROVED
SL	–	RELEASE FOR APPROVAL	3/28/00	G. BRADSHAW
SM	A	REVISED "ATTENTION #2" NOTE	07/10/00	G. BRADSHAW
SL	B	REVISED "ATTENTION #2" NOTE	7/12/00	

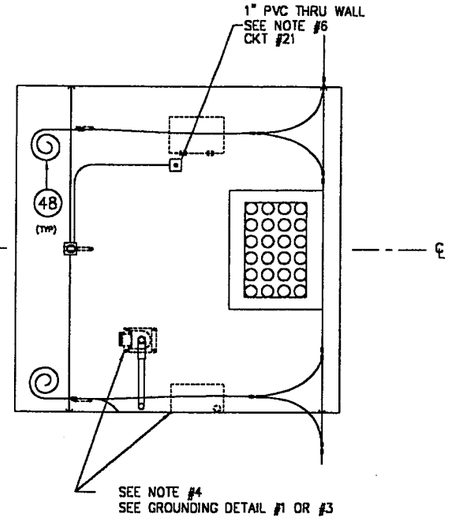


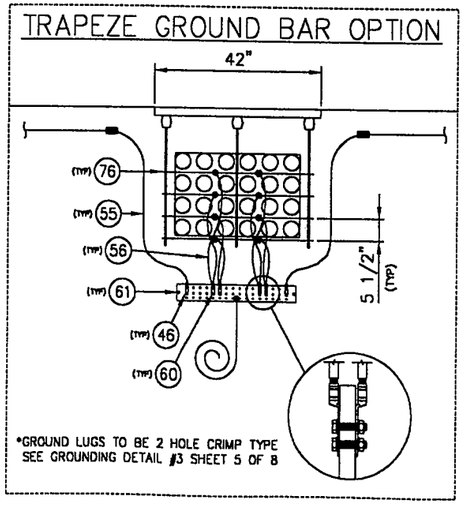
ATTENTION #1: GROUNDING ON GROUND BAR SHOWN ON SIDEWALL FOR REFERENCE ONLY. LOCATE GROUNDING AT ACTUAL LOCATION OF GROUND BAR. SEE NOTE #9 AND #12 SEE GROUNDING DETAIL #3

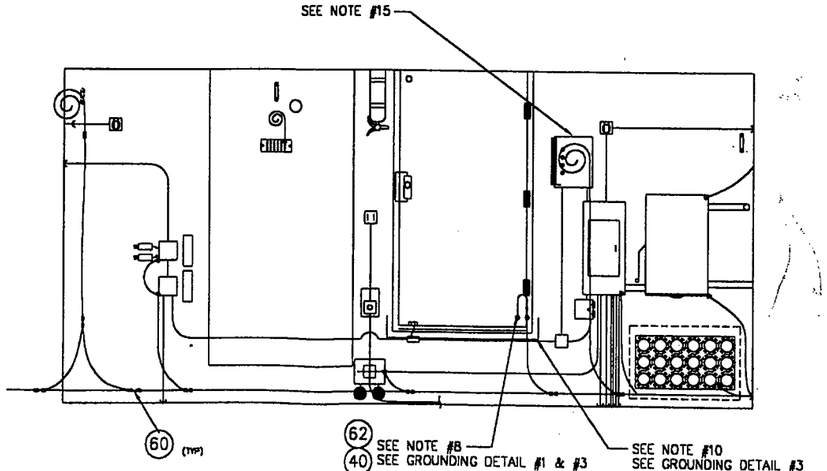
ATTENTION #2: INSTALL GROUND BAR (INTERIOR AND EXTERIOR) IN EQUIPPING SEE NOTE #7











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FAX (770) 324–4640

DRAWN BY: S. LANKFORD	DATE: 3/28/00	TITLE: GROUNDING LAYOUT
CHECKED BY: S. CLARK	DATE: 5/18/00	DIAL CALL, INC./NEXTEL COMMUNICATIONS
PROJECT LNGR	DATE	
PROJECT MGR	DATE	SIZE: B; FSCM NO.; DRAWING NUMBER: RCS1020–355T1–95; ERO32798
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES (MM)		SCALE: 1/4" = 1'–0"; PLOT SCALE: .25 = 12; SHEET 4 OF 9

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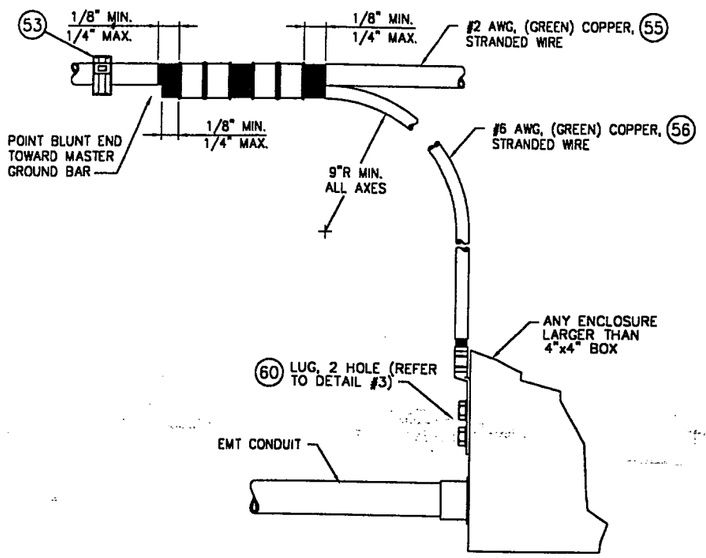
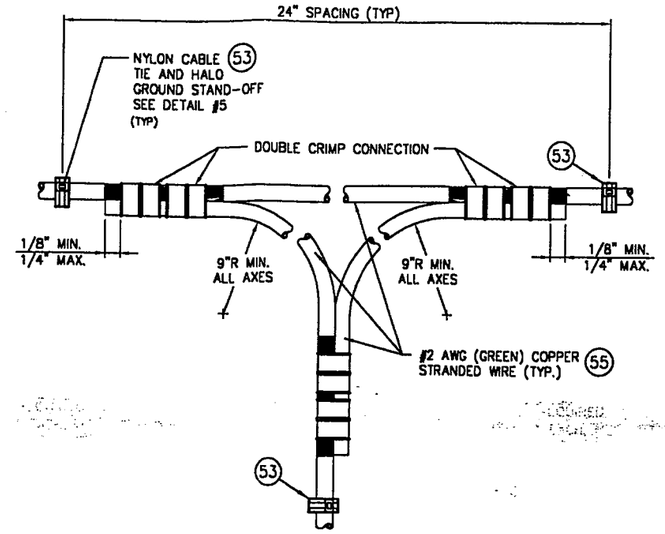
Attachment: 28._Addendum_9 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

REVISIONS				
INIT.	REV	DESCRIPTION	DATE	APPROVED
SL	–	RELEASE FOR APPROVAL	3/28/00	



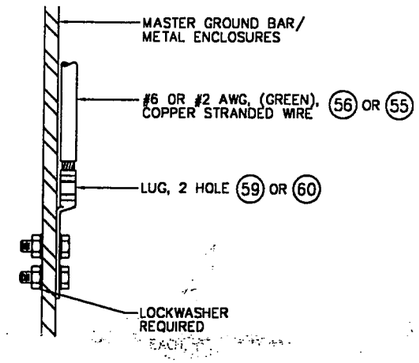
DETAIL #1

#6 STRANDED TO BOX



DETAIL #2

HALO RING OMNI DROP CONNECTIONS

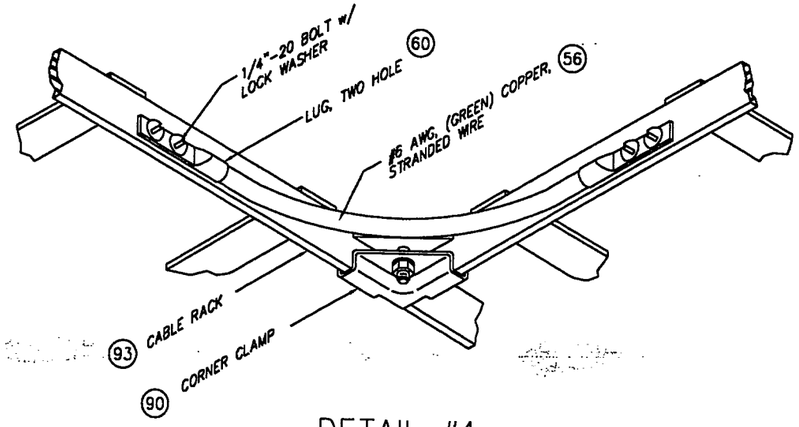


NOTES:

1. CHOOSE BOLT LENGTH TO ALLOW A MIN. OF TWO THREADS EXPOSED.
2. BURNISH MOUNTING SURFACE TO REMOVE PAINT IN THE AREA OF THE LUG.
3. APPLY ANTI-OXIDANT COMPOUND TO MATING SURFACE OF LUG AND WIPE OFF EXCESS COMPOUND

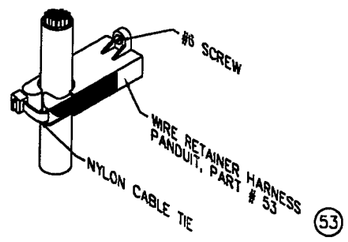
DETAIL #3

#6 OR #2 AWG STRANDED TO
A FLAT SURFACE



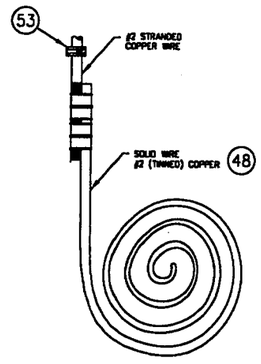
DETAIL #4

#6 AWG STRANDED TO CABLE RACK
(ALSO TYPICAL FOR SPLICE CLAMPS)



DETAIL #5

HALO WIRE SUPPORT HARNESS (TYPICAL
FOR HALO RING AND DROPS)



DETAIL #6

TYPICAL OMNI DROPS (BOTTOM)

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DRAWN BY: S. LANKFORD	DATE: 3/28/00	TITLE: HALO GROUNDING DETAILS
CHECKED BY: S. CLARK	DATE: 5/18/00	DIAL CALL, INC./NEXTEL COMMUNICATIONS
PROJECT ENGR	DATE	
PROJECT MGR	DATE 5/10/00	SIZE B; FSCM NO.; DRAWING NUMBER RCS1020-355T1-95
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES (mm)		SCALE 1/4" = 1'-0"; PLOT SCALE .25 = 12; SHEET 5 OF 9

ERO3280

Attachment: 28._Addendum_9 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

REVISIONS				
INIT.	REV	DESCRIPTION	DATE	APPROVED
SL	–	RELEASE FOR APPROVAL	3/28/00	

1. COMMERCIAL POWER TO BE INSTALLED BY OTHERS IN ACCORDANCE WITH 1996 NEC.
2. THE INCOMING SERVICE AVAILABLE FAULT CURRENT SHALL BE 22,000A RMS MAX. AND TO BE FIELD VERIFIED BY LOCAL CONTRACTOR OR INSPECTOR.

MANUAL TRANSFER SWITCH

EXTERIOR OF SHELTER

INTERIOR OF SHELTER

A/C #1 & #2

2-STAGE THERMOSTAT

7 DAY TIMER

SETTINGS
HEAT: 65°F
COOL: 75°F

CHECK FOR ZERO VOLTAGE BETWEEN #8 TERMINALS AND ZERO VOLTS BETWEEN #9 TERMINALS WITH A\C UNITS ON BEFORE CONNECTING TO THESE TERMINALS.

#2 SEE NOTE #10

TO GROUND
TO NEUTRAL
TO ALARM PANEL
TO ALARM PANEL

(35) SURGE ARRESTOR (CUSTOMER SUPPLIED)

(34) POWER FAIL

CONTACTS SHOWN W/ COIL ENERGIZED (NORMAL CONDITION)

APPLETON AR20034RS
(367960-72)
FRONT EXTERIOR VIEW OF GENERATOR RECEPTACLE

S/G 200A S/N

45A 15A SPARE
15A INTERIOR LIGHTS
EXTERIOR LIGHTS
20A BLK RECP GROUP #1
RECP GROUP #2
60A 20A GFI RECP
20A SPARE
15A NORMALLY CLOSED
15A
30A
30A
30A
30A

RECT #1 RECT #2 RECT #3 RECT #4 RECT #5 RECT #6 RECT #7 RECT #8

SMOKE DETECTOR
BLK ORG WHT GRAY BLK WHT

AUX. RELAY

NOTE:
1. SMOKE DETECTOR TO BE MOUNTED ON A 4x4 BOX TO MAKE ROOM FOR RELAY.
2. FACTORY WIRES SHOWN AS DASHED LINES.

BRN (COM.) ORG (N.C.)

TO ALARM PANEL

COIL 5 FEET FOR FUTURE USE (TO 4x4 BOX ON ENDWALL)

30A SPARE
20A SPARE
20A SPARE
20A SPARE
30A SPARE

SYMBOL LEGEND

- 4"x4" JUNCTION BOX
- 20A 125V SINGLE RECEPT. IN A 4"x4" BOX
- 20A 125V DUPLEX RECEPT. IN A 4"x4" BOX
- 20A 125V DOUBLE DUPLEX RECEPT. IN A 4"x4" BOX
- 20A 250V SINGLE RECEPT. IN A 4"x4" BOX
- 20A 125V SINGLE RECEPT. IN A 2"x4" BOX
- 20A 125V DUPLEX RECEPT. IN A 2"x4" BOX
- 2"x4" JUNCTION BOX
- 15A 120V LIGHT SWITCH IN A 4"x4" BOX
- 2-15A 120V LIGHT SWITCHES IN A 4"x4" BOX
- 15A 120V LIGHT SWITCH IN A 2"x4" BOX
- HINGE COVER BOX (HINGE TO LEFT IS SHOWN)

(35) SURGE ARRESTOR
(47) HIGH TEMP
(47) LOW TEMP
(110) SMOKE DETECTOR
(11) DOOR ALARM
(34) POWER FAILURE
(36) HVAC #1 FAIL
(36) HVAC #2 FAIL

COIL & TAG @ 6 X 6 BOX ON TELCO BOARD (CONNECTION MADE BY OTHERS)

NOTES:

1. ALL WIRE COLORS FOR #6 AND LARGER SHALL BE MARKED AT 40" INTERVALS MAX.
2. GROUNDING BUSHINGS MUST USE THE SAME SIZE OR LARGER GROUND WIRE AS ON SERVICE ENTRANCE, OR LARGEST SIZE ACCEPTED BY BUSHING.
3. ALL WIRE (UNLESS NOTED OTHERWISE) IS TO BE:
   - #12 AWG.
   - STRANDED.
   - THHN ONLY
   - SOLID, FOR THERMOSTAT AND ALARM WIRING (22 GA MIN.).
4. CONDUIT TO BE EMT OR RIGID UNLESS NOTED. MINIMUM SIZE OF CONDUIT AND FITTINGS IS 1/2" OR AS NOTED. UPSIZING IS PERMITTED. LAYOUT LOCATIONS ARE FOR REFERENCE ONLY AND MAY VARY UNLESS NOTED OTHERWISE.
5. ALL BOXES, LIGHT FIXTURES AND ELECTRICAL EQUIPMENT TO BE ± 1/2" UNLESS OTHERWISE NOTED. BOXES OR RECEPTACLES 6"x6" OR SMALLER SHALL NOT BE INSTALLED ON PANELING TRIM.
6. ALL ALARM WIRING INSTALLED BY ANDREW IS ASSUMED TO BE CLASS I WIRING PER 1996 NEC 725 UNLESS OTHERWISE SPECIFIED BY THE CUSTOMER AND NOTED ON THESE DRAWINGS.
7. WIRE COLORS ARE AS FOLLOWS:
   - ALL PHASE "A" WIRES ARE TO BE BLACK.
   - ALL PHASE "B" WIRES ARE TO BE RED.
   - ALL PHASE "C" WIRES ARE TO BE BLUE. (IF APPLICABLE)
   - ALL GROUND WIRES ARE TO BE GREEN.
   - ALL NEUTRAL WIRES ARE TO BE WHITE.
   - ALL SWITCHED WIRES ARE BE YELLOW.
8. AMPACITY RATING TO BE PER TABLE 310-16 (1996 NEC).
9. CONDUIT FILL TO BE PER CHAPTER 9 (1996 NEC).
10. SURGE ARRESTOR TO BE INSTALLED IN RADIO INTEGRATION. POWER AND ALARM WIRES TO BE TERMINATED AT END OF SURGE ARRESTOR CONDUIT LOCATIONS. COIL AN EXTRA 3 FEET OF WIRE FOR CONNECTION OF EQUIPMENT.

ALARM NOTES

1. PIGTAIL ALL ALARMS IN 6x6 BOX ON TELCO BOARD
2. ALL ALARM WIRE TO BE 22GA SOLID.
3. ALARMS WILL CLOSE IN ALARM CONDITION. ALARMS ARE NORMALLY OPEN.
4. LABEL INDIVIDUAL ALARMS AS LISTED
5. TAG EACH ALARM WIRE TO IDENTIFY SOURCE CONNECTION.

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DRAWN BY	S. LANKFORD 3/28/00
CHECKED BY	S. CLARK 5/18/00
PROJECT ENGR	
PROJECT MGR	DATE

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES (MM)

TITLE: ELECTRICAL SCHEMATIC

DIAL CALL, INC./NEXTEL COMMUNICATIONS

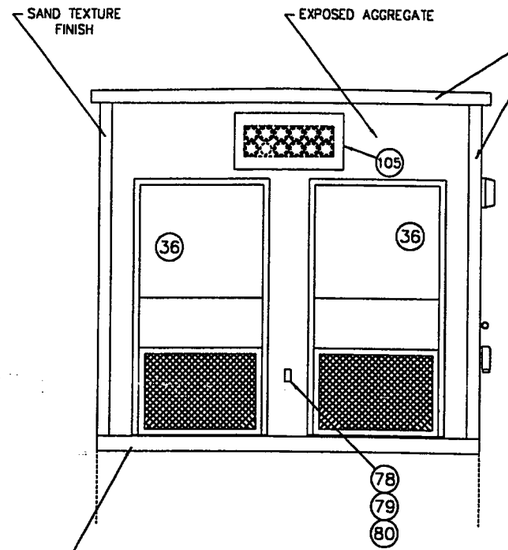
SIZE: B | ITEM NO. | DRAWING NUMBER: RCS1020-355T1-95

SCALE: 1/4" = 1'-0" | PLOT SCALE: .25 = 12 | SHEET 6 OF 9

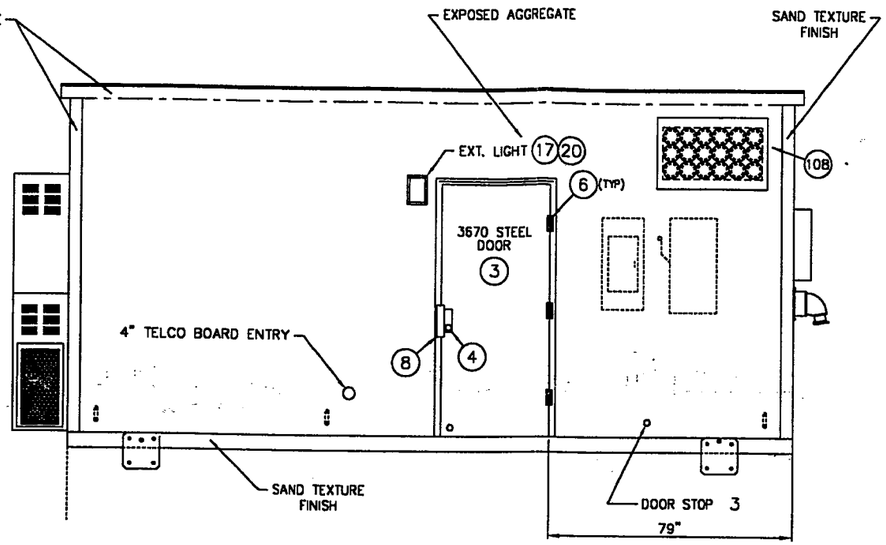
ERO3281

Attachment: 28._Addendum_9 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

REVISIONS				
ANT.	REV	DESCRIPTION	DATE	APPROVED
SL	–	RELEASE FOR APPROVAL	3/28/00	



ELEVATION "D"



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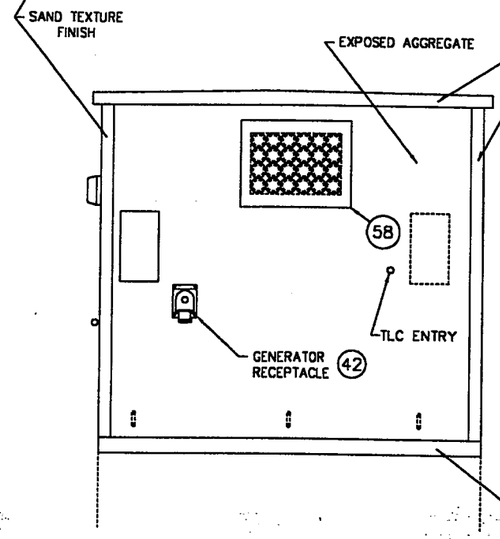

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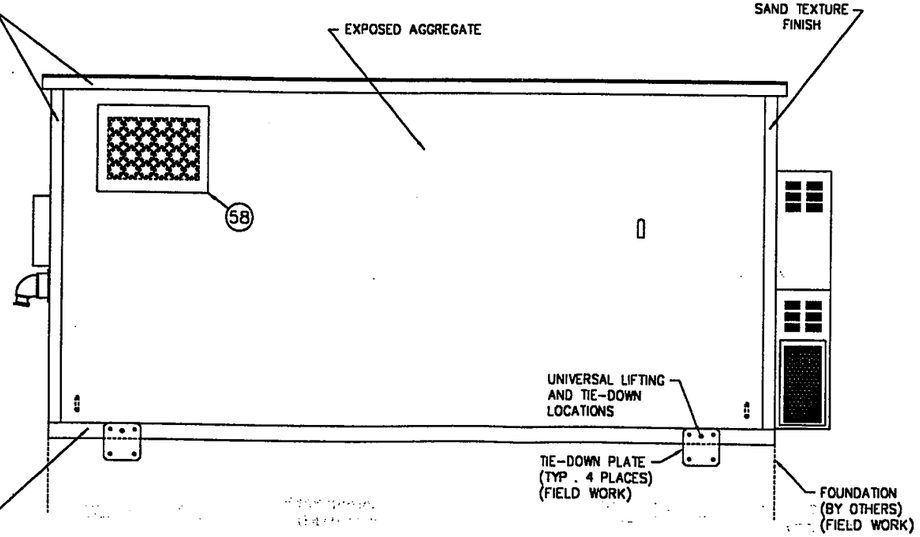
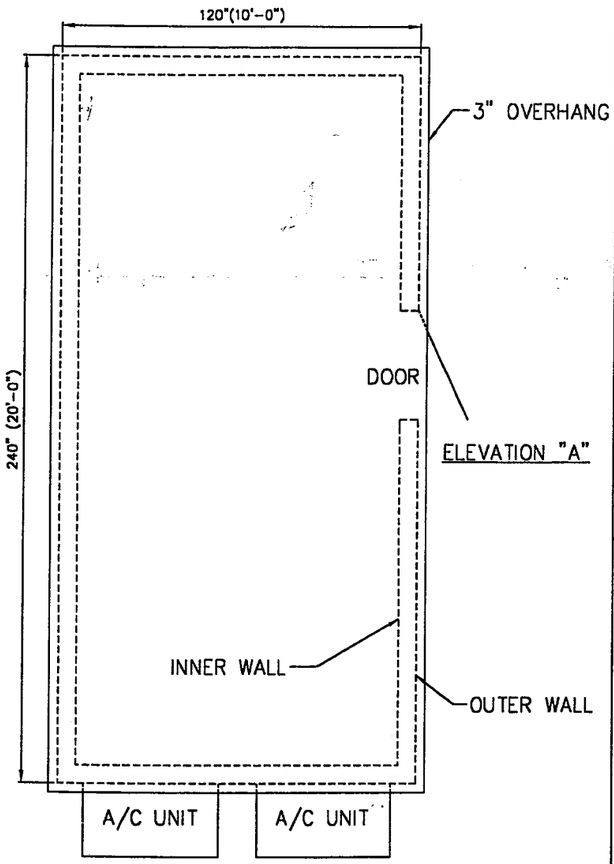


ELEVATION "C"

ELEVATION "B"



ELEVATION "D"

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DRAWN BY	S. LANKFORD
DATE	3/28/00
CHECKED BY	S. CLARK
DATE	5/18/00
PROJECT ENGR	
DATE	
PROJECT MGR	
DATE	7/10/00

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES (MM)

TITLE: EXTERIOR ELEV./FLOOR PLAN
NEXTEL COMMUNICATIONS

SIZE	B
FCSM NO.	
DRAWING NUMBER	RCS1020-355T1-95
SCALE	1/4"=1'-0"
PLOT SCALE	.25=12
SHEET	9 OF 9
ADD NO.	ER03284

Attachment: 28_Addendum_9 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

BUDGET AND ADMINISTRATIVE SERVICES
Purchasing and Contracts
123 West Indiana Avenue • Room 302 • DeLand, FL 32720-4608
Phone: 386-736-5935 • Fax: 386-736-5972
e-mail: purchasing@volusia.org • www.volusia.org

December 13, 2019

Subject: **ADDENDUM NO. 10 to RFP No. 19-P-153JRD, "P25 Compliant Radio System"**

This addendum is being issued to clarify questions and make changes to the Request for Proposals (RFP). This document and all changes, as listed below, shall become an integral part of the RFP and shall take precedence over what was previously stated in the RFP document.

Additional information has become available for the following question from Addendum 9:

Q: **Can the engineering company of Bechtol provide the bearing capacity values or skin friction and bearing for the geotech report?**

A: Based on the program Bechtol used to get soil parameters, here are the following Kf (Faction) values for the different type of material used for the pile:

Kf for Concrete (Rough): 0.8
Kf for Concrete (Smooth): 0.7

Skin Friction (δ) = Kf * Φ

Where,
Φ = soil internal friction angle (provided on soil parameter table in report)

Please note the last day for questions was Friday, December 6, 2019 no other new questions may be submitted, however follow up questions in response to this Addendum No. 10 may be submitted.

Sign and attach this addendum to your proposal submittal. If you have any questions regarding this information, please contact John Duckworth, Procurement Analyst II, at 386-822-5792 or jduckworth@volusia.org.

Pamela Wilsky, CPPO, CPPB
Interim Director of Purchasing and Contracts

PW:jrd

Please sign and return with proposal for 19-P-153JRD, "P25 Compliant Radio System"

Vendor: _____

Signed by (*Name/Position*): _____

Phone No.: _____ Date: _____

FAILURE TO RETURN THIS ENTIRE ADDENDUM WITH THE SUBMITTAL MAY CAUSE THE SUBMISSION TO BE RENDERED **NON-RESPONSIVE**.

Attachment: 29._Addendum_10 (2022-R-8 : Purchase of a P25 Radio Communications Equipment - Piggybacking County Contract)

Volusia County
FLORIDA

19-P-153JRD Recommendation of Award
P25 Compliant Radio System

ALL RESPONSES ACCEPTED BY THE COUNTY OF VOLUSIA ARE SUBJECT TO THE COUNTY'S TERMS AND CONDITIONS. ANY AND ALL ADDITIONAL TERMS AND CONDITIONS SUBMITTED BY THE RESPONDENTS ARE REJECTED AND SHALL HAVE NO FORCE AND EFFECT. RESPONSES FROM THE VENDORS LISTED HEREIN ARE THE ONLY RESPONSES RECEIVED TIMELY AS OF THE CLOSING DATE AND TIME. ALL OTHER RESPONSES SUBMITTED IN RESPONSE TO THIS SOLICITATION, IF ANY, ARE HEREBY REJECTED AS LATE.

Communications International, Inc.	Motorola Solutions, Inc.
4450 US Highway 1	401 East Las Olas Blvd., 16th Floor
Vero Beach, FL 32967	Fort Lauderdale, FL 33301
772.569.5355	954.260.2961
jquintana@ask4ci.com	daniel.sanchez@motorolasolutions.com

Closing Date & Time: Wednesday, January 15, 2020 at 3:00 p.m.
Responses received by: John Duckworth & Andrew Kokitus
Council Selection Date: 6/16/2020
Date Posted: 6/19/2020
Awarded Recommendation: Communications International, Inc.

Reviewed by: _____
Pamela Wilsky, Director of Purchasing and Contracts

Attachment: 31._19-P-153JRD,_Recommendation_of_Award (2022-R-8 : Purchase of a P25 Radio

HOLLY HILL
FLORIDA

STAFF REPORT
CITY OF HOLLY HILL, FLORIDA

City Commission
Resolution

MEETING DATE: **January 25, 2022**
FROM: **Joseph Forte**
SUBJECT: **A Resolution of the City of Holly Hill, Florida, Approving the ECHO Grants-In-Aid Letter Contract, Legal Description of Project Property and Recording of Restrictive Covenants and Authorizing the City Manager to Execute These Documents; Providing for Severability; and Providing for an Effective Date.**
NUMBER: **2022-R-9**
APPLICANT:
PLANNER:

DISCUSSION:

The City of Holly Hill and the Community Redevelopment Agency in partnership with Martens Charities is developing Pictona, Phase 2. The project is projected to cost approximately $6,000,000.00 of which the CRA is contributing $1,000,000.00 dollars. The Martens, Steve Juengst and Joe Forte worked on submitting a $2,500,000.000 Exceptional Grant through Volusia ECHO for the Development of Pictona, Phase 2.

On January 18, 2022, the Volusia County Council approved the ECHO Advisory Committee recommendation of the City's ECHO Grants-in-Aid award in the amount of $2,500,000.00. The City of Holly Hill entered into an Agreement with Volusia County by signing the County of Volusia ECHO Grants-in-Aid Agreement. At this time, the City must provide the legal description of the project property (attached), which will be reviewed and then recorded with the Volusia County Clerk of the Court as a Restrictive Covenant. The City must sign the Restrictive Covenant (attached), as well as, the ECHO Grants in Aid Letter Contract (Attached).

FISCAL ANALYSIS:

The City Commission approved a budget amendment on November 23, 2021 recognizing the Martens Charity contribution to the city in the amount of $1,500,000.00 to be combined with the CRA's $1,000,000.00 to make up the match to the Volusia ECHO Grants-in-Aid of $2,500,000.00. The balance of the project cost will be funded directly by Martens Charity.

STAFF RECOMMENDATION:

That the City Commission of the City of Holly Hill approve the Legal Description, Restrictive Covenants and Letter Contract and authorize the City manager to execute all related documents.

COMMISSION GOAL:

Goal #3: Implement the CRA master plan with a focus on the best utilization of vacant properties and blighted properties in the city. Attention should also focus on infrastructure improvements within the district and strategies to encourage private investment and business retention.

MOTION:

APPROVE THE COUNTY OF VOLUSIA ECHO GRANTS-IN-AID LETTER CONTRACT, LEGAL DESCRIPTION OF THE PROJECT AREA AND RESTRICTIVE COVENANTS AND AUTHORIZE THE CITY MANAGER TO EXECUTE THESE DOCUMENTS.

ATTACHMENTS:

- ECHO Grant Award letter 21-03 (PDF)
- ECHO Grants in Aid Letter Contract (PDF)
- Pictona Phase 2, Legal Description, Exhibit A (PDF)
- 21-03 City of Holly Hill Restrictive Covenants (PDF)

Resolution No. 2022-9

A RESOLUTION OF THE CITY OF HOLLY HILL, FLORIDA, APPROVING THE ECHO GRANTS-IN-AID LETTER CONTRACT, LEGAL DESCRIPTION OF PROJECT PROPERTY AND RECORDING OF RESTRICTIVE COVENANTS AND AUTHORIZING THE CITY MANAGER TO EXECUTE THESE DOCUMENTS; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

A RESOLUTION OF THE CITY OF HOLLY HILL, FLORIDA, APPROVING THE ECHO GRANTS IN AID LETTER CONTRACT, LEGAL DESCRIPTION OF PROJECT PROPERTY AND RECORDING OF RESTRICTIVE COVENANTS AND AUTHORIZING THE CITY MANAGER TO EXECUTE THESE DOCUMENTS; PROVIDING FOR CONFLICTS; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City of Holly Hill applied for a $2,500,000.00 Exceptional Grant through Volusia ECHO for the development of Pictona, Phase2; and

WHEREAS, On December 2, 2021, the ECHO Committee made a recommendation to be presented to the Volusia County Council to fund the City's application request; and

WHEREAS, On January 18, 2022, the Volusia County Council approved the ECHO Advisory Committee recommendation of the city's ECHO Grants-in-Aid award in the amount of $2,500,000.00; and

WHEREAS, The City of Holly Hill must execute a Letter Contract with Volusia and record a Restrictive Covenant of the legal description of the project.

NOW THEREFORE, BE IT RESOLVED BY THE CITY COMMISSION OF THE CITY OF HOLLY HILL, FLORIDA:

SECTION 1. That the City Commission of the City of Holly Hill hereby approves the County of Volusia ECHO Grants-in-Aid Letter Contract and the Restrictive Covenants and Legal Description for the project property to be recorded with the Volusia County Clerk of the Court.

SECTION 2. The City Manager is hereby authorized to execute the County of Volusia ECHO Grants-in-Aid Letter Contract and Restrictive Covenants.

SECTION 3. If any section, subsection, sentence, clause, phrase, or portion of this Resolution, or application hereof, is for any reason held invalid or unconstitutional by any Court, such portion or application shall be deemed a separate, distinct and independent provision,

and such holding shall not affect the validity of the remaining portions or application hereof.

SECTION 4. That all resolutions made in conflict with this Resolution are hereby repealed.

SECTION 5 That this Resolution shall become effective immediately upon its adoption.

APPROVED AND AUTHENTICATED on this 25th day of JANUARY, 2022.

Volusia County
FLORIDA

Resource Stewardship Division

January 18, 2022

Joe Forte, City Manager
City of Holly Hill
1065 Ridgewood Ave.
Holly Hill, Florida 32117

RE: ECHO Grant Award 21-03
City of Holly Hill – Pictona at Holly Hill, Phase 2

Dear Mr. Forte,

Congratulations! On January 18, 2022 the Volusia County Council approved the ECHO Advisory Committee recommendation of your ECHO Grants-in-Aid award in the amount of $2,500,000. Attached are the documents you need to complete the award process. The following action steps are required to move toward receiving the Notice to Proceed:

1. Restrictive Covenants – Provide the legal description of the project property to the ECHO office for review and approval. Once approved, complete, duly sign, witness, notarize and record the restrictive covenant with the approved legal description of the project property as a part thereof, with the Volusia County Clerk of the Court and a copy of the filed document needs to be provided to ECHO staff.

2. One Original Letter Contract – Have the appropriate authority sign the document on the line marked "Agency (Grantee) Acknowledgement". Sign the line marked by a red "X" and only that one place. This document will be processed by ECHO staff. It is the document that allows us to encumber funds specific to your project.

Return signed and recorded documents in one packet to ECHO staff no later than February 1, 2022. Please include your grant number (21-03) on all correspondence.

123 W. Indiana Avenue, Room 200
Tel: (386) 943-7081 Fax: (386) 626-6570

Attachment: ECHO Grant Award letter 21-03 (2022-R-9 : Accepting ECHO Grant Award 21-03 in the Amount of $2,500,000.00)

A Notice to Proceed must be issued prior to the start of your project. Your expeditious processing of the attached documents is critical to continuing the award process.

On behalf of the ECHO staff, I want to once again congratulate you on your grant award. We look forward to working with your organization to ensure the successful completion of this project to realize the goals of the ECHO Program. Please contact me at (386) 943-7081 or khively@volusia.org if you have any further questions.

Sincerely,

Kendra Hively

Kendra Hively, ECHO Manager
Resource Stewardship Division

Attachment: ECHO Grant Award letter 21-03 (2022-R-9 : Accepting ECHO Grant Award 21-03 in the Amount of $2,500,000.00)

FOR ACCOUNTING USE ONLY	
VENDOR CODE:	
ACCOUNTING PERIOD:	BUDGET FY:
SCH PAY DATE:	CHECK CATEGORY:
OFFSET LIABILITY ACCT:	SINGLE CHECK:
DOCUMENT TOTAL:	

COUNTY OF VOLUSIA

RESOURCE STEWARDSHIP DIVISION

ECHO GRANTS IN AID LETTER CONTRACT

Issue Date:

Issued By: Community Services Department
Resource Stewardship Division
ECHO Grants-In-Aid
123 West Indiana Ave.
Deland, FL 32720

Issued To Vendor #: HOH33620000

Vendor Name: City of Holly Hill

Address: 1065 Ridgewood Ave, Holly Hill, FL 32117-2807

Phone Number: 386-248-9426

REQUEST No.	FUND	AGENCY	ORG.	OBJECT	PROGRAM	TOTAL
	160	625	6021	8100	ECHO 21	$2,500,000.00

Description: To provide grant awards to eligible applicants as described in Resolution 2020-79 for the purpose of acquiring, constructing or restoring environmental learning, cultural, historical/heritage and outdoor recreation facilities through a grant application process.

21-03: Please reference this number on all invoices for payment and correspondence.

Terms: Financial assistance for grant activity will be FY 21-22 (10/1/21 – 9/30/22), FY 22-23 (10/1/22 – 9/30/23) and FY23-24 (10/1/23 – 09/30/2024)

Funding: Payments will be made to the recipient for reimbursement of eligible expenditures approved by the ECHO program coordinator. Quarterly, the recipient must submit a Quarterly Report and a Reimbursement Request. The County may allow additional reimbursement requests but at a minimum the grantee shall provide one per quarter after the grant is awarded even if the reimbursement request is $0. The County shall retain 10% of each reimbursement amount until the ECHO project is finished, all reports are complete, and the final permanent ECHO sign is installed.

Use of Funds: Funds must be used as proposed in the grant application submitted and included as part of the Grant Agreement approved by the County Council on **January 18, 2022**.

_____ _____
Reviewed By Date

_____ _____
Department Head Date

_____ _____
Purchasing Director Date

X _____ _____
Agency Acknowledgement Date

Attachment: ECHO Grants in Aid Letter Contract (2022-R-9 : Accepting ECHO Grant Award 21-03 in the Amount of $2,500,000.00)

HOLLY HILL
FLORIDA

EXHIBIT A

LEGAL DESCRIPTION

Pickelball Facility
Pictona Phase 2
1066 Ridgewood Ave.
Holly Hill, Fl 32117

Short Parcel ID 424240320022

Legal Description

42-14-32-IRREG PART OF LOT 33 CHARLES HOPKINS 1875 SUB OF THOMAS FITCH GRANT DB C PG 79 MB 12 PG 115 LYING E OF FEC R/W & S OF LPGA BLVD & N OF 10TH ST & INC LOTS 4,5 & N 100.5 FT OF LOT 6 BLK 8 DD RODGERS 1877 SUB OF WM S FLEMMING PROPERTY DB C PG 69 MB 14 PGS 11 THRU 14 AS DESCRIBED I NOR 7791 PG 4145 & EXC THAT PART DESCRIBED IN OR 7553 PG 2137

_____

Joseph Forte

City Manager

Attachment: Pictona Phase 2, Legal Description, Exhibit A (2022-R-9 : Accepting ECHO Grant Award 21-03 in the Amount of $2,500,000.00)

Prepared by:
Volusia County Government
Resource Stewardship Division
123 W. Indiana Ave.
DeLand, FL 32720

Attachment: 21-03 City of Holly Hill Restrictive Covenants (2022-R-9 : Accepting ECHO Grant Award 21-03 in the Amount of $2,500,000.00)

Restrictive Covenants

THESE COVENANTS are entered into this _____ day of _____, 2022, by the **City of Holly Hill**, *Hereinafter referred to as* "the Owner" and **City of Holly Hill**, *hereinafter referred to as* "the Grantee/Lessee", and shall be effective for a period of 20 years from the date of recordation by the Clerk of the Circuit Court of Volusia County, Florida.

WHEREAS, the Owner is the fee simple title holder of the Property located at **1066 Ridgewood Ave., Holly Hill.**, in the County of Volusia, Florida, as described as Exhibit A (legal description), attached to and made a part hereof, and

WHEREAS, the Grantee/Lessee is to receive ECHO Grant Program funds administered by the County of Volusia, Florida, 123 W. Indiana Avenue, DeLand, Florida 32720, *hereinafter referred to as* "the County", in the amount of **$ 2,500,000.00**, to be used for the construction of the facility for public use specifically described in the ECHO Grant Agreement and its attached documents, situated on the property as described as Exhibit A, and

Now THEREFORE, as part of the consideration for the County grant, the Owner and the Grantee/Lessee hereby make and declare the following restrictive covenants which shall run with the title to said Property and be binding on the Owner and its successors in interest, if any, for the period stated in the preamble above:

1. The Owner and the Grantee/Lessee agree to maintain the property so that it continues to be used for as an ECHO facility as defined in the ECHO application definition and described in the grantee's application No. **21-03**.
2. The Owner and the Grantee/Lessee agree that the County of Volusia, its agents and its designees shall have the right to inspect the Property at all reasonable times in order to ascertain whether the conditions of the Grant Award Agreement and these covenants are being observed.
3. The Owner and the Grantee/Lessee agree that these restrictions shall encumber the property for a period of 20 years from the date of recordation, and that if the restrictions are violated within the 20 year period, the County of Volusia shall be entitled to liquidated damages pursuant to the following schedule:
    a. If the violation occurs within the first half of the effective time period of these covenants, the County shall be entitled to return of the entire grant amount.
    b. If the violation occurs after the first half of the effective time period, the County shall be entitled to the return of the entire grant amount, less the quotient of two (2) divided by the number of years in the time period times each year past the mid period of the effective time period times the grant amount. For instance, if the violation occurs after the thirteenth (13^{th}) anniversary of the effective date of these covenants but prior to the fourteenth (14^{th}) anniversary, the County shall be entitled to return of 50% of the original grant amount.
4. The Owner and Grantee/Lessee are liable to the County of Volusia for the amount of the grant if the Owner or Grantee/Lessee breach these Restrictive Covenants and/or the Grant Award Agreement dated **January 18, 2022** . To insure the ability to repay the grant, the Owner and Grantee/Lessee have agreed that they will maintain unencumbered equitable value in the

property of at least the amount, and for at least the period of time provided in paragraph three above. The Owner and Grantee/Lessee will not secure with a mortgage or otherwise hypothecate that equitable value in the property.

5. The Owner agrees to file these covenants with the Clerk of the Circuit Court of Volusia County, Florida, and shall pay any and all expenses associated with their filings and recording.
6. The Owner and Grantee/Lessee agree that the County of Volusia shall incur no tax liability as a result of these restrictive covenants.

IN WITNESS WHEREOF, the Owner and Grant Recipient have read these Restrictive Covenants and have hereto affixed their signatures.

OWNER:

_____
Sign

Witness: _____
Sign

Witness: _____
Sign

GRANTEE:

_____
Sign

_____
Print

_____
Print

STATE OF FLORIDA

COUNTY OF VOLUSIA

The foregoing instrument was acknowledged before me by means of ☐physical presence or ☐ online notarization, this ___ day of _____, 2022, by _____, as _____ who is [____] personally known to me, or [____] who has produced a _____ _____driver's license as identification.

_____
Print Name:_____
Notary Public, State of Florida
Commission No.:_____
My Commission Expires:_____

Attachment: 21-03 City of Holly Hill Restrictive Covenants (2022-R-9 : Accepting ECHO Grant Award 21-03 in the Amount of $2,500,000.00)

HOLLY HILL
FLORIDA

STAFF REPORT
CITY OF HOLLY HILL, FLORIDA

City Commission
Agenda Item

MEETING DATE: **January 25, 2022**
FROM: **Joseph Forte**
SUBJECT: **Reorganization of Police Department to Include Reclassification of Positions and Hiring New Positions**
NUMBER: **(ID # 3612)**
APPLICANT:
PLANNER:

DISCUSSION:

Attached is a copy of the new organizational charts for the Holly Hill Police Department the modeling of the new organization and new pay classification for the Police Captain position . The changes made include the elimination of the Lieutenant position and the reclassification of the Deputy Chief position to the position of Police Captain.

FISCAL ANALYSIS: In the Police Reorganization Model Analysis each option provides for a savings in the budget due to the elimination of positions and retitling of position. The Lieutenant position will be eliminated and the Deputy Chief Position will be reclassified to Police Captain. The Admin Assist will be reclassified to Admin. Supervisor. It also allows for the hiring of additional personnel in the field consisting of an additional Traffic Officer and an additional swing shift officer plus an additional Criminal Investigations Officer who will also be reasonable for department personnel training which the department has been lacking. The additional personnel of the traffic officer and an swing shift officer will not be assigned a shift but will be assigned to the more active time of each shift where call volume increases.

These changes recommended in Model #3 along with savings from recent retirements

and turnover have resulted in an approximate budget reduction of $77000.00 in the first year with lower savings in the future years in the range in excess of an average of $33,000.

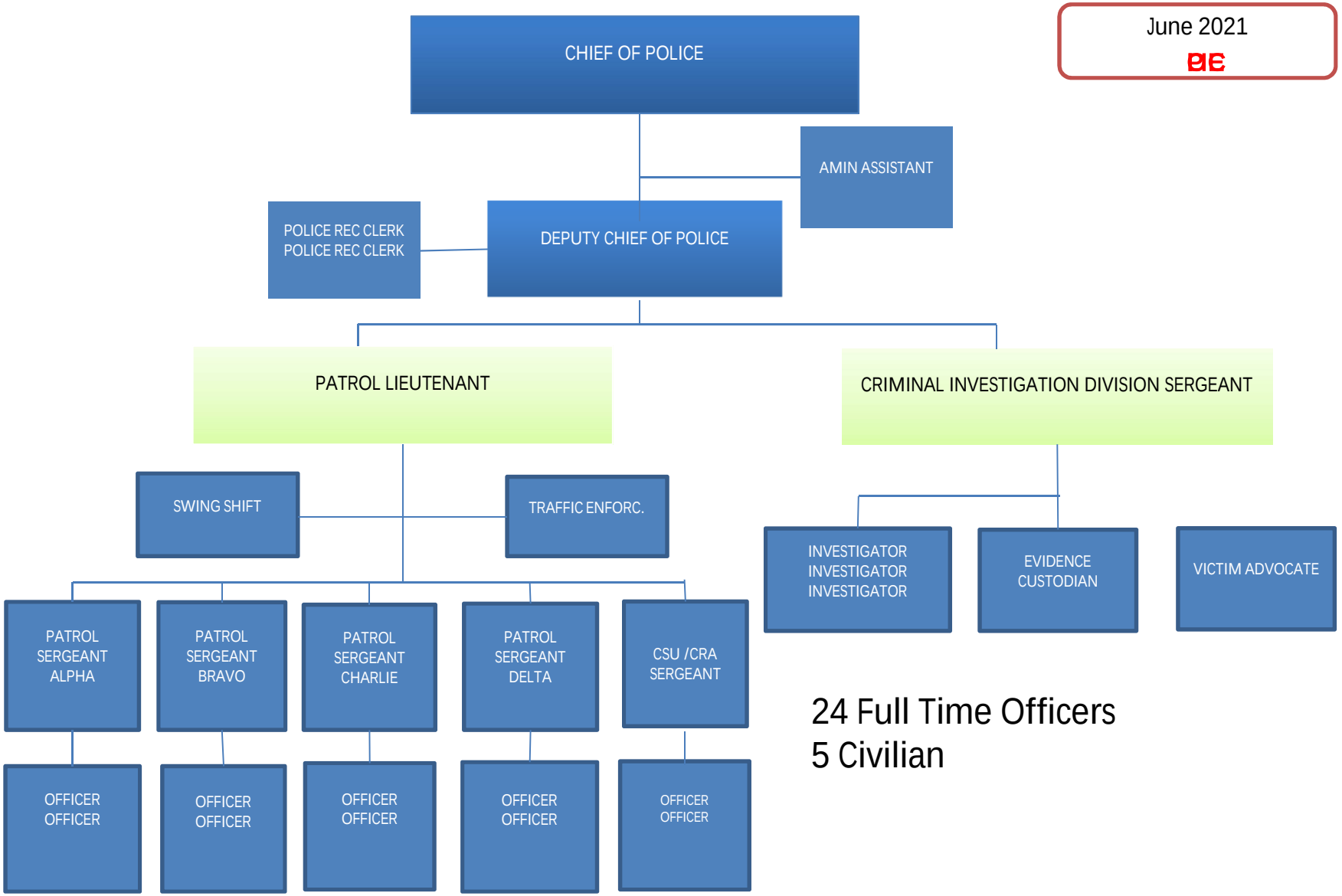
STAFF RECOMMENDATION: The City Commission approve the recommend Org. Chart dated January 2022, approve the new positions and reclassifications of position and approve the pay plan as submitted.

COMMISSION GOAL: #4 Provide proficient public health and safety services in terms of police and fire protection, water, storm water, waste water and solid waste management and disaster preparedness with a focus on intergovernmental collaboration, private sector partnerships, and utilization of technologies and proven innovations.

MOTION: Approve the recommend Org. Chart dated January 2022, approve the new positions and reclassifications of position and approve the pay plan as submitted.

- P.D. Org Chart, June 2021 24 Officer Police (PDF)
- P.D. Org Chart October 2021, 25 Officers (PDF)
- P.D. Org Chart, January 2022 26 Officer (PDF)
- Pay Plan - FY 2021-2022 (PDF)
- P.D. Re-Org. Model Summary (PDF)

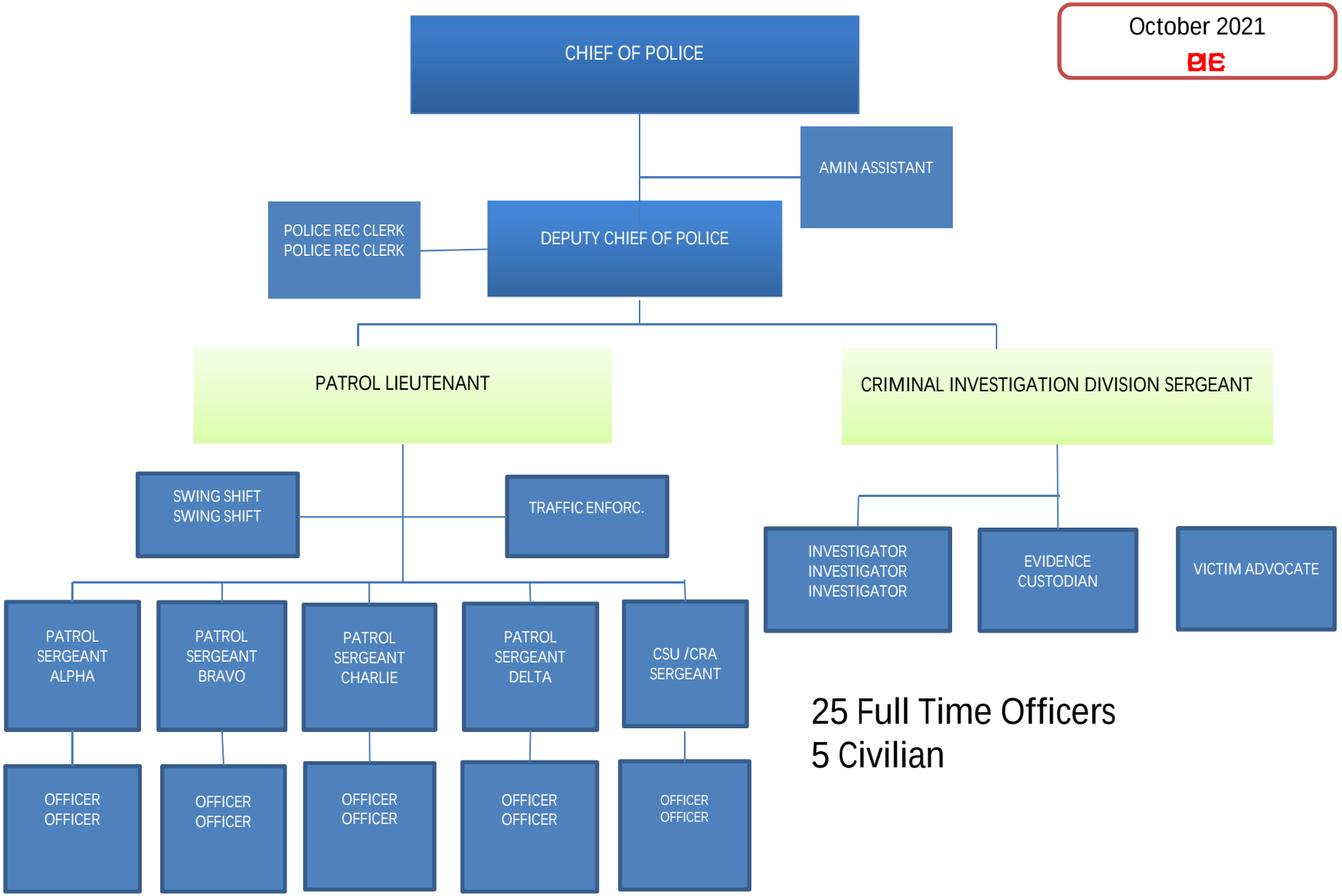
June 2021



24 Full Time Officers
5 Civilian

Attachment: P.D. Org Chart, June 2021 24 Officer Police (3612 : Reorganization of Police Department)

October 2021



25 Full Time Officers
5 Civilian

Attachment: P.D. Org Chart October 2021, 25 Officers (3612 : Reorganization of Police Department)

January 2022

CHIEF OF POLICE

OFFICE MANAGER

CAPTAIN

POLICE REC CLERK
POLICE REC CLERK

ALPHA PATROL SERGEANT

BRAVO PATROL SERGEANT

CHARLIE PATROL SERGEANT

DELTA PATROL SERGEANT

CRA SERGEANT

CID SERGEANT

OFFICER
OFFICER

OFFICER
OFFICER

OFFICER
OFFICER

OFFICER
OFFICER

OFFICER
OFFICER

INVESTIGATOR
INVESTIGATOR
INVESTIGATOR

TRAINING OFFICER / INVESTIGATOR

TRAFFIC ENFORC.
TRAFFIC ENFORC.

SWING SHIFT
SWING SHIFT

EVIDENCE CUSTODIAN

VICTIM ADVOCATE

26 Full Time Officers
5 Civilian

Attachment: P.D. Org Chart, January 2022 26 Officer (3612 : Reorganization of Police Department)

CITY OF HOLLY HILL
FY 2021 - 2022
PAY PLAN

Pay Grade	Position Title	Minimum	Midpoint	Maximum
NAGE-NON-EXEMPT				
101	Custodian	$12.50 $26,000.00	$15.16 $31,532.80	$17.82 $37,065.60
102	Finance Clerk I Maintenance Worker I Police Service Clerk	$13.12 $27,289.60	$16.79 $34,923.20	$20.46 $42,556.80
103	Finance Clerk II Maintenance Worker II Staff Assistant	$13.82 $28,745.60	$17.71 $36,836.80	$21.60 $44,928.00
104	Finance Clerk III Animal Control / Code Officer I Mechanic	$14.56 $30,284.80	$18.69 $38,864.80	$22.81 $47,444.80
105	Finance Clerk IV Administrative Assistant - **NON-UNION** Evidence Custodian Lead Maintenance Worker Tradesworker	$16.17 $33,633.60	$20.80 $43,264.00	$25.43 $52,894.40
106	Code Enforcement Officer II Senior Mechanic Victim Advocate Coordinator	$17.98 $37,398.40	$23.19 $48,224.80	$28.39 $59,051.20
107	Inspections Officer Licensing/Permit & Zoning Technician Payroll Coordinator - **NON-UNION** Senior Code Enforcement Officer	$20.02 $41,641.60	$25.87 $53,809.60	$31.72 $65,977.60

Attachment: Pay Plan - FY 2021-2022 (3612 : Reorganization of Police Department)

Pay Grade	Position Title	Minimum	Midpoint	Maximum
NON-UNION (EXEMPT)				
108	Accountant	$21.13	$27.33	$33.53
		$43,950.40	$56,846.40	$69,742.40
109	Customer Service Supervisor	$22.50	$29.13	$35.76
	Fleet Supervisor	$46,800.00	$60,590.40	$74,380.80
	Senior Accountant			
110	Chief Accountant	$27.23	$35.36	$43.48
	City Clerk	$56,638.40	$73,538.40	$90,438.40
	Economic Development Director/CRA Administrator			
	Field Operations Superintendent			

Pay Grade	Position Title	Minimum	Midpoint	Maximum
NAGE (NON-EXEMPT)				
U-1	Utilities Maintenance Worker I	$13.12	$16.79	$20.46
		$27,289.60	$34,923.20	$42,556.80
U-2	Utilities Maintenance Worker II	$14.56	$18.68	$22.80
		$30,284.80	$38,854.40	$47,424.00
U-3	Utilities Maintenance Worker III	$16.17	$20.80	$25.43
		$33,633.60	$43,264.00	$52,894.40
O-T	Operator Trainee	$15.75	$18.28	$20.80
		$32,760.00	$38,012.00	$43,264.00
O-C	Operator C	$17.98	$23.19	$28.39
		$37,398.40	$48,224.80	$59,051.20
O-B	Operator B	$18.97	$24.49	$30.00
		$39,457.60	$50,928.80	$62,400.00
O-A	Operator A	$20.02	$25.87	$31.72
		$41,641.60	$53,809.60	$65,977.60
O-S	Chief Treatment Plant Operator -**NON-UNION (EXEMPT)**	$23.97	$31.07	$38.16
		$49,857.60	$64,615.20	$79,372.80

Attachment: Pay Plan - FY 2021-2022 (3612 : Reorganization of Police Department)

Pay Grade	Position Title	Minimum	Midpoint	Maximum
FIRE-IAFF (NON-EXEMPT)				
F-1	Firefighter/EMT	$13.04	$16.69	$20.33
		$37,972.48	$48,586.72	$59,200.96
F-2	Firefighter Driver/EMT	$13.91	$17.83	$21.75
		$40,505.92	$51,920.96	$63,336.00
F-3	Fire Lieutenant/EMT	$16.39	$21.10	$25.80
		$47,727.68	$61,428.64	$75,129.60

Pay Grade	Position Title	Minimum	Midpoint	Maximum
POLICE-PBA (NON-EXEMPT)				
P-1	Police Officer	$18.32	$23.38	$28.44
	84 hour pay cycle	$40,010.88	$51,061.92	$62,112.96
P-2	Police Sergeant	$22.90	$29.51	$36.11
	84 hour pay cycle	$50,013.60	$64,438.92	$78,864.24
P-3	Police Lieutenant	$26.01	$34.60	$43.19
	40 hour per week	$54,100.80	$71,968.00	$89,835.20

Pay Grade	Position Title	Minimum	Midpoint	Maximum
NON-UNION - MANAGEMENT (EXEMPT)				
E-1	Accounting Manager	$32.75	$37.56	$42.37
	Public Works Administration Manager	$68,120.00	$78,124.80	$88,129.60
E-2	Human Resources Manager	$35.63	$40.02	$44.41
	Information Technology Manager	$74,110.40	$83,241.60	$92,372.80
E-3	Assistant Finance Director	$36.84	$41.70	$46.55
	Chief Building Official	$76,627.20	$86,725.60	$96,824.00
	Deputy Police Chief			
	Deputy Public Works Director			
E-4	Community Development Director	$39.96	$45.97	$51.98
	Fire Chief	$83,116.80	$95,617.60	$108,118.40
	Police Chief			
E-5	Public Works Director / City Engineer	$44.77	$54.39	$64.00
	Finance Director	$93,121.60	$113,120.80	$133,120.00

Attachment: Pay Plan - FY 2021-2022 (3612 : Reorganization of Police Department)

City of Holly Hill
Police Reorganization Model Analysis
Beginning Fiscal Year 2022

Description	Year 1	Year 2	Year 3	Year 4	Year 5
Original Personnel Budget	**2,729,580**	**2,936,100**	**3,142,020**	**3,288,770**	**3,441,760**
Changes since original Budget Development					
Culver retirment filled with entry level $31k savings					
Two officer positions turnover with new officers at entry level $3k savings					
Model 1	**2,580,200**	**2,806,670**	**3,019,480**	**3,118,030**	**3,252,680**
Deputy Chief promotion to Chief					
Lieutenant promoted to Capitain					
Depuy Chief/Lieutenant 1 FTE elimnated					
Add 1 FTE Traffic Officer for 75% of year 1, year 2-5 at 100%					
Reclass Admin Asst. to Admin Supv.					
Additional Costs new FTE	**3,000**	**1,500**	**1,500**	**1,500**	**1,500**
Savings Model 1	**146,380**	**127,930**	**121,040**	**169,240**	**187,580**
Model 2	**2,609,810**	**2,843,600**	**3,052,670**	**3,196,340**	**3,344,930**
Deputy Chief promotion to Chief					
Lieutenant promoted to Capitain					
Depuy Chief/Lieutenant 1 FTE elimnated					
Add 1 FTE Traffic Officer for 75% of year 1, year 2-5 at 100%					
Reclass Admin Asst. to Admin Supv.					
Add .5 FTE Training Coordinator for 75% year 1, year 2-5 at 100%					
Additional Costs new FTE	**4,500**	**2,250**	**2,250**	**2,250**	**2,250**
Savings Model 2	115,270	90,250	87,100	90,180	94,580
Model 3	**2,646,080**	**2,894,150**	**3,107,530**	**3,254,300**	**3,408,540**
Deputy Chief promotion to Chief					
Lieutenant promoted to Capitain					
Depuy Chief/Lieutenant 1 FTE elimnated					
Add 1 FTE Traffic Officer for 75% of year 1, year 2-5 at 100%					
Reclass Admin Asst. to Admin Supv.					
Add 1 FTE CID Officer for 75% of year 1, year 2-5 at 100%					
Additional Costs new FTE	**6,000**	**3,000**	**3,000**	**3,000**	**3,000**
Savings Model 3	**77,500**	**38,950**	**31,490**	**31,470**	**30,220**
Other Assumptions					
Health care costs will increase 7.5% per year-No changes in other benefit rates					

Attachment: P.D. Re-Org. Model Summary (3612 : Reorganization of Police Department)