CITY OF HOLLY HILL, FLORIDA

CITY COMMISSION

AGENDA ● JULY 9, 2024

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 Reverend Larry Edwards, Chaplain for State Attorneys Office
c. Pledge of Allegiance

2. SWEARING-IN CEREMONY - POLICE CHIEF BYRON K. WILLIAMS

A. National Anthem - Jacqueline D. Williams
B. Police Chief Badge Pinning - Mrs. Ronette Williams

3. PUBLIC COMMENTS

4. APPROVAL OF MINUTES

1. Minutes - June 25, 2024 Workshop - Sunrise Park North Playground, June 25, 2024 Regular City Commission Meeting; and July 2, 2024 Workshop on Utility Rate Study

   (Requested by Valerie Manning, City Clerk)

5. CONSENT AGENDA - ITEM (1)

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 –2024-R-47 A Resolution of the City Commission of the City of Holly Hill, Florida, Approving an Agreement with Florida Power and Light Company for the Conversion of Halogen Lighting to LED Lighting at the Intersection of Nova Road and Golf Avenue and Various Locations on Ridgewood Avenue, and Authorizing the City Manager to Execute the Same; Providing for Severability; and Providing for an Effective Date.

   (Requested by Antoine Khoury, Public Works)

6. REGULAR AGENDA

1. Resolution –2024-R-48 A Resolution of the City Commission of the City of Holly Hill, Florida, Approving a Wastewater Facility Plan for Incorporation into the City's SAHFI Grant Application as Prepared by Mead & Hunt, Inc.; Providing for Severability; and Providing an Effective Date.

   (Requested by Antoine Khoury, Public Works)

2. Resolution –2024-R-49 A Resolution of the City Commission of the City of Holly Hill, Florida, Approving a Water Facility Plan for Incorporation into the City's SRF-SAHFI Grant Application as Prepared by Mead & Hunt, Inc., Providing for Severability and Providing for an Effective Date.

   (Requested by Antoine Khoury, Public Works)

7. PUBLIC HEARINGS

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.

1. VARIANCE – 217 Walker Street - Request a Variance from the Requirements of Sec. 114-742 (2) A. 2 Requiring that Accessory Structures in All Zoning Districts be Located Behind the Principal Structure on the Lot. Such Request is Made in Order to Place a 80 Square Foot Shed on a Parcel in the R-3 (Single-Family) Zoning District, Located on the South Side of Walker Street, Approximately 250 Feet West of Daytona Avenue, and More Particularly Known as 217 Walker Street; (Christina Sullivan, Applicant) (Brian Walker, City Planner).

   (Requested by Brian Walker, Board of Planning and Appeals)

8. COMMUNICATIONS

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

9. 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.

STAFF REPORT
CITY OF HOLLY HILL, FLORIDA

City Commission
Agenda Item

MEETING DATE: **July 9, 2024**
FROM: **Valerie Manning**
SUBJECT: **Minutes - June 25, 2024 Workshop - Sunrise Park North Playground, June 25, 2024 Regular City Commission Meeting; and July 2, 2024 Workshop on Utility Rate Study**
NUMBER: **(ID # 4562)**
APPLICANT:
PLANNER:

DISCUSSION:

Minutes from the June 25, 2024 workshop on the Sunrise Park North Playground, June 25, 2024 regular City Commission meeting and the July 2, 2024 workshop on the Utility Rate Study by Raftelis Consulting Group.

MOTION:

Approve the minutes as submitted by staff.

- Minutes - June 25, 2024 - Workshop - Sunrise Park North Playground (PDF)
- Minutes - June 25, 2024 - Regular City Commission meeting (PDF)
- Minutes - July 2, 2024 - Workshop - Utility Rate Study by Raftelis Consulting Group (PDF)

CITY OF HOLLY HILL, FLORIDA

CITY COMMISSION

MINUTES ● JUNE 25, 2024

City Commission Chamber **Work Session** **5:00 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	

2. SUNRISE PARK PLAYGROUND EQUIPMENT DISCUSSION

1.

Sunrise Park Playground Equipment Discussion

(Requested by Antoine Khoury, Public Works)
Steve Juengst, Administration Manager for Public Works briefly went over his staff report to the Mayor and City Commissioners pertaining to the ITB 24-BG-04 Sunrise Park North Playground - CDBG. For Fiscal Year 2023/2024, the City of Holly Hill received an allocation of $94,857 from the U.S. Department of Housing and Urban Development's (HUD) Community Development Block Grant (CDBG) program. The City Commission approved the use of this year's CDBG award to provide a new playground at Sunrise Park North. On Tuesday, June 11, 2024 the City held a bid opening for this project with a fixed budget of $350,000. A total of 8 (eight) playground manufacturers offered bids, with some manufacturers offering more than one design for consideration. Due to this project being grant funded, proposals were sought for a fixed budget of $350,000. This parameters for the proposals were that all playgrounds were to include safety surfacing, include installation costs and with preference given to themed playgrounds. As such, the determination of the winning bidder was to be based on the amount and quality of the playground equipment offered and warranties offered. Use of stainless steel or galvanized materials were highly recommended due to the proximity of the playground location to the Halifax Intracoastal Waterway. All bids submitted include safety surfacing and installation. All vendors offer varying degrees of rust resistant materials.
At this time the Mayor and City Commissioners went through the bid submittals from

Attachment: Minutes - June 25, 2024 - Workshop - Sunrise Park North Playground (4562 : Minutes)

all eight (8) vendors to decide which design they felt was most desired. The ***consensus*** from the City Commission was to award the bid to **KorKat Playgrounds** for the new playground at Sunrise Park North.

In other business to discuss:

Mr. Forte asked the Mayor and Commissioners if they can look over the two options for a plaque for the new Fire Station. There was ***consensus*** to go with **option 2** and to remove Doug Bell's name.

3. ADJOURNMENT

The workshop adjourned at approximately 5:40 PM.

Attachment: Minutes - June 25, 2024 - Workshop - Sunrise Park North Playground (4562 : Minutes)

CITY OF HOLLY HILL, FLORIDA

CITY COMMISSION

MINUTES ● JUNE 25, 2024

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 Penny
Pastor Chuck McKeown, United Brethren in Christ (UBIC) led the invocation.

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

2. PUBLIC COMMENTS

Mayor Via stated we understand that the you have many valid questions that need to be answered and so this is unusual for the meeting. Usually, we go right into public comments but we thought it was important tonight for transparency purpose to go ahead and answer all of those lingering questions. The ones that I've been fielding non-stop since the report has come out. City staff, as well as, I'm sure the City Commission, received those same phone calls. I know I've spoken to many of you here in the audience. I'm looking out and seeing many familiar faces but I still think it's important and I asked that the City Manager provide some of those answers and then afterwards I'm going to then open up public comments and allow you to come up and speak and say whatever you want for 5 minutes about anything not on our agenda tonight. You can feel free to ask questions but I just want to remind everyone that this setting isn't a Q&A. On Thursday night we will be hosting right here in these same Chambers a "Meet and Greet" with our new Police Chief who's coming in to be sworn in. You will be able to meet him and you will be able to hear his vision but you will also be able to ask questions. I expect other people to be there that maybe couldn't have been here tonight. We will be answering these questions there as well. At this time I just wanted to make sure everybody was aware that we're going to go through this process that way and I'd ask for everybody to please stay respectful throughout this meeting. Everyone will get their chance to speak, I promise you. We want to hear it and we welcome all comments from the audience. With that, at this time, I'd like to turn the microphone over to our City Manager

Attachment: Minutes - June 25, 2024 - Regular City Commission meeting (4562 : Minutes)

Mr. Forte.

Mr. Forte stated, thank you Mayor. I was asked to put together a brief, I don't want to say presentation, but a brief statement about primarily what would be the infamous e-mail that everybody is talking about. I'm going to just go right into it and then afterward, as we take public comment, I'll keep note of any question that's not addressed and I'll do the best I can to address those questions. Keeping in mind that there are still outstanding lawsuits, both personal and through the EEOC, so some questions I may not be able to answer. I'll probably lean over to Attorney Scott Simpson for some advice if I need to.

Mr. Forte began to read his statement into the record: Let me begin. To gain insight into the decisions I made, we need to kind of rewind the clock several months before September 20, 2023 when Robert Milne sent me an e-mail. It's crucial to apply the reasonable person standard, was the decisions I made then reasonable based on the facts available at that time. I aim to answer all the questions openly tonight and transparently. I'm going to try to address the Robert Milne e-mail of September 25, 2023, as well as, the resignations of Miller, Yates and Fountain, Bentley's demotion and pay decrease and the actions taken against Investigator Ballentine. I have compiled nearly four pages in response to what I knew of Robert Milne's e-mail and the circumstances at that time. I reviewed again everything he stated in the e-mail and to the Investigators and I've researched every claim he made. Some of it is quite technical and contains matters of Labor Law, and the Police Officers Bill of Rights. So, for time's sake, I will go through the areas that are pertinent to this case specifically, but I want you to know I have much more detailed information on everything that was stated in the in the e-mail. Here's what I knew. Jeff Miller served as Police Chief and at the time, was considered to be serving well. No one and I'll emphasize no one, approached my office or HR with reports of inappropriate behavior or language except once when his assistant raised concerns to HR about his frequent use of explicit language using the "F" word. Although she requested confidentiality, when I was informed that same day I promptly directed Miller to adjust his language. More recently a memo was issued to the department wide to cease the use of foul language. It should be noted, before Miller was appointed Police Chief, I personally met with every Sergeant, including Milne and specifically asked if they had any reservations about his appointment. I received no objections. That would have been an opportune time for Milne to make me aware of his concerns. It never happened. On September 25, 2023 I received an e-mail from Robert Milne that seemed to be a personal attack or a character assassination against Miller. Possibly stemming from Milne's recent unsuccessful pursuit of a Disability Pension. It was no secret that Milne and Miller disliked each other. The e-mail raised questions about Milne's credibility given the timeline and circumstances surrounding his departure from the Department. I'm going to give you a little bit of a timeline that I knew at that time. September 30th of 2021 Milne voluntarily demoted. He would have you believe it was for various reasons when in fact it was because he failed to properly handle a missing person's investigation and in lieu of an IA, he self-demoted and signed a release waving any and all rights to the grievance process or to make any claim against the city, all this in the presence of his union representative. January 25, 2022 was the last time Robert Milne worked as a police officer in the Holly Hill Police Department. He went out on Family Medical Leave. February 3rd of 2022 Milne's law enforcement authority was suspended. I'm unable to expand on the details surrounding the suspension of that authority. April 25, 2022 Milne exhausted all of his FMLA and was separated from

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employment, in essence, he was terminated. Robert Milne did not retire from the Holly Hill Police Department as some may have thought. August 12, 2022 a workers comp benefits denial form regarding Milne stated the claimant knowingly and intentionally made false fraudulent and misleading oral and written statements regarding the alleged accident in support of his claim and in order to obtain workers compensation benefits. Thereby, discrediting him in my mind. On April 17th the Pension Board unanimously voted against Milne to sign a denial order letter in former Milne's disability case, all were in favor. Milne's credibility was further challenged when he waited 20 months after leaving the department and 17 months after he was separated to disclose his concerns to me. His timing coincided with the denial of his Disability Pension raising doubt about his motivations. To further my concerns of credibility, within the email Milan declared himself spiraling out of control, suffering from panic attacks, nightmares, suicidal ideation, the process of forming ideas from conceptions implementation, alcoholism bringing on board depression and anxiety and blacking out in his patrol car. All these statements steered me to reach a conclusion that Robert Milne was being vindictive and lacked credibility. All that information is in the public record, in the email that was produced, it's no secret in what I just said. To be abundantly clear, at no point in all of my years working here, did anyone ever report any inappropriate behavior taking place in the police department. Especially not to the magnitude that has recently been reported. Milne's e-mail insinuated inappropriate behavior from Miller over seven and a half years of his tenure that he had with the Holly Hill Police Department. It should be noted that Milne's e-mail did not have any indication of the circumstances uncovered during this IA. He alleged various misconducts by Miller, such as inappropriate viewing of videos and other behaviors, which I addressed promptly with Miller the next day. I concluded that there was no issues with an officer eating her meals in her patrol car; that was not unusual. I also concluded that the videos mentioned were not that of porn as some may have imagined but were Netflix shows, to this day, that's all that I've been told and the photos of Traylor's ex-girlfriends were described as Traylor boasting about them not so much as Miller asking for them. It all seemed plausible at the time. After reading the Volusia County, after the Volusia County Sheriff's Office interviews, Yates and Fountain resigned under investigation, akin to a resignation, oh sorry, akin to a termination. Concerning Bentley, while it was challenging to conclude wrongdoing, two allegations were sustained resulting in his demotion. The appropriate CJSTC Form 78 was completed on all four of them and sent to FDLE as required. With regard to Bentley, I demoted him from Sergeant to MPO 2, Master Patrol Officer 2. The reason for making him MPO 2 was to avoid the opportunity for Bentley to be able to promote up to MPO if I demoted him to Patrol Officer, thereby, receiving a wage increase and that's exactly what I was trying to avoid. I want to be clear when I say that he received a pay decrease, as some have stated he has not. The fact is he's now earning 10% less than he was as a Sergeant, period. Any reference to percent raises due to his position are due to the union contracts, which include differential pay for certain positions. The bottom line is he's annually making 10% less than he was prior to his demotion. The reasons for the decision to demote rather than terminate is due to the information that I received in the IA about Bentley. The claims made in subsequent investigation did not rise to the level of termination as some would think. Even after a lengthy discussion with the city's Attorney assigned to this case, it was agreed that termination would not be applicable. Lastly, Officer Ballentine was suspended for a week. His indiscretion sending the calendar of invite was reviewed and the ladies involved were

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interviewed by the Human Resources Manager and it was determined that a week suspension was appropriate for his actions. Reflecting on the situation in the same hindsight that most of you do that are sitting in this audience, I do regret not advancing the matter to an IA knowing what I know today. Going forward, all allegations will be thoroughly investigated and referred to Internal Affairs as necessary. With the appointment of BK Williams as the new Police Chief starting on July 8th, I expect positive changes and full compliance within the Holly Hill Police Department. That's my statement, Mayor and I'll be available. Obviously, I'm here to answer any questions that come up this evening at your direction.

Mayor Via opened public comments.

The following individuals spoke to the Mayor and City Commissioners:

Robert Milne, New Smyrna Beach; James Kenny, Port Orange; Mary Teresa Nichols, Holly Hill; Mason Godfrey, Ormond Beach; Mark Dickinson, confidential address; Jim Legary, Holly Hill; Gabriel Varga, Ormond Beach; Paul Tomasi, Holly Hill; Arthur Byrnes, Holly Hill; Michele Pelham, Holly Hill; Robin Hanger, Holly Hill; Lynn Smith, Holly Hill; Linda Ennis, Holly Hill.

Mayor Via closed public comments.

3. APPROVAL OF MINUTES

Mayor Via opened public participation. No one spoke.

1.

Minutes - June 11, 2024 - Regular City Commission Meeting

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

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

Enacted and approved this 25th day of June, 2024, in Holly Hill

4. CONSENT AGENDA - ITEMS (1 - 6)

Mayor Via asked if there was anyone in the audience that wished to speak on any item on the Consent Agenda or if any member of the Commission wished to pull an item for further discussion. There was no one.

1. -2024-R-43 Resolution

A Resolution of the City Commission of the City of Holly Hill, Florida, Authorizing the City Manager to Enter into an Agreement with Mead and Hunt, Inc., to Provide

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Professional Services for the Project Tidal Backflow Preventer Not to Exceed $68,089; Providing for Severability; and Providing for an Effective Date.

(Requested by Antoine Khoury, Public Works)

RESULT:	**ADOPTED [UNANIMOUS]**
MOVER:	Roy Johnson, District 4 - Commissioner
SECONDER:	John C. Danio, District 3 - Commissioner
AYES:	Via, Penny, Currie, Danio, Johnson

RESOLUTION
2024-R-43
A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF HOLLY HILL, FLORIDA, AUTHORIZING THE CITY MANAGER TO ENTER INTO AN AGREEMENT WITH MEAD AND HUNT, INC., TO PROVIDE PROFESSIONAL SERVICES FOR THE PROJECT TIDAL BACKFLOW PREVENTER NOT TO EXCEED $68,089; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF HOLLY HILL, FLORIDA, AUTHORIZING THE CITY MANAGER TO ENTER INTO AN AGREEMENT WITH MEAD AND HUNT, INC., TO PROVIDE PROFESSIONAL SERVICES FOR THE PROJECT TIDAL BACKFLOW PREVENTER NOT TO EXCEED $68,089; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City Commission of the City of Holly Hill approved the proposed capital project as part of the fiscal year 2023-24 budget; and

WHEREAS, the City has a continuing services agreement with and has received a proposal from Mead and Hunt, Inc., to perform the engineering services for this 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 does hereby authorize the City Manager to enter into an agreement with Mead and Hunt, Inc., to provide professional services for the project Tidal Backflow Preventer not to exceed $68,089.

SECTION 2. 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. This Resolution shall take effect immediately upon its adoption.

APPROVED AND AUTHENTICATED on this 25th day of JUNE, 2024.

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Enacted and approved this 25th day of June, 2024, in Holly Hill

2. –2024-R-44 Resolution

A Resolution of the City Commission of the City of Holly Hill, Florida, Approving the FY2024/2025 CDBG Annual Plan Application as Submitted; Providing for Severability; and Providing an Effective Date.

(Requested by Antoine Khoury, Public Works)

RESULT:	**ADOPTED [UNANIMOUS]**
MOVER:	Roy Johnson, District 4 - Commissioner
SECONDER:	John C. Danio, District 3 - Commissioner
AYES:	Via, Penny, Currie, Danio, Johnson

RESOLUTION
2024-R-44
A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF HOLLY HILL, FLORIDA, APPROVING THE FY2024/2025 CDBG ANNUAL PLAN APPLICATION AS SUBMITTED; PROVIDING FOR SEVERABILITY; AND PROVIDING AN EFFECTIVE DATE.

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF HOLLY HILL, FLORIDA, APPROVING THE FY2024/2025 CDBG ANNUAL PLAN APPLICATION AS SUBMITTED; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, Volusia County qualifies as an urban entitlement community and receives funds directly from the U.S. Department of Housing and Urban Development's Community Block Grant Program; and

WHEREAS, The City of Holly Hill is a participating City in the Community Development Block Grant program and is anticipated to receive $102,966 in grant funds to carry out community development activities; and

WHEREAS, staff has selected the 7th Street Neighborhood Park Playground as the fiscal year 2024-2025 CDBG Project; and

WHEREAS, due to the timeline of the grant process, these projects have been submitted to Volusia County Community Assistance as a placeholder contingent upon City Commission Approval.

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 approve the FY 2024/2025 CDBG Annual Plan Applications as submitted.

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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 JUNE, 2024.

Enacted and approved this 25th day of June, 2024, in Holly Hill

3. -2024-R-45 Resolution

A Resolution of the City Commission of the City of Holly Hill, Florida, Authorizing the City Manager to Enter into a Three (3) Year Contract, with the Option for Two One Year Renewals, with H&H Liquid Sludge Disposal, Inc., to Provide Sludge Removal, Hauling and Disposal Services; Providing for Severability; and Providing for an Effective Date.

(Requested by Antoine Khoury, Public Works)

RESULT:	**ADOPTED [UNANIMOUS]**
MOVER:	Roy Johnson, District 4 - Commissioner
SECONDER:	John C. Danio, District 3 - Commissioner
AYES:	Via, Penny, Currie, Danio, Johnson

RESOLUTION
2024-R-45
A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF HOLLY HILL, FLORIDA, AUTHORIZING THE CITY MANAGER TO ENTER INTO A THREE (3) YEAR CONTRACT, WITH THE OPTION FOR TWO ONE YEAR RENEWALS, WITH H&H LIQUID SLUDGE DISPOSAL, INC., TO PROVIDE SLUDGE REMOVAL, HAULING AND DISPOSAL SERVICES; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF HOLLY HILL, FLORIDA, AUTHORIZING THE CITY MANAGER TO ENTER INTO A THREE (3) YEAR CONTRACT, WITH THE OPTION FOR TWO ONE YEAR RENEWALS, WITH H&H LIQUID SLUDGE DISPOSAL, INC., TO PROVIDE SLUDGE REMOVAL, HAULING AND DISPOSAL SERVICES; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City Commission of the City of Holly Hill approves the Utility operational budget annually to include sludge disposal; and

WHEREAS, the City has competitively bid the contract which had the bid

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opening on May 28, 2024; and

WHEREAS, H&H Liquid Sludge Disposal, Inc., was the lowest responsive bidder, at $37.00/CY for year 1, $38.50/CY for year 2 and $39.75 CY for year 3.

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 does hereby authorize the City Manager to enter into a three (3) year agreement, with the option for two one year renewals, with H&H Liquid Sludge Disposal, Inc., to provide sludge removal, hauling and disposal services taking effect on October 1, 2024.

SECTION 2. 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. This Resolution shall take effect immediately upon its adoption.

APPROVED AND AUTHENTICATED on this 25th day of JUNE, 2024.

Enacted and approved this 25th day of June, 2024, in Holly Hill

4.

River to Sea Transportation Planning Organization (TPO) Funding Agreement for FY2024-2025

(Requested by Valerie Manning, City Clerk)

RESULT:	**APPROVED [UNANIMOUS]**
MOVER:	Roy Johnson, District 4 - Commissioner
SECONDER:	John C. Danio, District 3 - Commissioner
AYES:	Via, Penny, Currie, Danio, Johnson

Enacted and approved this 25th day of June, 2024, in Holly Hill

5.

JAG Grant FY2023 Allocation of Funds

(Requested by Valerie Manning, City Clerk)

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RESULT:	**APPROVED [UNANIMOUS]**
MOVER:	Roy Johnson, District 4 - Commissioner
SECONDER:	John C. Danio, District 3 - Commissioner
AYES:	Via, Penny, Currie, Danio, Johnson

Enacted and approved this 25th day of June, 2024, in Holly Hill

6.

Brown & Brown - Second One-Year Renewal Agreement - Employee Benefits Insurance Agent of Record

(Requested by Valerie Manning, City Clerk)

RESULT:	**APPROVED [UNANIMOUS]**
MOVER:	Roy Johnson, District 4 - Commissioner
SECONDER:	John C. Danio, District 3 - Commissioner
AYES:	Via, Penny, Currie, Danio, Johnson

Enacted and approved this 25th day of June, 2024, in Holly Hill

5. REGULAR AGENDA

1. –2024-R-46 Resolution

A Resolution of the City Commission of the City of Holly Hill, Florida, Awarding the Replacement Playground at Sunrise Park and Authorizing the City Manager to Execute a Contract with the Awarded Vendor; Providing for Severability; and Providing for an Effective Date.

(Requested by Antoine Khoury, Public Works)
Mayor Via opened public participation.
Arthur Byrnes, Holly Hill; Lynn Smith, Holly Hill.
Mayor Via closed public participation.

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

RESOLUTION
2024-R-46
A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF HOLLY HILL, FLORIDA, AWARDING THE REPLACEMENT PLAYGROUND AT SUNRISE PARK AND AUTHORIZING THE CITY MANAGER TO EXECUTE A CONTRACT

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WITH THE AWARDED VENDOR; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF HOLLY HILL, FLORIDA, AWARDING THE REPLACEMENT PLAYGROUND AT SUNRISE PARK AND AUTHORIZING THE CITY MANAGER TO EXECUTE A CONTRACT WITH THE AWARDED VENDOR; AND PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, a replacement playground at Sunrise Park North has been identified in the fiscal year 2023-2024 budget as desired; and

WHEREAS, the City of Holly Hill has received an award of $94,857 from a Community Development Block Grant towards this project; and

WHEREAS, bids were received on March 12, 2024 with a fixed budget of $250,000 but were rejected by the City Commission on March 26, 2024 as they did not offer the statement desired project; and

WHEREAS, this project was re-broadcast on April 26, 2024 with a fixed budget of $350,000; and

WHEREAS, a bid opening was held on June 11, 2024 in which proposals from (8) eight playground manufacturers were received.

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

SECTION 1. That the City Commission has selected a desired proposal for the replacement of the Sunrise Park North playground.

SECTION 2. That the City Commission authorizes the City Manager to execute an agreement with the awarded vendor.

SECTION 3. 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 4. EFFECTIVE DATE. This Resolution shall take effect immediately upon its adoption.

APPROVED AND AUTHENTICATED on this 25th day of JUNE, 2024.

Enacted and approved this 25th day of June, 2024, in Holly Hill

Attachment: Minutes - June 25, 2024 - Regular City Commission meeting (4562 : Minutes)

2.

Lien Reduction - 654 6Th Street

(Requested by Brian Walker, Board of Planning and Appeals)

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 25th day of June, 2024, in Holly Hill

6. PUBLIC HEARINGS - NONE

7. COMMUNICATIONS

A. City Manager Comments

Mr. Forte mentioned that he thinks tonight it's the end of an era and the start of a new. It's time for him to go back to doing his job as a city manager and wait for Chief Williams. When he gets sworn in as Chief, he will take over that department on July 8th and set all these things aside and let Chief Williams do the job that he's hired to do. Mr. Forte stated from his perspective it's been extremely time consuming and he has a job to do and he needs to get started on that and continuing to do that. He is no longer responding to anonymous e-mails and some of the other, what he will call frivolous communications that he's been getting. It's time for him to move forward. Mr. Forte thanked the Mayor and the Commission for their support.

The CDBG-DR (Disaster Recovery) Item:

Mr. Forte spoke briefly on this item, mostly for informational purposes only. These are monies that were made available to the city following some of the Hurricanes. Actually, money that was made available to the County following the Hurricanes, that they opened up this application process. Public Works, Mr. Khoury and especially, Mr. Juengst submitted for three grant applications. It's competitive but there's a lot of money that's available and so we put in for a couple of items. Over the next 30-days or so the County will be taking votes on that and hopefully will be funded for at least one or more of those projects that we submitted. Three (3) projects have been identified as strong candidates for the application of funding assistance. They are: the cleaning and lining of sanitary sewer pipes; the cleaning and lining of storm sewer pipes and the replacement and flood protection of chemical storage tanks used in the treatment process for water and wastewater. *(more information in the agenda packet on this item)*

a.

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Community Development Block Grant Disaster Recovery Funds (CDBG-DR) Applications

(Requested by Joseph Forte, City Manager)

B. City Attorney Comments
None.

C. City Commission Comments
Commissioner Penny stated we went through a lot tonight and he just wants to say, it's his opinion, that there's no other City Commission, City Manager more accessible than these people sitting up here right now. Commissioner Penny stated he will personally refuse to respond to any anonymous, unsigned e-mails. He will also not respond to people that are unwilling to learn and grow from the truth. He continually heard so many mis facts spoken tonight by individuals in this audience, I chose not to respond because they wouldn't listen to him anyways. But when it comes to our City Manager, we heard people calling for him to resign or to be fired. He appreciates Mr. Forte's transparency. He has known him for a long time. He's not a 25-year old professional politician like he was accused of tonight. He thinks it's 19. He has known Mr. Forte for a long time and he doesn't know a person that has a better moral or ethical compass than Mr. Forte. The easy thing for him to do is to tender his resignation right now and walk away. Mr. Forte doesn't need this. There's only one person in this audience that knows the sleepless nights that he spent, the mental anguish that's been put on his body, the stress that's been put on his stomach and his digestive system and his brain and I appreciate that sir (Mr. Forte) because the easy thing is for you to leave.

Mr. Forte stated, thank you.

Commissioner Penny stated and I appreciate that you're going to stay with us and we're going to move forward, so thank you my friend.

Mr. Forte stated, thank you.

Commissioner Currie stated I would just like to start out by saying Mr. Forte didn't bring up Milne's mental health records to slam him here and make him look bad. Those were already out. They are in the IA report if you read the summary. They are in there and I've seen news reports where Milne was on camera talking about those same issues. Mr. Forte didn't bring him up here, he just reiterated them so that everybody knew and it was more of fair playing field. I can tell you that September of 2023 and I can only speak for myself because I don't talk to these guys about that stuff, I'm not allowed to, I sat down in Mr. Forte's office and he told me about an e-mail he received from previous officer Milne. I listened to the e-mail and what had to be said in there and I also knew because again I have close connections to the PD and always have, I also knew that Mr. Milne went through some troubled times and he was less than truthful in a couple situations where medical people deemed him as such. So, those things all being taken into account, the fact that this e-mail came within a month, I can't remember exactly but I know it was within a month of the denial of the disciplinary retirement. He hasn't been at the

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department since January 25th of 2022, so now all of a sudden we see something we have to say something according to his e-mail but he hadn't been here. He didn't choose to say something when he left. He chose to wait until after his disability claim was denied and that's the exact way I looked at it so I agreed with Mr. Forte. I thought it was a little more out of retaliation than anything else. Am I sorry for that? Oh hell yeah, sorry for the curse word, yes, I am because hindsight being 2020 Monday back, Monday quarter backing, I wish I had taken it more serious and didn't look at the fact that he was not super credible but I can tell you now in my discussions with Mr. Forte, moving forward, every single complaint, I don't care how valid it sounds, how credible the person is, we are looking into every single one of them. As a matter of fact, I think we had a couple complaints in the PD amongst a couple female officers that immediately was looked into. They were a he said, she said thing but it was taken care of and that's the way things will be handled here on out to ensure any information, that any of us receive, we take it with a little more of a open eye. I can assure you of that. I can tell you, I have known Mr. Forte since probably the early 90s, I think it was. When did you come here? Ninety, Ninety-two, something like.

Mr. Forte stated a month after Forrest got here.

Commissioner Currie stated I think he was your training officer.

Mr. Forte stated, no. Back when I was in the Fire Department.

Commissioner Currie stated, okay. I've known him a long, long time. Like I said, I volunteered in the PD for 20 years for the Police Explorers. I have known Mr. Forte for 10 years of my 12 years as a City Commissioner. He's been here and I do not know of another City Manager in the State of Florida that is so respected. He's respected by his peers, he's respected by other Council people. Every time we go to something I can't talk to Joe because everybody else wants to talk to Joe. He is very respected not only in our County but in the entire State. I don't know a person that has more integrity, more honesty, more professionalism, more transparency because the other city manager I had to deal with certainly wasn't any of that. That would be McCroskey. I'm not afraid to say it. We had our going. You could have a McCroskey back people. Who wants that? This man (Mr. Forte) is very serious about any allegations. That's why when a victim made the complaint, he immediately had the Sheriff's department do the internal affairs investigation because he didn't want us doing that on ourselves. He had them do it and that's how Mr. Chitwood came about doing the internal affairs investigation. The Sheriff's department just doesn't willy-nilly come into a department and start doing an IA. They have to be requested to do so. He made those steps and made it possible. We did learn about all this crap from our former, I don't want to call him a Chief either, but for those reasons and probably many more that I'm not thinking about. Sir, (Mr. Forte), I have no intentions of asking you to relieve yourself of your duties or anything even close to that. Thank you for everything you have done since you and I have been on this together for almost 10 years now.

Mr. Forte stated, thank you.

Commissioner Danio stated we went to the same elementary school together I think. I've known Joe longer than anybody. First of all, I want to clear up this politician stuff. I'm a

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civil servant in my eight year. There's no politician here. Joe Forte is a man of integrity but the best thing about Joe Forte for this city is that he's cheap and that's a good thing to have when you're a City Manager. He's very frugal people so keep that in mind but he is a man of integrity. Unfortunately, and I'm a boss, when you get a bad pizza, I could be napping but I'm to blame and it's the same thing when it comes to the City Manager. He's in charge. When it comes down to it, if something goes wrong, he's to blame. He could be in Hawaii on cruise but he's to blame. Unfortunately, that's just the way the hammer falls. Unlike my constituent or whatever, you know, I'm not going to belabor this here but thank you for doing your job and I'm behind you all the way and everybody else thanks you for sticking around and going through this. Hopefully, we didn't keep you here too long.

Commissioner Johnson stated I wouldn't go so far to say he's cheap but I'd say more anything expensive, right? I would look at myself more as being cheap and frugal. That's a good thing. Joe, I really appreciate it. Every time I call you for anything, if you don't answer you call back and you give me an answer. You always look into things. I remember when I was still the outgoing Mayor at the time, we brought it up to hire you back and I think he's (Attorney Simpson) was the one that instigated it. Was that true Scott? We decided to bring you back Joe. I think it was a good decision. I think it works out good and I really appreciate you hanging in there you. You don't let the people get to you that are so negative or against you. Things like that and all. I'm old and I let things roll off my back. I don't let things bother me very much. I've been in business in this area for 50 years and I have a lot of people who have worked for me, work with me and all. The one thing that bothers me more than anything else tonight and other times that I pick up on is that we have a former Commissioner that is a criminal because of what he did with some lady that he was working with that absolutely no charges was even brought against him and then we was accused of hiring the criminal that did that. It was brought up again tonight. This past City Commissioner is not even alive, he's been dead for like 2 years or something. What is the purpose of it? If I was a family member of this Commissioner that actually never had any charges brought against him, I think I would file a lawsuit against some of these people accusing like that, you know? I mean that is just totally ridiculous. Some things you can just, you're here, you can deal with it, you can let…you can take care of it, but if somebody can't do it anymore, his family's got to deal with it. You know what I mean? Why keep bringing that up when absolutely not one single charge was filed against him. It just doesn't make any sense. I've heard so many times lately, you hear it online, and then I heard it in person tonight, it's just ridiculous. I don't like that but otherwise, I deal with the situation. I know that bad things come. I've been through it; a lot worse back when we was dealing with the flag issue and all, which was totally false. We went through all that. On the brighter side, tomorrow is another TPO meeting. I know for sure that this Police Department is going to get straightened out and I know for sure that this new Police Chief is going to get it straightened out. I remember probably about a month ago his former boss, which used to be the Daytona Beach Police Chief called me and told me this guy has applied and name is Byron Williams. He said if you guys don't hire him, you're stupid or something like. He said he will do it and get it straightened out. This came together with all these applicants and he came out on top. I thought it was great. I called him back and told him, I said well, you're

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correct, I said, if we don't hire him, we're idiots but we hired him. The former Police Chief of Daytona said he will be here for the inaugurations. I appreciate Joe and I really appreciate you hanging in there. I appreciate you getting things straightened out. I knew you would. I didn't have any question about it. I knew you weren't going to roll over and play dead and give up. Thank you very much.

Mr. Forte stated I got a good Mayor and City Commission and a good City Attorney.

D. Mayor's Comments

Mayor Via stressed and pointed out how he feels about this because he knows that there are some in the audience that have requested that the Commission look at the City Manager and throw him out. Mayor Via stated what I have to say is I have worked with him for eight years now this is my eighth year and I can tell you there has been numerous incidents that when he found out about anything he took such immediate action. With certainty, I know that if he knew or suspected any of the activity that was in that report, I know with all of my being that he would have immediately went to investigators. There is not a person in the world that can convince me otherwise. There's not many people in this world that I can say that about. Those are my facts. Did I still investigate this? Did I question him to know end? Did I speak to the Sheriff specifically, about this? Did I speak with staff members? Did I speak to department heads? Yes, yes, and yes. Am I furious about what happened down there under that Chief ? I don't even want to call him Chief. I am furious. I am upset. No one should ever have to go through that ever. But I have to say, Mr. Forte, when you hold the reasonable standard, when you hold up what a reasonable person would do and you hold you to that standard, I believe, that you did take reasonable action to look into it as far as you could with the information that you had at the time and therefore, I will stand by you through this because I believe that you made the right decisions. Furthermore, I believe that you are doing the best decisions. Now, we can't correct what was done; what was done is done and now all that is left is to pick up the pieces and to be better than we were. I'm confident he is the best man in this position to do that and I can tell you with certainty nothing like this will happen again. I'm going to be a citizen, just a normal citizen, in a few months, I'm going out of office, but I've loved my time in office but he feels confident that we will have protection on our streets that we can be proud of. That I can trust, that my family will be protected and that's what I can do as your Mayor and that's what I'm going to be committed to do and I call for our citizens to get behind this next Police Chief. I call for our citizens to get behind our Holly Hill Police Department because these are the times that they need it. It's easy to say we support police, it's easy to say but it's harder when they need us to stand up for them and that's what I'm calling upon every fellow citizen of mine and that's what I will be doing. Mayor Via mentioned that he has received many calls from various people in high ranks regarding Police Williams and he was very impressed and he looks forward to him starting. He wants to make this a model agency. We will be better than ever.

8. ADJOURNMENT

The meeting adjourned at approximately 7:30 PM.

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CITY OF HOLLY HILL, FLORIDA

CITY COMMISSION

MINUTES ● JULY 2, 2024

City Commission Chamber **Work Session** **3:00 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	

2. UTILITY RATE STUDY DISCUSSION

1.

Utility Rate Study by Raftelis

(Requested by Valerie Manning, City Clerk)
Shawn Ocasio, Manager with Raftelis Consulting Group and Henry Thomas, Vice-President with Raftelis Consulting Group went through the following PowerPoint presentation with the Mayor, City Commissioners and staff as it pertained to the Water and Wastewater Utility Revenue Sufficiency Study that was completed by Mr. Ocasio and Mr. Thomas.

Project Background

- The last rate study was in FY 2019
  - Rates adopted for FY's 2020 - 2024
- Following prior rate plan has placed the utility in a solid financial position
  - Very strong operating fund balance with almost 300 days of rate revenues
  - Projected positive cashflows for 2024 (inflows greater than outflows)
  - Projected debt service coverage for 2024 of almost 360% (Gen. Target 150%)
- System has been operating in a high inflationary environment
  - Consumer Price Index - 20% increase since 2019
  - Construction Materials Index - 41% increase since 2019
  - Industrial Chemicals Index - 25% increase since 2019
- City's pursuit of grant funding providing major benefit to rate payers

Study Tasks and Approach

- Develop financial forecast to project water and wastewater system operations for Fiscal Years 2024 through 2029
- Project revenues and revenue requirements

Attachment: Minutes - July 2, 2024 - Workshop - Utility Rate Study by Raftelis Consulting Group (4562 : Minutes)

- Develop funding strategy for capital improvement plan
- Evaluate cash reserve targets and financial performance requirements
- Determine adequacy of revenues at existing rates

Study Goals and Considerations

- Maintain positive cashflow through the end of the forecast period (FY 2029)
  - › Inflows equal to outflows without the use of reserves
- Compliance with all debt service rate coverage covenants
  - › Senior lien (SunTrust Bonds) required coverage - 120%
  - › Subordinate lien (SRF Loans) required coverage - 115%
  - › All-In Coverage (all loans combined) target coverage - 150%
- Achieve adequate operating reserve balance levels
  - › 90 Days of rate revenues as required minimum balance
  - › 120+ Days of rate revenues as target minimum balance

System Customers, Growth, and Revenues

- Approximately 7,900 accounts in FY 2023
- Customer account growth of approx. 73 customers per year
  - › Approximately 1.1% per year
- Combined system rate revenues at existing rates approximating $7.9 million in FY 2024 increasing to $8.4 million by FY 2029
  - › Due to customer growth assumptions
- Other revenues of approximately $524,000 per year
  - › Misc. charges (service fees, penalty fees, etc.)
  - › Projected interest income
- Impact Fee Revenues of approximately $183,000 per year
  - › Based on projected customer growth

Revenue Requirements - Operating Expenses

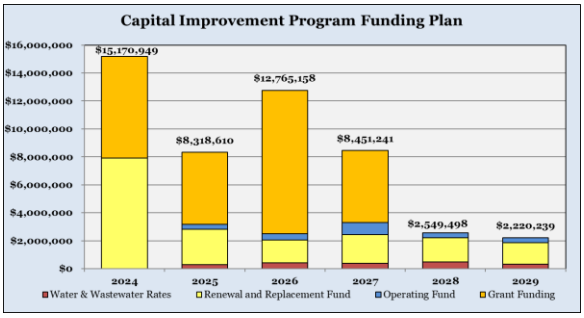
- FY 2024 Operating budget of $8.4 million in total expenditures adjusted down to $6.1 million in recurring operating expenses
  - › Adjustments for capital and debt payments and interfund transfers
  - › Adjustments for contingency and bad debt of approx. $114,000 per year
- $6.1 Million increasing to $8.2 million by FY 2029
  - › Average annual increase of approximately 6.2% per year
  - › Major escalation factors include:
    - Labor: 5.0% per year
    - Health Insurance: 15.0% per year
    - Chemicals / Fuel: 6.0% per year
    - Repair: 3.5% per year
    - General Inflation (CPI): 2.3% per year

Revenue Requirements - Capital Improvement Plan (CIP)

- Capital Improvement Plan (CIP) of $49.5 million from FY 2024 - 2029
  - › Water and wastewater plant improvements, asset renewals and replacements (R&R), and as other capital and equipment needs
- CIP to be funded through use of rates, reserves, and grants
  - › $27.8 Million in grant funded projects (56% of plan)
    - ARPA and SAHFI programs
      Avoided debt service costs of approximately $1.7 million per year
  - › $21.7 Million in rate and reserve funded projects (44% of plan)
    - Use of operating reserves, R&R reserves, and annual user rates

Revenue Requirements - Capital Improvement Plan (continued)

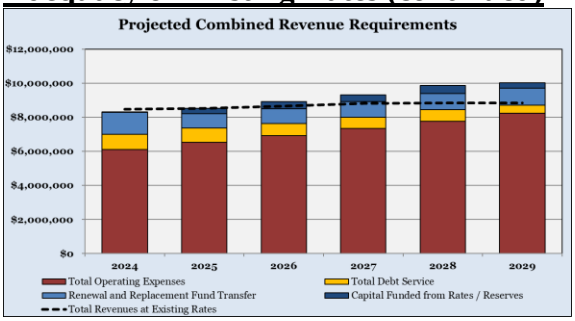
Attachment: Minutes - July 2, 2024 - Workshop - Utility Rate Study by Raftelis Consulting Group (4562 : Minutes)



Revenue Requirements - Debt Service

- Existing debt service of approximately $884,000 in 2024
  - Water and Sewer System Improvement Revenue Bonds, Series 2005 - $108,000
  - Water and Sewer System Revenue Bonds, Series 2011 - $345,000
  - SRF Loan #WW 709070 - $41,000
  - SRF Loan #WW 709080 - $329,000
  - 2019 Vacuum Truck Loan - $61,000
- Total existing payments decreasing to $487,000 by 2029 as debts are paid off
  - Series 2005 Bonds final payment in 2025
  - SRF Loan #WW 709070 final payment in 2027
  - SRF Loan #WW 709080 final payment in 2029

Adequacy of Existing Rates (continued)



Proposed Rate Adjustments Identified in the Financial Forecast

	2025	2026	2027	2028	2029
Water System	2.0%	2.0%	2.0%	2.0%	2.0%
Wastewater System	4.0%	4.0%	4.0%	4.0%	4.0%
Effective Date	Oct. 1, 2024	Oct. 1, 2025	Oct. 1, 2026	Oct. 1, 2027	Oct. 1, 2028

Adequacy of Proposed Rates for the Projected Combined Revenue Requirements, Operating Reserves Ending Balance, Capital Reserves Ending Balance, All-In Debt Service Coverage

(file too large; please refer to agenda packet for graphs)

Rate Comparison

(file too large; please refer to agenda packet for graphs)

Attachment: Minutes - July 2, 2024 - Workshop - Utility Rate Study by Raftelis Consulting Group (4562 : Minutes)

Observations and Recommendations

- Existing water and wastewater rates are not projected to be sufficient to recover revenue requirements through Fiscal Year 2029
- Adopt proposed monthly user rate adjustment plan
- Proposed rates are projected to:
  - Maintain positive operating cashflow through end of forecast period
  - Fulfill all coverage requirements and targets during forecast period
  - Maintain adequate operating and capital reserves
- Revisit plan in 3-5 years
  - Adjust for changes in operations, growth, capital costs, project timing, etc.

Mayor Via opened public participation.

Heidi Heller and David Kophf, Holly Hill.

Mayor Via closed public participation.

There was ***consensus*** to implement October 2024; public meeting notices will be added to the water utility bills for customers and newspaper for advertising purposes. The utility rates adoption will be at the September 9th City Commission meeting.

3. ADJOURNMENT

The workshop adjourned at approximately 4:05 PM.

Attachment: Minutes - July 2, 2024 - Workshop - Utility Rate Study by Raftelis Consulting Group (4562 : Minutes)

HOLLY HILL
FLORIDA

STAFF REPORT
CITY OF HOLLY HILL, FLORIDA

City Commission
Resolution

MEETING DATE: **July 9, 2024**
FROM: **Antoine Khoury**
SUBJECT: **A Resolution of the City Commission of the City of Holly Hill, Florida, Approving an Agreement with Florida Power and Light Company for the Conversion of Halogen Lighting to LED Lighting at the Intersection of Nova Road and Golf Avenue and Various Locations on Ridgewood Avenue, and Authorizing the City Manager to Execute the Same; Providing for Severability; and Providing for an Effective Date.**
NUMBER: **2024-R-47**
APPLICANT:
PLANNER:

DISCUSSION:

City staff have received a proposal from Florida Power and Light Company (FPL) to convert five (5) lighting fixtures, poles or both at the intersection of Nova Road and Golf Avenue and thirty-five (35) lighting fixtures, poles or both in various locations along Ridgewood Avenue from Walker Street to Calle Grande to be upgraded to LED lighting.

Exhibit A: FPL plans for Nova Road and Golf Avenue
Exhibit B: FPL Agreement for Nova Road and Golf Avenue
Exhibit C: FPL plans for Ridgewood Avenue
Exhibit D: FPL Agreement for Ridgewood Ave

The proposed agreement between FPL and the City for this work shall be for a term of ten (10) years from the date of initiation of service and shall extend thereafter for further successive periods of five (5) years unless terminated by the City Manager prior to the initial ten (10) year term, or any extension thereof.

FISCAL ANALYSIS:

There is no cost for this conversion.

STAFF RECOMMENDATION:

Staff recommends the City Commission approve the proposed agreement with FPL for lighting conversion from halogen to LED at the intersection of Nova Road and Golf Avenue and at various locations on Ridgewood Avenue.

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.

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 AGREEMENT WITH FLORIDA POWER AND LIGHT COMPANY FOR THE CONVERSION OF LIGHTING FROM HALOGEN LIGHTING TO LED AT THE INTERSECTION OF NOVA ROAD AND GOLF AVENUE AND VARIOUS LOCATIONS ON RIDGEWOOD AVENUE, AND AUTHORIZE THE CITY MANAGER TO EXECUTE THE SAME.

ATTACHMENTS:

- Exhibit A - Golf-Nova Intersection Lighting Plan (PDF)
- Exhibit B - Nova Rd Streetlights-FDOT-FPL (PDF)
- Exhibit C - Ridgewood Ave Lighting Plan - 2nd St to Calle Grande Lighting Project (PDF)
- Exhibit D - Ridgewood Ave Streetlights-Fdot-FPL (PDF)

Resolution No. 2024-47

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF HOLLY HILL, FLORIDA, APPROVING AN AGREEMENT WITH FLORIDA POWER AND LIGHT COMPANY FOR THE CONVERSION OF HALOGEN LIGHTING TO LED LIGHTING AT THE INTERSECTION OF NOVA ROAD AND GOLF AVENUE AND VARIOUS LOCATIONS ON RIDGEWOOD AVENUE, AND AUTHORIZING THE CITY MANAGER TO EXECUTE THE SAME; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF HOLLY HILL, FLORIDA, APPROVING AN AGREEMENT WITH FLORIDA POWER AND LIGHT COMPANY FOR THE CONVERSION OF HALOGEN LIGHTING TO LED LIGHTING AT THE INTERSECTION OF NOVA ROAD AND GOLF AVENUE AND VARIOUS LOCATIONS ON RIDGEWOOD AVENUE, AND AUTHORIZING THE CITY MANAGER TO EXECUTE THE SAME; AND PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, Florida Power and Light Company desires to convert lighting from halogen lighting to LED; and

WHEREAS, City staff have found the terms of the proposal from Florida Power and Light Company to be reasonable and appropriate.

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 authorize the City Manager to enter into an agreement with Florida Power and Light Company for the conversion from halogen lighting to LED lighting at the intersection of Nova Road and Golf Avenue and at various locations on Ridgewood Avenue at no cost to the City.

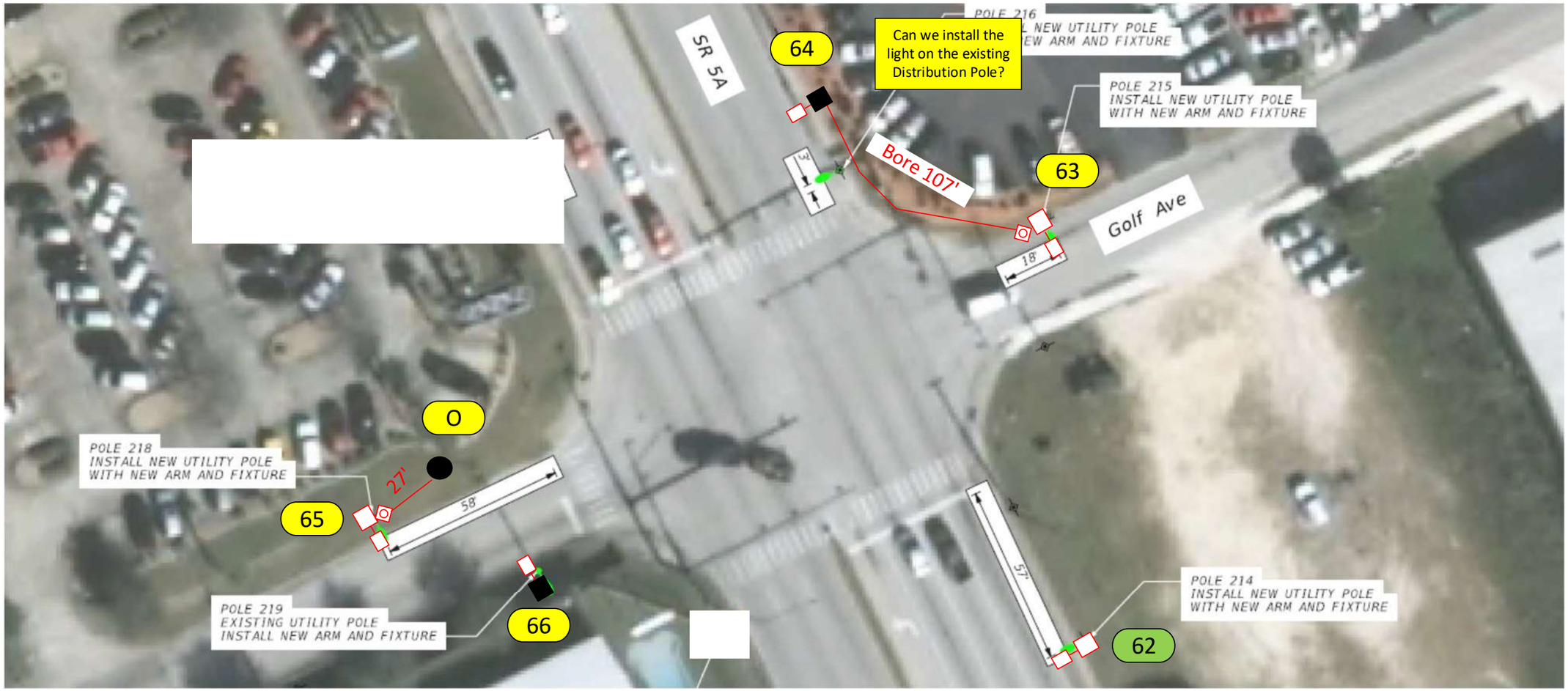
SECTION 2. SEVERABILITY. If any section or portion of a section of this Resolution proves to be invalid, unlawful, or unconstitutional, it shall not be held to invalidate or impair the validity, force, or effect of any other section or part of this Resolution.

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

APPROVED AND AUTHENTICATED on this 9th day of JULY, 2024.

HOLLY HILL

☐ INACCESSIBLE ☒ 13 kV ☐ FUTURE 23 kV ☐ 23 kV ☐ SALT SPRAY ☐



N

Construction Notes: (FPL Contractor installing conduit)

Loc 62: Install a 50' Concrete Distribution Pole and Install 1 AEL 259W ATBL 4K 28,091 Lumens with 12' Arm Bracket
Loc 63 and 65: Install 1 AEL 259W ATBL 4K 28,091 Lumens with 12' Arm Bracket on NEW 45' Concrete Pole (Mounting Height 35')
Loc 64 and 66: Install 1 AEL 259W ATBL 4K 28,091 Lumens with 12' Arm Bracket on Existing Distribution Pole facing the street
Loc O: Install a 2" Riser

FPL contractor to install 2'' PVC with 24'' minimum cover as shown in the drawing using directional bore. FPL contractor installing handholes and staking locations of the poles. Poles on this page to be installed at around 5ft from the EOP. Stake locations of the poles by the property lines where applicable. Verify fixture is working after installation.
- FPL crew to run #6 DPX UG cable to all locations shown in the drawing.
- Customer to contact FPL PL and coordinate staking of all locations prior LED installations.
- FPL contractors to repair any restoration required. All handholes to be 17''unless noted

FPL LED Representative: Scot Thrapp

FDOT permit required

AS-BUILT CREW PRINT	ALL REQUIRED GROUND RODS HAVE BEEN DRIVEN & VERIFIED TO BE WITHIN FPL STANDARDS, VALUES ARE SHOWN AT ALL LOCATIONS.	JOB CERTIFIED COMPLETED AS SHOWN ON THIS AS-BUILT PRINT. MATERIAL CHANGES SHOWN ON ROS	AS-BUILT COPY
FOREMAN'S SIGNATURE / DATE	FOREMAN'S SIGNATURE / DATE	SUPERVISOR'S SIGNATURE / DATE	INITIALS / CERT. DAT

Easement? Yes ☐ No ☒	Survey/Stake? Yes ☐ No ☒	Work with SMO? Yes ☐ No ☒	FPL	FDOT #439881-1-52-01	
Tree Work? Yes ☐ No ☒	Designer/Stake? Yes ☐ No ☒	CT/Special Mtr? Yes ☐ No ☒		91 New Lights	
PERMIT REQ'D	City X	County Rd.	County Air	State Road	FAA
	WMD	RR Xing	DR. Dist.	Transm.	
Requested Tel. Co. Set Poles ? YES ☐ NO ☒		Tele. Attachment Per		v/o US-1, Port Orange, FL	
Requested Tel. Co. Transfer ? YES ☐ NO ☒					
Request CAVT Transfer? YES ☐ NO ☒		Telephone Co. Job No.			

POLE LINE FEET	0'	DUCT BANK FT.	0'	Designed by: Jessica Builes	Date: 03/19/21
POLE LINE FT. ON TRANSM. POLES	0'	TRENCH FT.	0'	Drawn by: JB Check by:	Dwg No. 15 OF 22
TLM/LDS MODEL No.	–	Map Posting? YES ☒ NO ☐	Posted by:	Rural Location Sec. XX TWP. XX S, RGE. XX E.	
				SCALE: N.T.S St. Lt MAP No. MAP# Pri Map No. XXXXX	
				WR XXXXXXXX	

Attachment: Exhibit A - Golf-Nova Intersection Lighting Plan (2024-R-47 : FPL Lighting Conversion Agreement and Plans)

FPL Account Number: **6659300708**

FPL Work Request Number: _____

LED LIGHTING AGREEMENT

In accordance with the following terms and conditions, City of Holly Hill (hereinafter called the Customer), requests on this 16th day of **May**, **2024**, from FLORIDA POWER & LIGHT COMPANY (hereinafter called FPL), a corporation organized and existing under the laws of the State of Florida, the following installation or modification of lighting facilities at (general boundaries) FDOT Streetlights, located in Holly Hill, Florida.

(a) Installation and/or removal of FPL-owned facilities described as follows:

Fixture Description (1)	Watts	Lumens	Color Temperature	# Installed	# Removed
Roadway	263	31,500	4K	5	

(1) Catalog of available fixtures and the assigned billing tier for each can be viewed at www.fpl.com/led

Attachment: Exhibit B - Nova Rd Streetlights-FDOT-FPL (2024-R-47 : FPL Lighting Conversion Agreement and Plans)

Pole Description	# Installed	# Removed
45' Concrete Pole Side Arm Mount	4	

(b) Installation and/or removal of FPL-owned additional lighting facilities where a cost estimate for these facilities will be determined based on the job scope, and the Additional Lighting Charges factor applied to determine the monthly rate.

(c) Modification to existing facilities other than described above or additional notes (explain fully): (4) 45' Standard Concrete Poles Side Arm Mount and (1) 50' Distrubution Pole. (5) 12' Arms. FDOT will pay the CIAC of $223,241.71 upon completion of the project under FIN 439881-1

Attachment: Exhibit B - Nova Rd Streetlights-FDOT-FPL (2024-R-47 : FPL Lighting Conversion Agreement and Plans)

That, for and in consideration of the covenants set forth herein, the parties hereto covenant and agree as follows:

FPL AGREES:

1. To install or modify the lighting facilities described and identified above (hereinafter called the Lighting System), furnish to the Customer the electric energy necessary for the operation of the Lighting System, and furnish such other services as are specified in this Agreement, all in accordance with the terms of FPL's currently effective lighting rate schedule on file at the Florida Public Service Commission (FPSC) or any successive lighting rate schedule approved by the FPSC.

THE CUSTOMER AGREES:

2. To pay a monthly fee for fixtures and poles in accordance to the Lighting tariff, and additional lighting charge in the amount of $83.18 These charges may be adjusted subject to review and approval by the FPSC.

3. To pay Contribution in Aid of Construction (CIAC) in the amount of $0.00 prior to FPL's initiating the requested installation or modification.

4. To pay the monthly maintenance and energy charges in accordance to the Lighting tariff. These charges may be adjusted subject to review and approval by the FPSC.

5. To purchase from FPL all the electric energy used for the operation of the Lighting System.

6. To be responsible for paying, when due, all bills rendered by FPL pursuant to FPL's currently effective lighting rate schedule on file at the FPSC or any successive lighting rate schedule approved by the FPSC, for facilities and service provided in accordance with this agreement.

7. To provide access, suitable construction drawings showing the location of existing and proposed structures, and appropriate plats necessary for planning the design and completing the construction of FPL facilities associated with the Lighting System.

8. To have sole responsibility to ensure lighting, poles, luminaires and fixtures are in compliance with any applicable municipal or county ordinances governing the size, wattage, lumens or general aesthetics.

9. For new FPL-owned lighting systems, to provide final grading to specifications, perform any clearing if needed, compacting, removal of stumps or other obstructions that conflict with construction, identification of all non-FPL underground facilities within or near pole or trench locations, drainage of rights-of-way or good and sufficient easements required by FPL to accommodate the lighting facilities.

10. For FPL-owned fixtures on customer-owned systems:
    a. To perform repairs or correct code violations on their existing lighting infrastructure. Notification to FPL is required once site is ready.
    b. To repair or replace their electrical infrastructure in order to provide service to the Lighting System for daily operations or in a catastrophic event.
    c. In the event the light is not operating correctly, Customer agrees to check voltage at the service point feeding the lighting circuit prior to submitting the request for FPL to repair the fixture.

IT IS MUTUALLY AGREED THAT:

11. Modifications to the facilities provided by FPL under this agreement, other than for maintenance, may only be made through the execution of an additional lighting agreement delineating the modifications to be accomplished. Modification of FPL lighting facilities is defined as the following:

    a. the addition of lighting facilities:
    b. the removal of lighting facilities; and
    c. the removal of lighting facilities and the replacement of such facilities with new facilities and/or additional facilities.

    Modifications will be subject to the costs identified in FPL's currently effective lighting rate schedule on file at the FPSC, or any successive schedule approved by the FPSC.

12. FPL will, at the request of the Customer, relocate the lighting facilities covered by this agreement, if provided sufficient rights-of-way or easements to do so and locations requested are consistent with clear zone right-of-way setback requirements. The Customer shall be responsible for the payment of all costs associated with any such Customer- requested relocation of FPL lighting facilities. Payments shall be made by the Customer in advance of any relocation.
    Lighting facilities will only be installed in locations that meet all applicable clear zone right-of-way setback requirements.

13. FPL may, at any time, substitute for any fixture installed hereunder another equivalent fixture which shall be of similar illuminating capacity and efficiency.

Attachment: Exhibit B - Nova Rd Streetlights-FDOT-FPL (2024-R-47 : FPL Lighting Conversion Agreement and Plans)

14. This Agreement shall be for a term of ten (10) years from the date of initiation of service, and, except as provided below, shall extend thereafter for further successive periods of five (5) years from the expiration of the initial ten (10) year term or from the expiration of any extension thereof. The date of initiation of service shall be defined as the date the first lights are energized and billing begins, not the date of this Agreement. This Agreement shall be extended automatically beyond the initial ten (10) year term or any extension thereof, unless either party shall have given written notice to the other of its desire to terminate this Agreement. The written notice shall be by certified mail and shall be given not less than ninety (90) days before the expiration of the initial ten (10) year term, or any extension thereof.

15. In the event lighting facilities covered by this agreement are removed, either at the request of the Customer or through termination orbreach of this Agreement, the Customer shall be responsible for paying to FPL an amount equal to the original installed cost of thefacilities provided by FPL under this agreement less any salvage value and any depreciation (based on current depreciation ratesapproved by the FPSC) plus removal cost.

16. Should the Customer fail to pay any bills due and rendered pursuant to this agreement or otherwise fail to perform the obligations contained in this Agreement, said obligations being material and going to the essence of this Agreement, FPL may cease to supplyelectric energy or service until the Customer has paid the bills due and rendered or has fully cured such other breach of this Agreement. Any failure of FPL to exercise its rights hereunder shall not be a waiver of its rights. It is understood, however, that such discontinuance of the supplying of electric energy or service shall not constitute a breach of this Agreement by FPL, nor shall it relieve the Customer ofthe obligation to perform any of the terms and conditions of this Agreement.

17. The obligation to furnish or purchase service shall be excused at any time that either party is prevented from complying with this Agreement by strikes, lockouts, fires, riots, acts of God, the public enemy, or by cause or causes not under the control of the party thus prevented from compliance, and FPL shall not have the obligation to furnish service if it is prevented from complying with this Agreementby reason of any partial, temporary or entire shut-down of service which, in the sole opinion of FPL, is reasonably necessary for the purpose of repairing or making more efficient all or any part of its generating or other electrical equipment.

18. This **Agreement supersedes all previous Agreements** or representations, either written, oral, or otherwise between the Customer andFPL, with respect to the facilities referenced herein and constitutes the entire Agreement between the parties. This Agreement does not create any rights or provide any remedies to third parties or create any additional duty, obligation or undertakings by FPL to third parties.

19. In the event of the sale of the real property upon which the facilities are installed, upon the written consent of FPL, this Agreement may be assigned by the Customer to the Purchaser. No assignment shall relieve the Customer from its obligations hereunder until such obligations have been assumed by the assignee and agreed to by FPL.

20. This Agreement shall inure to the benefit of and be binding upon the successors and assigns of the Customer and FPL.

21. The lighting facilities shall remain the property of FPL in perpetuity.

22. This Agreement is subject to FPL's Electric Tariff, including, but not limited to, the General Rules and Regulations for Electric Service andthe Rules of the FPSC, as they are now written, or as they may be hereafter revised, amended or supplemented. In the event of any conflict between the terms of this Agreement and the provisions of the FPL Electric Tariff or the FPSC Rules, the provisions of the Electric Tariff and FPSC Rules shall control, as they are now written, or as they may be hereafter revised, amended or supplemented.

IN WITNESS WHEREOF, the parties hereby caused this Agreement to be executed in triplicate by their duly authorized representatives to be effective as of the day and year first written above.

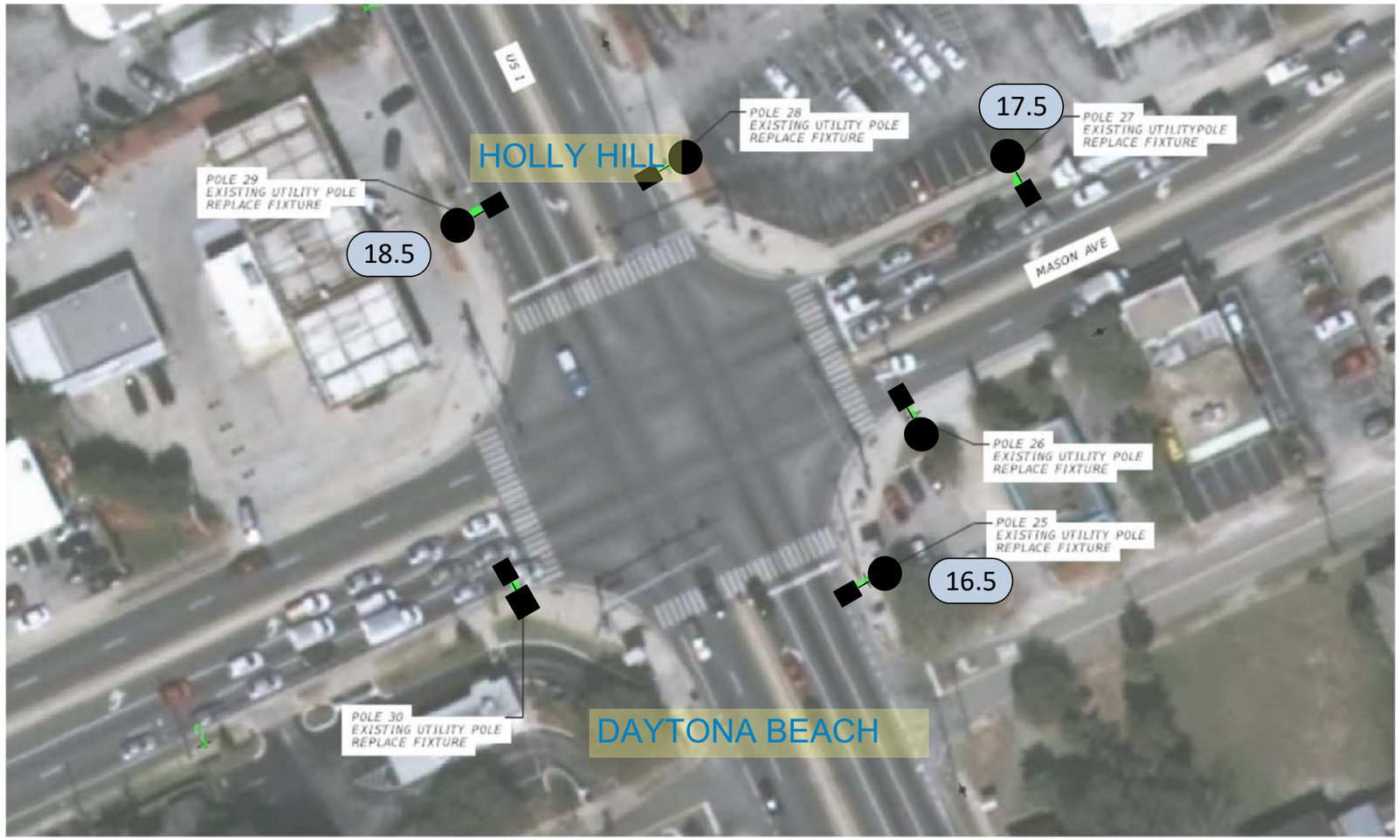
Charges and Terms Accepted:

City of Holly Hill	**FLORIDA POWER & LIGHT COMPANY**
Customer (Print or type name of Organization)	
By: _____	**By:** Scot Thrapp
Signature (Authorized Representative)	**(Signature)**
_____	**Scot Thrapp**
(Print or type name)	**(Print or type name)**
Title: _____	**Title: FPL LT-1 Representative**

Attachment: Exhibit B - Nova Rd Streetlights-FDOT-FPL (2024-R-47 : FPL Lighting Conversion Agreement and Plans)

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☐ INACCESSIBLE ☒ 13 kV ☐ FUTURE 23 kV ☐ 23 kV ☐ SALT SPRAY ☐



N

Holly Hill

FDOT permit required

Construction Notes: (FPL Contractor installing conduit)

Loc. 16.5 to 18.5: Replace existing fixture with 1 AEL 259W ATBL 4K 28,091 Lumens with 8' Arm Bracket

FPL contractor to install 2'' PVC with 24'' minimum cover as shown in the drawing using directional bore. FPL contractor installing handholes and staking locations of the poles. Verify fixture is working after installation.
- FPL crew to run #6 DPX UG cable to all locations shown in the drawing.
- FPL contractors to repair any restoration required.
- All handholes to be 17''unless noted

FPL LED Representative: Scot Thrapp

AS-BUILT CREW PRINT	ALL REQUIRED GROUND RODS HAVE BEEN DRIVEN & VERIFIED TO BE WITHIN FPL STANDARDS, VALUES ARE SHOWN AT ALL LOCATIONS.	JOB CERTIFIED COMPLETED AS SHOWN ON THIS AS-BUILT PRINT. MATERIAL CHANGES SHOW N ON RDS	AS-BUILT COPY
FOREMAN'S SIGNATURE / DATE	FOREMAN'S SIGNATURE / DATE	SUPERVISOR'S SIGNATURE / DATE	INITIALS / CERT. DAT

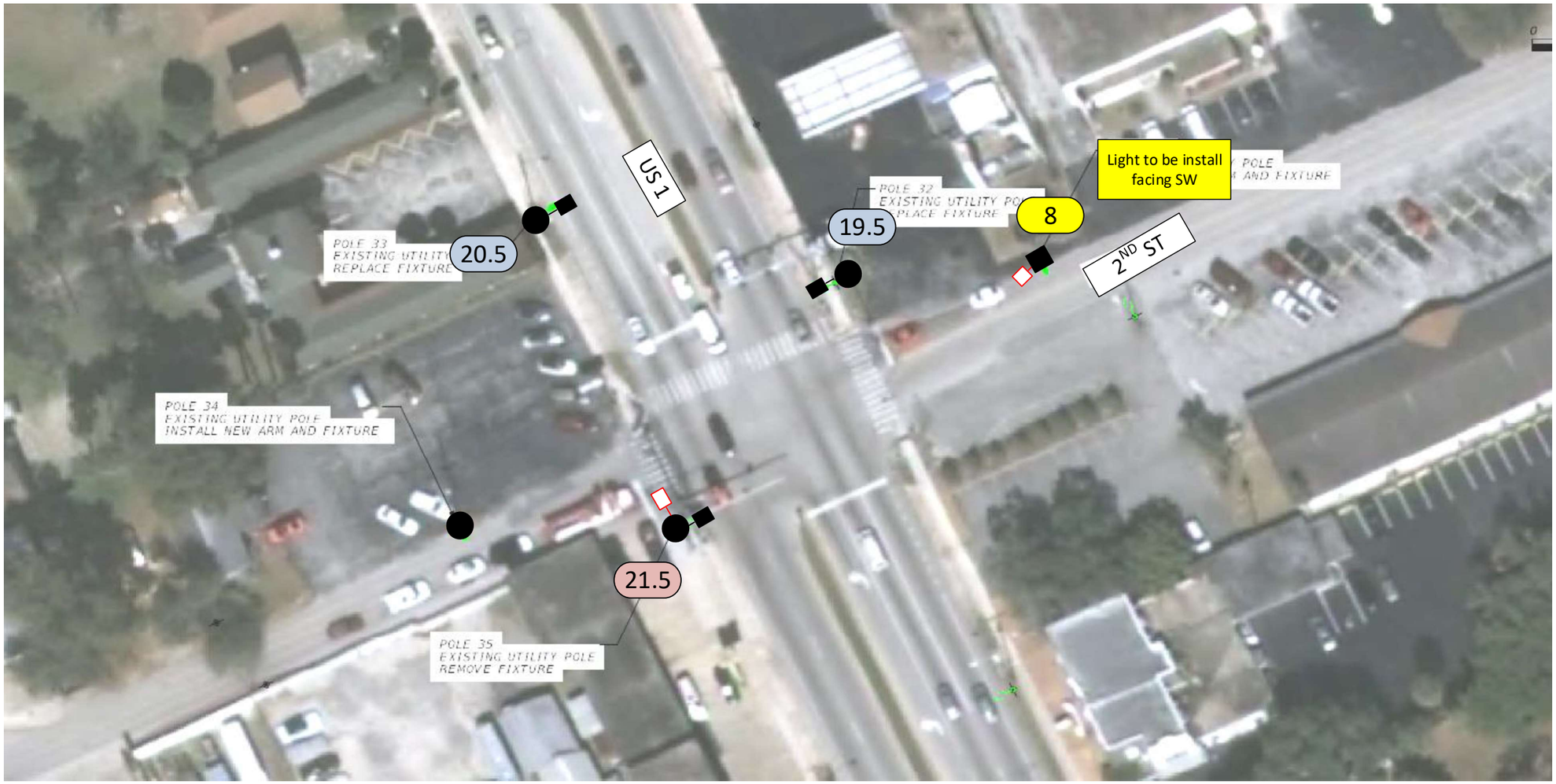
Easement? Yes ☐ No ☒	Survey/Stake? Yes ☐ No ☒	Work with SMO? Yes ☐ No ☒	FPL	FDOT #439881-4-52-01	
Tree Work? Yes ☐ No ☒	Designer/Stake? Yes ☐ No ☒	CT/Special Mtr? Yes ☐ No ☒		81 New Lights	
PERMIT REQ'D: City X	County Rd.	County Air	State Road	FAA	v/o US-1,Daytona Beach, FL 32114
WMD	RR Xing	DR. Dist.	Transm.		

Requested Tel. Co. Set Poles ? YES ☐ NO ☒	Tele. Attachment Per	Designed by: Jessica Builes	Date: 05/19/21
Requested Tel. Co. Transfer ? YES ☐ NO ☒	Telephone Co. Job No.	Drawn by: JB Check by:	Dwg No. 6 OF 23
Request CAVT Transfer? YES ☐ NO ☒		Rural Location Sec. XX TWP. XX S, RGE. XX E.	
POLE LINE FEET 0'	DUCT BANK FT. 0'	SCALE: N.T.S St. Lt MAP No. MAP#	Pri Map No. XXXXX
POLE LINE FT. ON TRANSM. POLES 0'	TRENCH FT. 0'	WR XXXXXXXX	
TLM/LDS MODEL No. -	Map Posting? YES ☒ NO ☐ Posted by:		

Attachment: Exhibit C - Ridgewood Ave Lighting Plan - 2nd St to Calle Grande Lighting Project (2024-R-47 : FPL Lighting Conversion

HOLLY HILL

☐ INACCESSIBLE ☒ 13 kV ☐ FUTURE 23 kV ☐ 23 kV ☐ SALT SPRAY ☐



N

Construction Notes: (FPL Contractor installing conduit)

Loc 8: Install 1 AEL 259W ATBL 4K 28,091 Lumens with 12' Arm Bracket on Existing Distribution Pole facing SW
Loc. 19.5 and 20.5: Replace existing fixture with 1 AEL 259W ATBL 4K 28,091 Lumens with 12' Arm Bracket
Loc. 21.5: Remove existing fixture and install 1 AEL 259W ATBL 4K 28,091 Lumens with 12' Arm Bracket facing NW

FPL contractor to install 2'' PVC with 24'' minimum cover as shown in the drawing using directional bore. FPL contractor installing handholes and staking locations of the poles. Verify fixture is working after installation.
- FPL crew to run #6 DPX UG cable to all locations shown in the drawing.
- FPL contractors to repair any restoration required.
- All handholes to be 17''unless noted

FPL LED Representative: Scot Thrapp

Holly Hill

FDOT permit required

AS-BUILT CREW PRINT	ALL REQUIRED GROUND RODS HAVE BEEN DRIVEN & VERIFIED TO BE WITHIN FPL STANDARDS, VALUES ARE SHOWN AT ALL LOCATIONS.	JOB CERTIFIED COMPLETED AS SHOWN ON THIS AS-BUILT PRINT. MATERIAL CHANGES SHOWN ON RDS	AS-BUILT COPY
FOREMAN'S SIGNATURE / DATE	FOREMAN'S SIGNATURE / DATE	SUPERVISOR'S SIGNATURE / DATE	INITIALS / CERT. DAT

Easement? Yes ☐ No ☒	Survey/Stake? Yes ☐ No ☒	Work with SMO? Yes ☐ No ☒	FPL
Tree Work? Yes ☐ No ☒	Designer/Stake? Yes ☐ No ☒	CT/Special Mtr? Yes ☐ No ☒	FDOT #439881-4-52-01 81 New Lights v/o US-1,Daytona Beach, FL 32114

PERMIT REQ'D					
City X	County Rd.	County Air	State Road	FAA	
WMD	RR Xing	DR. Dist.	Transm.		

Requested Tel. Co. Set Poles ? YES ☐ NO ☒
Requested Tel. Co. Transfer ? YES ☐ NO ☒
Request CAVT Transfer? YES ☐ NO ☒
Tele. Attachment Per
Telephone Co. Job No.

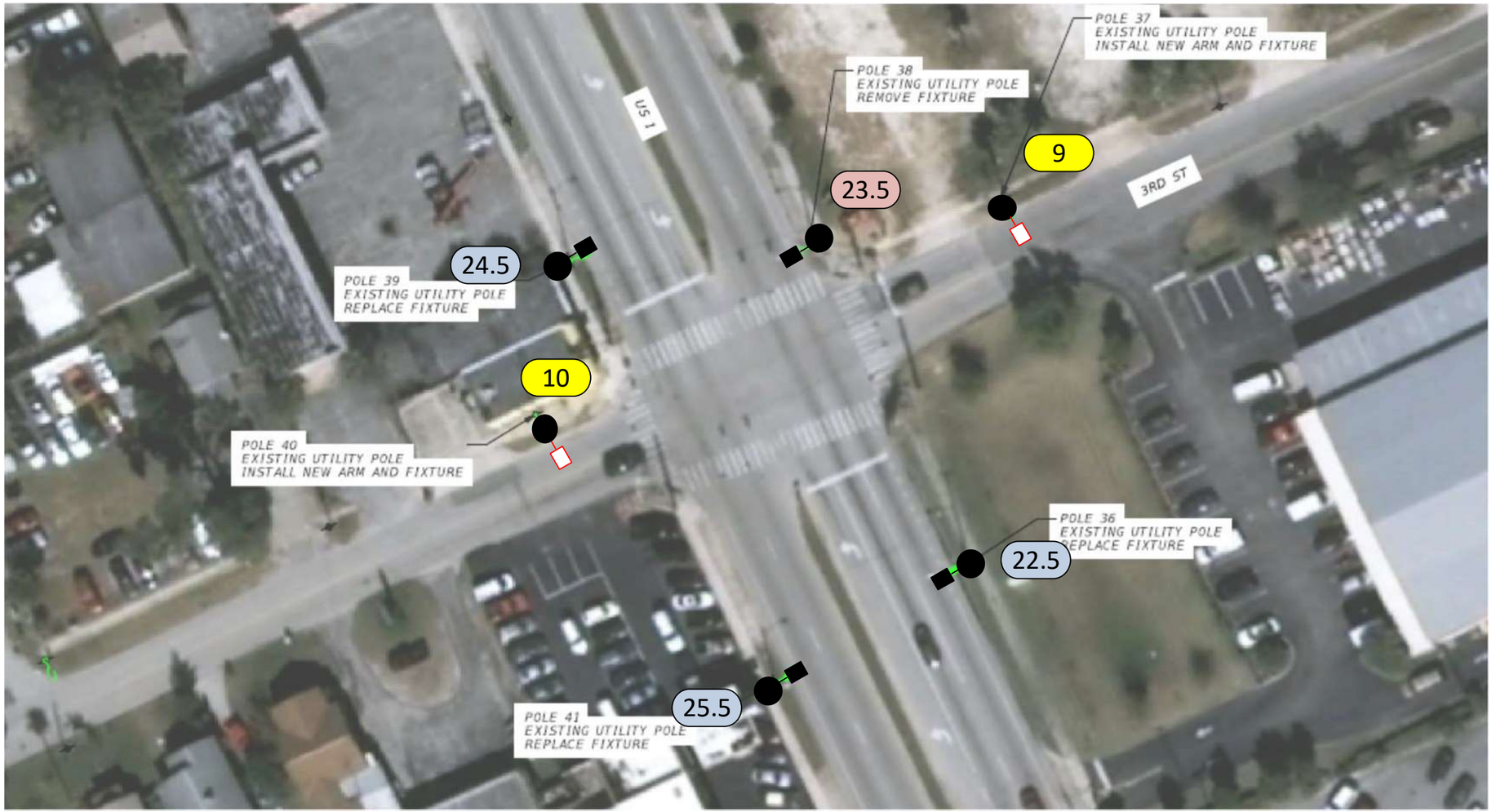
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POLE LINE FT. ON TRANSM. POLES	0'	TRENCH FT.	0'
TLM/LDS MODEL No.	-	Map Posting? YES ☒ NO ☐	Posted by:

Designed by:	Jessica Builes	Date:	05/19/21
Drawn by: JB	Check by:	Dwg No.	7 OF 23
Rural Location Sec.	XX TWP. XX	S, RGE. XX	E.
SCALE: N.T.S	St. Lt MAP No. MAP#	Pri Map No.	XXXXX
WR XXXXXXXX			

Attachment: Exhibit C - Ridgewood Ave Lighting Plan - 2nd St to Calle Grande Lighting Project (2024-R-47 : FPL Lighting Conversion

HOLLY HILL

☐ INACCESSIBLE ☒ 13 kV ☐ FUTURE 23 kV ☐ 23 kV ☐ SALT SPRAY ☐



N

Construction Notes: (FPL Contractor installing conduit)

FDOT permit required

Loc 9 and 10: Install 1 AEL 259W ATBL 4K 28,091 Lumens with 8' Arm Bracket on Existing Distribution Pole facing the street
Loc. 22.5, 24.5 and 25.5: Replace existing fixture with 1 AEL 259W ATBL 4K 28,091 Lumens with 8' Arm Bracket
Loc. 23.5: Remove existing fixture

FPL contractor to install 2'' PVC with 24'' minimum cover as shown in the drawing using directional bore. FPL contractor installing handholes and staking locations of the poles. Verify fixture is working after installation.
- FPL crew to run #6 DPX UG cable to all locations shown in the drawing.
- FPL contractors to repair any restoration required.
- All handholes to be 17''unless noted

FPL LED Representative: Scot Thrapp

Holly Hill

AS-BUILT CREW PRINT	ALL REQUIRED GROUND RODS HAVE BEEN DRIVEN & VERIFIED TO BE WITHIN FPL STANDARDS, VALUES ARE SHOWN AT ALL LOCATIONS.	JOB CERTIFIED COMPLETED AS SHOWN ON THIS AS-BUILT PRINT. MATERIAL CHANGES SHOWN ON ROS	AS-BUILT COPY
FOREMAN'S SIGNATURE / DATE	FOREMAN'S SIGNATURE / DATE	SUPERVISOR'S SIGNATURE / DATE	INITIALS / CERT. DAT

Easement? Yes ☐ No ☒	Survey/Stake? Yes ☐ No ☒	Work with SMO? Yes ☐ No ☒	FPL		
Tree Work? Yes ☐ No ☒	Designer/Stake? Yes ☐ No ☒	CT/Special Mtr? Yes ☐ No ☒			
PERMIT REQ'D: City X	County Rd.	County Air	State Road	FAA	
WMD	RR Xing	DR. Dist.	Transm.		

FDOT #439881-4-52-01
81 New Lights
v/o US-1,Daytona Beach, FL 32114

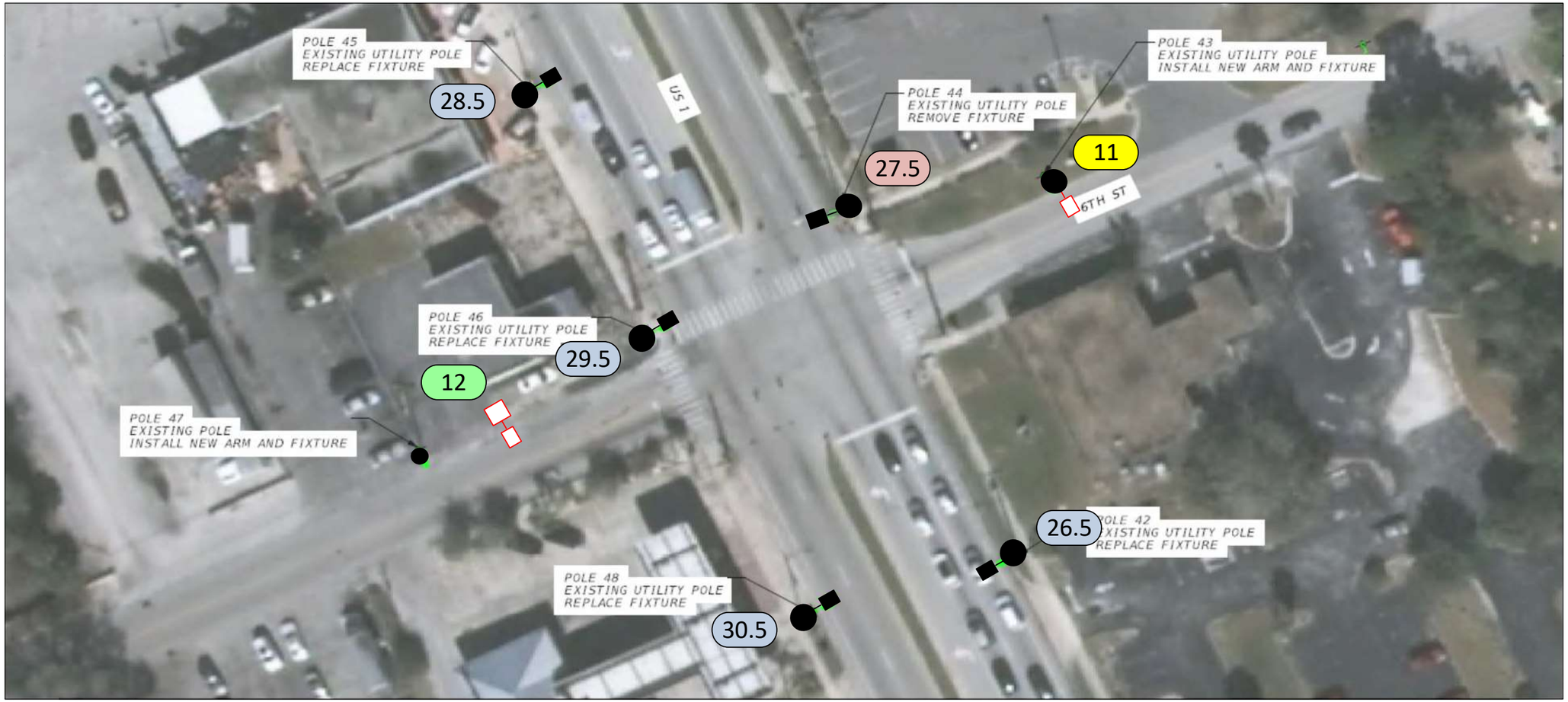
Requested Tel. Co. Set Poles ? YES ☐ NO ☒	Tele. Attachment Per	Designed by: Jessica Builes	Date: 05/19/21
Requested Tel. Co. Transfer ? YES ☐ NO ☒	Telephone Co. Job No.	Drawn by: JB Check by:	Dwg No. 8 OF 23
Request CAVT Transfer? YES ☐ NO ☒		Rural Location Sec. XX TWP. XX S, RGE. XX E.	
POLE LINE FEET 0'	DUCT BANK FT. 0'	SCALE: N.T.S	St. Lt MAP No. MAP# Pri Map No. XXXXX
POLE LINE FT. ON TRANSM. POLES 0'	TRENCH FT. 0'		
TLM/LDS MODEL No. -	Map Posting? YES ☒ NO ☐ Posted by:	WR XXXXXXXX	

Attachment: Exhibit C - Ridgewood Ave Lighting Plan - 2nd St to Calle Grande Lighting Project (2024-R-47 : FPL Lighting Conversion

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HOLLY HILL

☐ INACCESSIBLE ☒ 13 kV ☐ FUTURE 23 kV ☐ 23 kV ☐ SALT SPRAY ☐





Construction Notes: (FPL Contractor installing conduit)

Loc. 11: Install 1 AEL 259W ATBL 4K 28,091 Lumens with 8' Arm Bracket on Existing Distribution Pole facing the street
Loc. 12: Install a 55' Concrete Distribution Pole and Install 1 AEL 259W ATBL 4K 28,091 Lumens with 12' Arm Bracket
Loc. 26.5, 28.5, 29.5 and 30.5: Replace existing fixture with 1 AEL 259W ATBL 4K 28,091 Lumens with 8' Arm Bracket
Loc. 27.5: Remove existing HPS fixture

FPL contractor to install 2'' PVC with 24'' minimum cover as shown in the drawing using directional bore. FPL contractor installing handholes and staking locations of the poles. Pole 12 on this page to be installed in line with existing distribution poles. Stake locations of the poles by the property lines where applicable. Verify fixture is working after installation.
- FPL crew to run #6 DPX UG cable to all locations shown in the drawing.
- FPL contractors to repair any restoration required.
- All handholes to be 17''unless noted

FPL LED Representative: Scot Thrapp

Holly Hill

FDOT permit required

AS-BUILT CREW PRINT	ALL REQUIRED GROUND RODS HAVE BEEN DRIVEN & VERIFIED TO BE WITHIN FPL STANDARDS, VALUES ARE SHOWN AT ALL LOCATIONS.	JOB CERTIFIED COMPLETED AS SHOWN ON THIS AS-BUILT PRINT. MATERIAL CHANGES SHOWN ON RDS	AS-BUILT COPY
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Easement? Yes ☐ No ☒	Survey/Stake? Yes ☐ No ☒	Work with SMO? Yes ☐ No ☒	FPL	FDOT #439881-4-52-01	
Tree Work? Yes ☐ No ☒	Designer/Stake? Yes ☐ No ☒	CT/Special Mtr? Yes ☐ No ☒		81 New Lights	
PERMIT REQ'D: City X	County Rd.	County Air	State Road	FAA	v/o US-1,Daytona Beach, FL 32114
WMD	RR Xing	DR. Dist.	Transm.		
Requested Tel. Co. Set Poles ? YES ☐ NO ☒	Tele. Attachment Per				
Requested Tel. Co. Transfer ? YES ☐ NO ☒					
Request CAVT Transfer? YES ☐ NO ☒	Telephone Co. Job No.				
POLE LINE FEET 0'	DUCT BANK FT. 0'			Designed by: Jessica Builes	Date: 05/19/21
POLE LINE FT. ON TRANSM. POLES 0'	TRENCH FT. 0'			Drawn by: JB Check by:	Dwg No. 9 OF 23
TLM/LDS MODEL No. –	Map Posting? YES ☒ NO ☐ Posted by:			Rural Location Sec. XX TWP. XX S, RGE. XX E.	
				SCALE: N.T.S St. Lt MAP No. MAP# Pri Map No. XXXXX	
				WR XXXXXXXX	

Attachment: Exhibit C - Ridgewood Ave Lighting Plan - 2nd St to Calle Grande Lighting Project (2024-R-47 : FPL Lighting Conversion

HOLLY HILL

☐ INACCESSIBLE ☒ 13 kV ☐ FUTURE 23 kV ☐ 23 kV ☐ SALT SPRAY ☐



N

FDOT permit required

Construction Notes: (FPL Contractor installing conduit)

Loc. 13: Install a 40' Concrete Distribution Pole and Install 1 AEL 259W ATBL 4K 28,091 Lumens with 12' Arm Bracket
Loc. 14: Install 1 AEL 259W ATBL 4K 28,091 Lumens with 12' Arm Bracket on Existing Distribution Pole facing the street
Loc. 31.5: Replace existing fixture with 1 AEL 259W ATBL 4K 28,091 Lumens with 12' Arm Bracket

FPL contractor to install 2'' PVC with 24'' minimum cover as shown in the drawing using directional bore. FPL contractor installing handholes and staking locations of the poles. Pole 13 on this page to be installed in line with existing distribution poles. Stake locations of the poles by the property lines where applicable. Verify fixture is working after installation.
- FPL crew to run #6 DPX UG cable to all locations shown in the drawing.
- FPL contractors to repair any restoration required.
- All handholes to be 17''unless noted

FPL LED Representative: Scot Thrapp

Holly Hill

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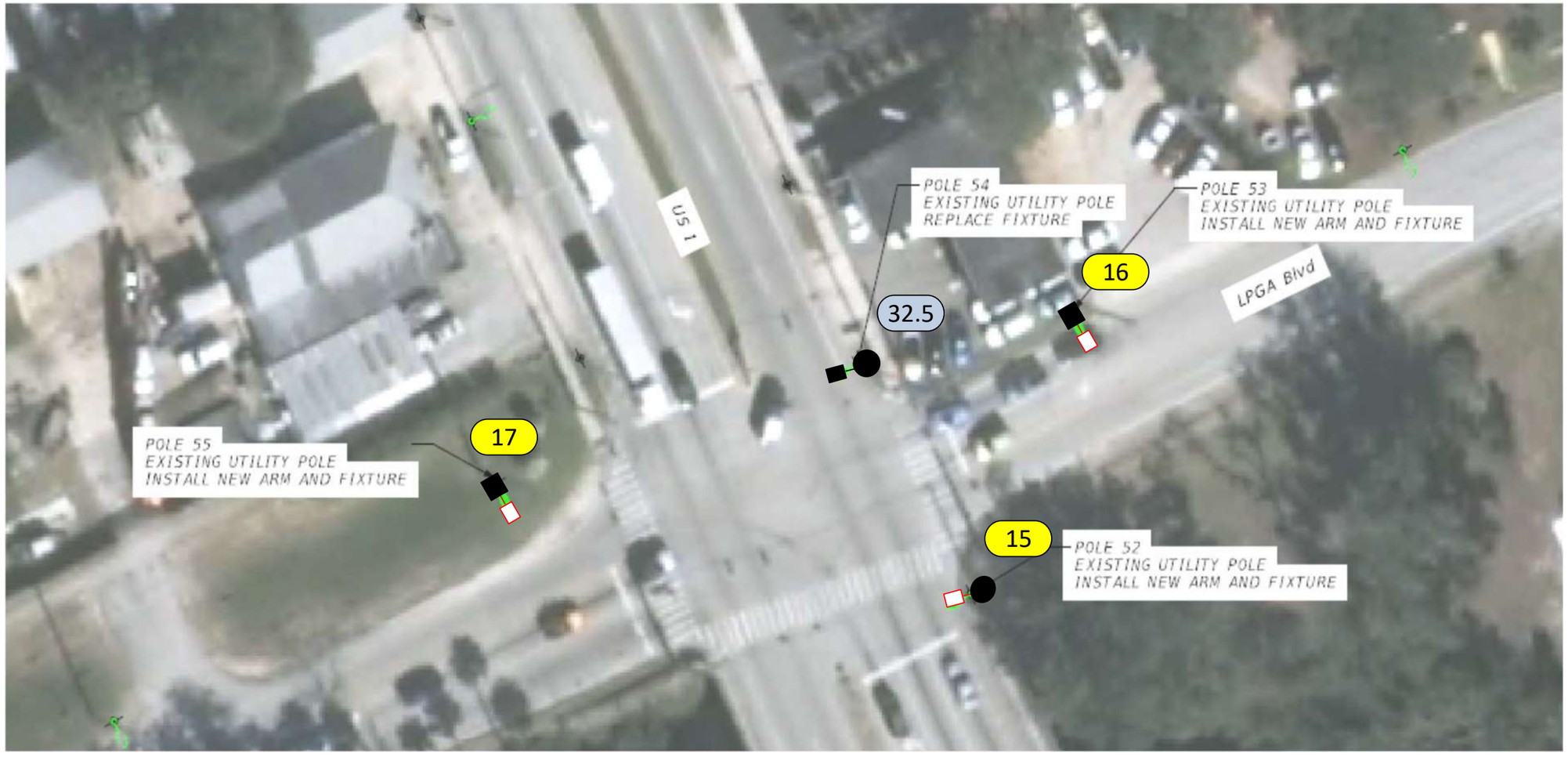
Easement? Yes ☐ No ☒	Survey/Stake? Yes ☐ No ☒	Work with SMO? Yes ☐ No ☒	FPL	FDOT #439881-4-52-01	
Tree Work? Yes ☐ No ☒	Designer/Stake? Yes ☐ No ☒	CT/Special Mtr? Yes ☐ No ☒		81 New Lights	
PERMIT REQ'D: City X	County Rd.	County Air	State Road	FAA	v/o US-1,Daytona Beach, FL 32114
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Requested Tel. Co. Transfer ? YES ☐ NO ☒		Drawn by: JB Check by:	Dwg No. 10 OF 23
Request CAVT Transfer? YES ☐ NO ☒	Telephone Co. Job No.	Rural Location Sec. XX TWP. XX S, RGE. XX E.	
POLE LINE FEET 0'	DUCT BANK FT. 0'	SCALE: N.T.S	St. Lt MAP No. MAP# Pri Map No. XXXXX
POLE LINE FT. ON TRANSM. POLES 0'	TRENCH FT. 0'	WR XXXXXXXX	
TLM/LDS MODEL No. -	Map Posting? YES ☒ NO ☐ Posted by:		

Attachment: Exhibit C - Ridgewood Ave Lighting Plan - 2nd St to Calle Grande Lighting Project (2024-R-47 : FPL Lighting Conversion

HOLLY HILL

☐ INACCESSIBLE ☒ 13 kV ☐ FUTURE 23 kV ☐ 23 kV ☐ SALT SPRAY ☐



N

FDOT permit required

Construction Notes: (FPL Contractor installing conduit)

Loc. 15 to 17 : Install 1 AEL 259W ATBL 4K 28,091 Lumens with 8' Arm Bracket on Existing Distribution Pole facing the street
Loc. 32.5: Replace existing fixture with 1 AEL 259W ATBL 4K 28,091 Lumens with 8' Arm Bracket

FPL contractor to install 2'' PVC with 24'' minimum cover as shown in the drawing using directional bore. FPL contractor installing handholes and staking locations of the poles. Stake locations of the poles by the property lines where applicable. Verify fixture is working after installation.
- FPL crew to run #6 DPX UG cable to all locations shown in the drawing.
- FPL contractors to repair any restoration required.
- All handholes to be 17''unless noted

FPL LED Representative: Scot Thrapp

Holly Hill

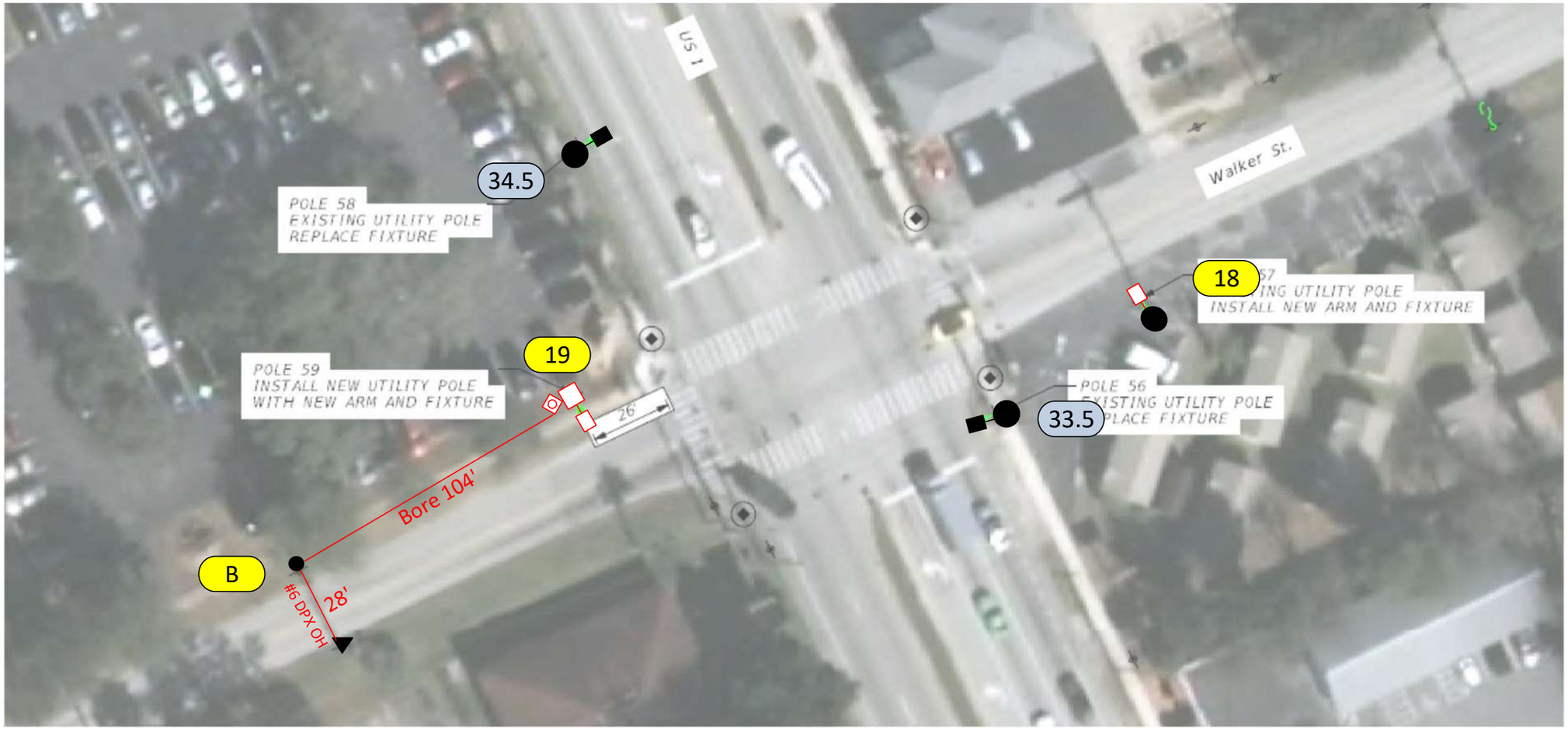
AS-BUILT CREW PRINT	ALL REQUIRED GROUND RODS HAVE BEEN DRIVEN & VERIFIED TO BE WITHIN FPL STANDARDS, VALUES ARE SHOWN AT ALL LOCATIONS.	JOB CERTIFIED COMPLETED AS SHOWN ON THIS AS-BUILT PRINT. MATERIAL CHANGES SHOWN ON RDS	AS-BUILT COPY
FOREMAN'S SIGNATURE / DATE	FOREMAN'S SIGNATURE / DATE	SUPERVISOR'S SIGNATURE / DATE	INITIALS / CERT. DAT

Easement? Yes ☐ No ☒	Survey/Stake? Yes ☐ No ☒	Work with SMO? Yes ☐ No ☒	FPL	FDOT #439881-4-52-01	
Tree Work? Yes ☐ No ☒	Designer/Stake? Yes ☐ No ☒	CT/Special Mtr? Yes ☐ No ☒		81 New Lights	
PERMIT REQ'D: City X	County Rd.	County Air	State Road	FAA	v/o US-1,Daytona Beach, FL 32114
WMD	RR Xing	DR. Dist.	Transm.		
Requested Tel. Co. Set Poles ? YES ☐ NO ☒	Tele. Attachment Per				
Requested Tel. Co. Transfer ? YES ☐ NO ☒					
Request CAVT Transfer? YES ☐ NO ☒	Telephone Co. Job No.				
POLE LINE FEET 0'	DUCT BANK FT. 0'			Designed by: Jessica Builes	Date: 05/19/21
POLE LINE FT. ON TRANSM. POLES 0'	TRENCH FT. 0'			Drawn by: JB Check by:	Dwg No. 11 OF 23
TLM/LDS MODEL No. –	Map Posting? YES ☒ NO ☐ Posted by:			Rural Location Sec. XX TWP. XX S, RGE. XX E.	
				SCALE: N.T.S St. Lt MAP No. MAP# Pri Map No. XXXXX	
				WR XXXXXXXX	

Attachment: Exhibit C - Ridgewood Ave Lighting Plan - 2nd St to Calle Grande Lighting Project (2024-R-47 : FPL Lighting Conversion

HOLLY HILL

☐ INACCESSIBLE ☒ 13 kV ☐ FUTURE 23 kV ☐ 23 kV ☐ SALT SPRAY ☐



N

Footage: 104ft

FDOT permit required

Construction Notes: (FPL Contractor installing conduit)

Loc 18: Install 1 AEL 259W ATBL 4K 28,091 Lumens with 8' Arm Bracket on Existing Distribution Pole facing the street
Loc 19 : Install 1 AEL 259W ATBL 4K 28,091 Lumens with 8' Arm Bracket on NEW 40' Concrete Pole (Mounting Height 30')
Loc. 33.5 and 34.5: Replace existing fixture with 1 AEL 259W ATBL 4K 28,091 Lumens with 8' Arm Bracket
Loc B: Install a 2" Riser

FPL contractor to install 2'' PVC with 24'' minimum cover as shown in the drawing using directional bore. FPL contractor installing handholes and staking locations of the poles. Pole 19 on this page to be installed in line with existing distribution poles. Stake locations of the poles by the property lines where applicable. Verify fixture is working after installation.
- FPL crew to run #6 DPX UG cable to all locations shown in the drawing.
- FPL contractors to repair any restoration required.
- All handholes to be 17''unless noted

FPL LED Representative: Scot Thrapp

Holly Hill

AS-BUILT CREW PRINT	ALL REQUIRED GROUND RODS HAVE BEEN DRIVEN & VERIFIED TO BE WITHIN FPL STANDARDS, VALUES ARE SHOWN AT ALL LOCATIONS.	JOB CERTIFIED COMPLETED AS SHOWN ON THIS AS-BUILT PRINT. MATERIAL CHANGES SHOWN ON RDS	AS-BUILT COPY
FOREMAN'S SIGNATURE / DATE	FOREMAN'S SIGNATURE / DATE	SUPERVISOR'S SIGNATURE / DATE	INITIALS / CERT. DAT

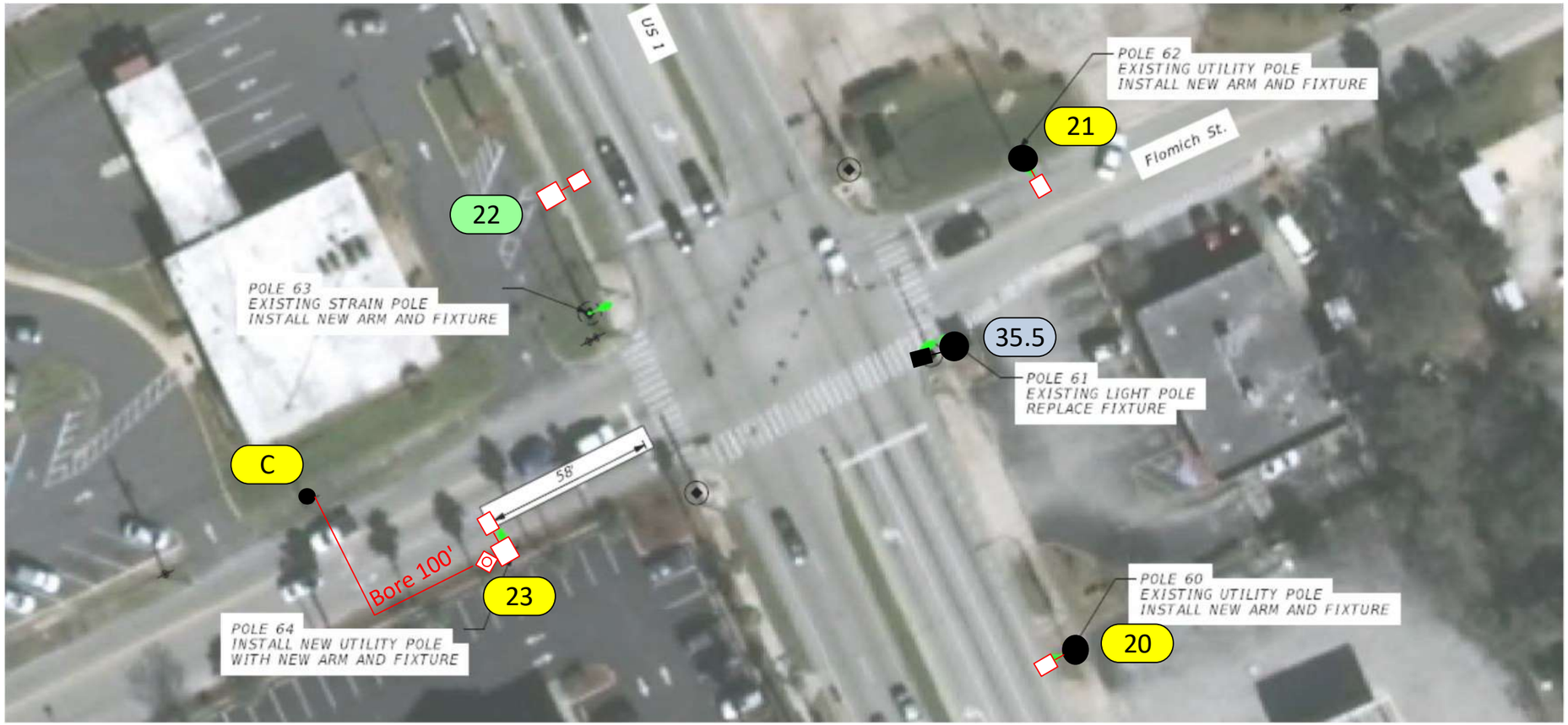
Easement? Yes ☐ No ☒	Survey/Stake? Yes ☐ No ☒	Work with SMO? Yes ☐ No ☒	FPL	FDOT #439881-4-52-01	
Tree Work? Yes ☐ No ☒	Designer/Stake? Yes ☐ No ☒	CT/Special Mtr? Yes ☐ No ☒		81 New Lights	
PERMIT REQ'D	City X	County Rd.	County Air	State Road	FAA
	WMD	RR Xing	DR. Dist.	Transm.	
Requested Tel. Co. Set Poles ? YES ☐ NO ☒		Tele. Attachment Per		v/o US-1,Daytona Beach, FL 32114	
Requested Tel. Co. Transfer ? YES ☐ NO ☒		Telephone Co. Job No.			
Request CAVT Transfer? YES ☐ NO ☒					

POLE LINE FEET	0'	DUCT BANK FT.	0'	Designed by: Jessica Builes	Date: 05/19/21
POLE LINE FT. ON TRANSM. POLES	0'	TRENCH FT.	0'	Drawn by: JB Check by:	Dwg No. 12 OF 23
TLM/LDS MODEL No. –	Map Posting? YES ☒ NO ☐	Posted by:		Rural Location Sec. XX TWP. XX S, RGE. XX E.	
				SCALE: N.T.S St. Lt MAP No. MAP#	Pri Map No. XXXXX
				WR XXXXXXXX	

Attachment: Exhibit C - Ridgewood Ave Lighting Plan - 2nd St to Calle Grande Lighting Project (2024-R-47 : FPL Lighting Conversion

HOLLY HILL

☐ INACCESSIBLE ☒ 13 kV ☐ FUTURE 23 kV ☐ 23 kV ☐ SALT SPRAY ☐





Construction Notes: (FPL Contractor installing conduit)

Loc. 20 and 21: Install 1 AEL 259W ATBL 4K 28,091 Lumens with 8' Arm Bracket on Existing Distribution Pole facing the street
Loc. 22: Install a 50' Concrete Distribution Pole and Install 1 AEL 259W ATBL 4K 28,091 Lumens with 12' Arm Bracket
Loc. 23: Install 1 AEL 259W ATBL 4K 28,091 Lumens with 8' Arm Bracket on NEW 40' Concrete Pole (Mounting Height 30')
Loc. 35.5: Replace existing fixture with 1 AEL 259W ATBL 4K 28,091 Lumens with 8' Arm Bracket
Loc. C: Install a 2" Riser

FPL contractor to install 2'' PVC with 24'' minimum cover as shown in the drawing using directional bore. FPL contractor installing handholes and staking locations of the poles. Poles on this page to be installed in line with existing distribution poles. . Stake locations of the poles by the property lines where applicable. Verify fixture is working after installation.
- FPL crew to run #6 DPX UG cable to all locations shown in the drawing.
- FPL contractors to repair any restoration required.
- All handholes to be 17''unless noted

FPL LED Representative: Scot Thrapp

Footage: 100ft

FDOT permit required

AS-BUILT CREW PRINT	ALL REQUIRED GROUND RODS HAVE BEEN DRIVEN & VERIFIED TO BE WITHIN FPL STANDARDS, VALUES ARE SHOWN AT ALL LOCATIONS.	JOB CERTIFIED COMPLETED AS SHOWN ON THIS AS-BUILT PRINT. MATERIAL CHANGES SHOWN ON RDS	AS-BUILT COPY
FOREMAN'S SIGNATURE / DATE	FOREMAN'S SIGNATURE / DATE	SUPERVISOR'S SIGNATURE / DATE	INITIALS / CERT. DAT

Easement? Yes ☐ No ☒	Survey/Stake? Yes ☐ No ☒	Work with SMO? Yes ☐ No ☒	FPL
Tree Work? Yes ☐ No ☒	Designer/Stake? Yes ☐ No ☒	CT/Special Mtr? Yes ☐ No ☒	

PERMIT REQ'D					
	City X	County Rd.	County Air	State Road	FAA
	WMD	RR Xing	DR. Dist.	Transm.	

Requested Tel. Co. Set Poles ? YES ☐ NO ☒
Requested Tel. Co. Transfer ? YES ☐ NO ☒
Request CAVT Transfer? YES ☐ NO ☒
Tele. Attachment Per
Telephone Co. Job No.

POLE LINE FEET	0'	DUCT BANK FT.	0'
POLE LINE FT. ON TRANSM. POLES	0'	TRENCH FT.	0'
TLM/LDS MODEL No.	-	Map Posting? YES ☒ NO ☐	Posted by:

FDOT #439881-4-52-01
81 New Lights
v/o US-1,Daytona Beach, FL 32114

Designed by:	Jessica Builes	Date:	05/19/21
Drawn by: JB	Check by:	Dwg No.	13 OF 23

Rural Location Sec. XX TWP. XX S, RGE. XX E.

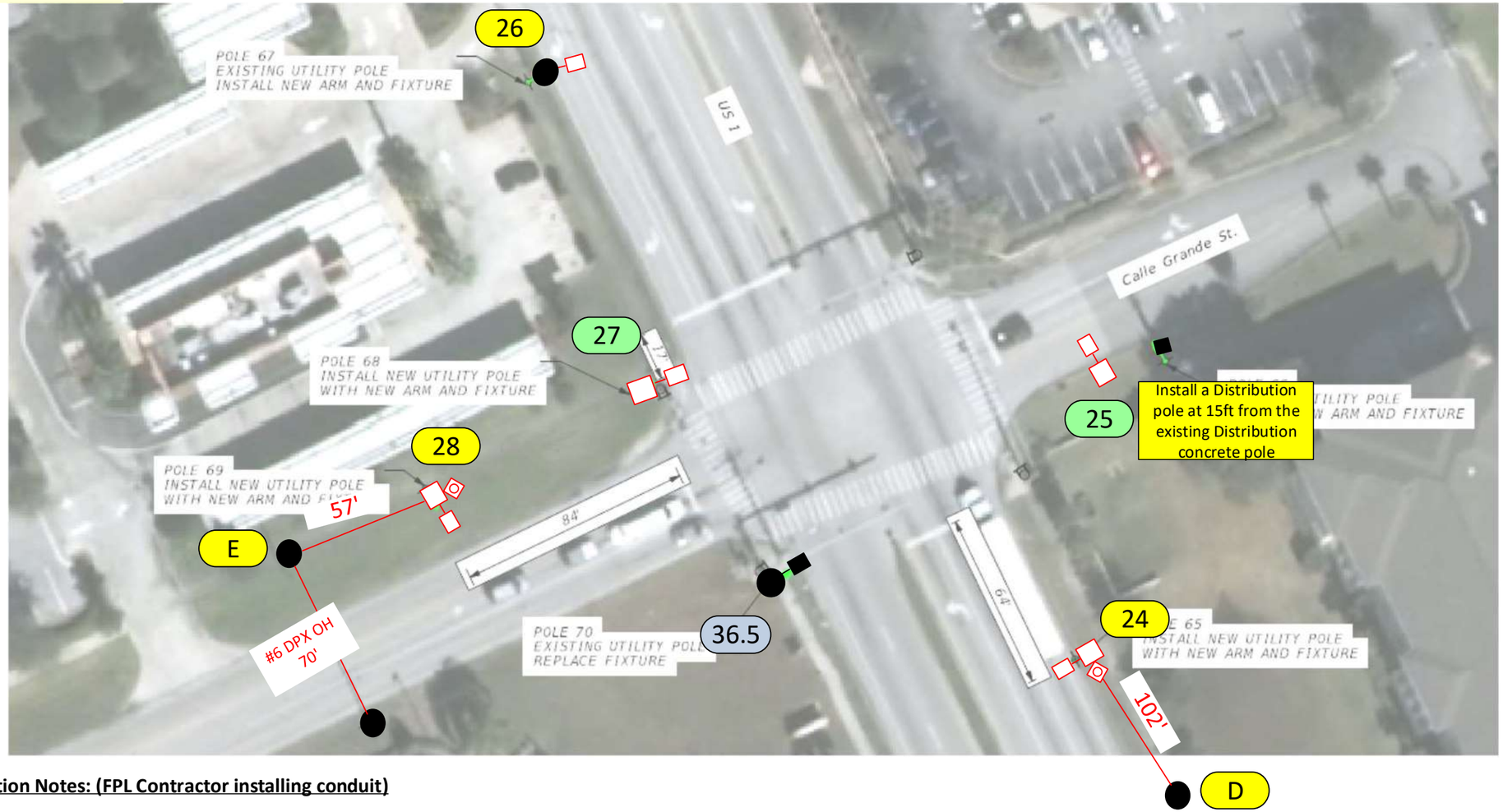
SCALE: N.T.S | St. Lt MAP No. MAP# | Pri Map No. XXXXX

WR XXXXXXXX

Attachment: Exhibit C - Ridgewood Ave Lighting Plan - 2nd St to Calle Grande Lighting Project (2024-R-47 : FPL Lighting Conversion

HOLLY HILL

☐ INACCESSIBLE ☒ 13 kV ☐ FUTURE 23 kV ☐ 23 kV ☐ SALT SPRAY ☐





Construction Notes: (FPL Contractor installing conduit)

Loc. 24 and 28 : Install 1 AEL 259W ATBL 4K 28,091 Lumens with 8' Arm Bracket on NEW 40' Concrete Pole (Mounting Height 30')
Loc. 25: Install a 40' Concrete Distribution Pole and Install 1 AEL 259W ATBL 4K 28,091 Lumens with 8' Arm Bracket
Loc, 26: Install 1 AEL 259W ATBL 4K 28,091 Lumens with 8' Arm Bracket on Existing Distribution Pole facing the street
Loc. 27: Install a 50' Concrete Distribution Pole and Install 1 AEL 259W ATBL 4K 28,091 Lumens with 8' Arm Bracket
Loc. 36.5: Replace existing fixture with 1 AEL 259W ATBL 4K 28,091 Lumens with 8' Arm Bracket
Loc E: Install a 2" Riser

FPL contractor to install 2'' PVC with 24'' minimum cover as shown in the drawing using directional bore. FPL contractor installing handholes and staking locations of the poles. Poles on this page to be installed in line with existing distribution poles. Stake locations of the poles by the property lines where applicable. Verify fixture is working after installation.
- FPL crew to run #6 DPX UG cable to all locations shown in the drawing.
- FPL contractors to repair any restoration required.
- All handholes to be 17''unless noted

FPL LED Representative: Scot Thrapp

Footage: 159ft

Ormond Beach

FDOT permit required

AS-BUILT CREW PRINT	ALL REQUIRED GROUND RODS HAVE BEEN DRIVEN & VERIFIED TO BE WITHIN FPL STANDARDS, VALUES ARE SHOWN AT ALL LOCATIONS.	JOB CERTIFIED COMPLETED AS SHOWN ON THIS AS-BUILT PRINT. MATERIAL CHANGES SHOWN ON RDS	AS-BUILT COPY
FOREMAN'S SIGNATURE / DATE	FOREMAN'S SIGNATURE / DATE	SUPERVISOR'S SIGNATURE / DATE	INITIALS / CERT. DAT

Easement? Yes ☐ No ☒	Survey/Stake? Yes ☐ No ☒	Work with SMO? Yes ☐ No ☒	FPL	FDOT #439881-4-52-01	
Tree Work? Yes ☐ No ☒	Designer/Stake? Yes ☐ No ☒	CT/Special Mtr? Yes ☐ No ☒		81 New Lights	
PERMIT REQ'D: City X	County Rd.	County Air	State Road	FAA	v/o US-1,Daytona Beach, FL 32114
WMD	RR Xing	DR. Dist.	Transm.		
Requested Tel. Co. Set Poles ? YES ☐ NO ☒	Tele. Attachment Per				
Requested Tel. Co. Transfer ? YES ☐ NO ☒	Telephone Co. Job No.				
Request CAVT Transfer? YES ☐ NO ☒					
POLE LINE FEET 0'	DUCT BANK FT. 0'			Designed by: Jessica Builes	Date: 05/19/21
POLE LINE FT. ON TRANSM. POLES 0'	TRENCH FT. 0'			Drawn by: JB Check by:	Dwg No. 14 OF 23
TLM/LDS MODEL No. -	Map Posting? YES ☒ NO ☐ Posted by:			Rural Location Sec. XX TWP. XX S, RGE. XX E.	
				SCALE: N.T.S St. Lt MAP No. MAP# Pri Map No. XXXXX	
				WR XXXXXXXX	

Attachment: Exhibit C - Ridgewood Ave Lighting Plan - 2nd St to Calle Grande Lighting Project (2024-R-47 : FPL Lighting Conversion

FPL Account Number: **6659300708**

FPL Work Request Number: _____

LED LIGHTING AGREEMENT

In accordance with the following terms and conditions, City of Holly Hill (hereinafter called the Customer), requests on this 16th day of **May**, **2024**, from FLORIDA POWER & LIGHT COMPANY (hereinafter called FPL), a corporation organized and existing under the laws of the State of Florida, the following installation or modification of lighting facilities at (general boundaries) FDOT Streetlights, located in Holly Hill, Florida.

(a) Installation and/or removal of FPL-owned facilities described as follows:

Fixture Description (1)	Watts	Lumens	Color Temperature	# Installed	# Removed
Roadway	263	31,500	4K	35	
HPS	200				18

(1) Catalog of available fixtures and the assigned billing tier for each can be viewed at www.fpl.com/led

Attachment: Exhibit D - Ridgewood Ave Streetlights-Fdot-FPL (2024-R-47 : FPL Lighting Conversion Agreement and Plans)

Pole Description	# Installed	# Removed
40' Concrete Pole Side Arm Mount	4	

(b) Installation and/or removal of FPL-owned additional lighting facilities where a cost estimate for these facilities will be determined based on the job scope, and the Additional Lighting Charges factor applied to determine the monthly rate.

(c) Modification to existing facilities other than described above or additional notes (explain fully): (4) 40' Standard Concrete Poles Side Arm Mount and (1)50' & (1) 55' & (1) 40' Distrubution Pole. (21) 8' and (14) 12' Arms. FDOT will pay the CIAC of $94,037.31 upon completion of the project under FIN 439881-4

Attachment: Exhibit D - Ridgewood Ave Streetlights-Fdot-FPL (2024-R-47 : FPL Lighting Conversion Agreement and Plans)

That, for and in consideration of the covenants set forth herein, the parties hereto covenant and agree as follows:

FPL AGREES:

1. To install or modify the lighting facilities described and identified above (hereinafter called the Lighting System), furnish to the Customer the electric energy necessary for the operation of the Lighting System, and furnish such other services as are specified in this Agreement, all in accordance with the terms of FPL's currently effective lighting rate schedule on file at the Florida Public Service Commission (FPSC) or any successive lighting rate schedule approved by the FPSC.

THE CUSTOMER AGREES:

2. To pay a monthly fee for fixtures and poles in accordance to the Lighting tariff, and additional lighting charge in the amount of $83.18 These charges may be adjusted subject to review and approval by the FPSC.

3. To pay Contribution in Aid of Construction (CIAC) in the amount of $0.00 prior to FPL's initiating the requested installation or modification.

4. To pay the monthly maintenance and energy charges in accordance to the Lighting tariff. These charges may be adjusted subject to review and approval by the FPSC.

5. To purchase from FPL all the electric energy used for the operation of the Lighting System.

6. To be responsible for paying, when due, all bills rendered by FPL pursuant to FPL's currently effective lighting rate schedule on file at the FPSC or any successive lighting rate schedule approved by the FPSC, for facilities and service provided in accordance with this agreement.

7. To provide access, suitable construction drawings showing the location of existing and proposed structures, and appropriate plats necessary for planning the design and completing the construction of FPL facilities associated with the Lighting System.

8. To have sole responsibility to ensure lighting, poles, luminaires and fixtures are in compliance with any applicable municipal or county ordinances governing the size, wattage, lumens or general aesthetics.

9. For new FPL-owned lighting systems, to provide final grading to specifications, perform any clearing if needed, compacting, removal of stumps or other obstructions that conflict with construction, identification of all non-FPL underground facilities within or near pole or trench locations, drainage of rights-of-way or good and sufficient easements required by FPL to accommodate the lighting facilities.

10. For FPL-owned fixtures on customer-owned systems:
    a. To perform repairs or correct code violations on their existing lighting infrastructure. Notification to FPL is required once site is ready.
    b. To repair or replace their electrical infrastructure in order to provide service to the Lighting System for daily operations or in a catastrophic event.
    c. In the event the light is not operating correctly, Customer agrees to check voltage at the service point feeding the lighting circuit prior to submitting the request for FPL to repair the fixture.

IT IS MUTUALLY AGREED THAT:

11. Modifications to the facilities provided by FPL under this agreement, other than for maintenance, may only be made through the execution of an additional lighting agreement delineating the modifications to be accomplished. Modification of FPL lighting facilities is defined as the following:

    a. the addition of lighting facilities:
    b. the removal of lighting facilities; and
    c. the removal of lighting facilities and the replacement of such facilities with new facilities and/or additional facilities.

    Modifications will be subject to the costs identified in FPL's currently effective lighting rate schedule on file at the FPSC, or any successive schedule approved by the FPSC.

12. FPL will, at the request of the Customer, relocate the lighting facilities covered by this agreement, if provided sufficient rights-of-way or easements to do so and locations requested are consistent with clear zone right-of-way setback requirements. The Customer shall be responsible for the payment of all costs associated with any such Customer- requested relocation of FPL lighting facilities. Payments shall be made by the Customer in advance of any relocation.
    Lighting facilities will only be installed in locations that meet all applicable clear zone right-of-way setback requirements.

13. FPL may, at any time, substitute for any fixture installed hereunder another equivalent fixture which shall be of similar illuminating capacity and efficiency.

Attachment: Exhibit D - Ridgewood Ave Streetlights-Fdot-FPL (2024-R-47 : FPL Lighting Conversion Agreement and Plans)

14. This Agreement shall be for a term of ten (10) years from the date of initiation of service, and, except as provided below, shall extend thereafter for further successive periods of five (5) years from the expiration of the initial ten (10) year term or from the expiration of any extension thereof. The date of initiation of service shall be defined as the date the first lights are energized and billing begins, not the date of this Agreement. This Agreement shall be extended automatically beyond the initial ten (10) year term or any extension thereof, unless either party shall have given written notice to the other of its desire to terminate this Agreement. The written notice shall be by certified mail and shall be given not less than ninety (90) days before the expiration of the initial ten (10) year term, or any extension thereof.

15. In the event lighting facilities covered by this agreement are removed, either at the request of the Customer or through termination orbreach of this Agreement, the Customer shall be responsible for paying to FPL an amount equal to the original installed cost of thefacilities provided by FPL under this agreement less any salvage value and any depreciation (based on current depreciation ratesapproved by the FPSC) plus removal cost.

16. Should the Customer fail to pay any bills due and rendered pursuant to this agreement or otherwise fail to perform the obligations contained in this Agreement, said obligations being material and going to the essence of this Agreement, FPL may cease to supplyelectric energy or service until the Customer has paid the bills due and rendered or has fully cured such other breach of this Agreement. Any failure of FPL to exercise its rights hereunder shall not be a waiver of its rights. It is understood, however, that such discontinuance of the supplying of electric energy or service shall not constitute a breach of this Agreement by FPL, nor shall it relieve the Customer ofthe obligation to perform any of the terms and conditions of this Agreement.

17. The obligation to furnish or purchase service shall be excused at any time that either party is prevented from complying with this Agreement by strikes, lockouts, fires, riots, acts of God, the public enemy, or by cause or causes not under the control of the party thus prevented from compliance, and FPL shall not have the obligation to furnish service if it is prevented from complying with this Agreementby reason of any partial, temporary or entire shut-down of service which, in the sole opinion of FPL, is reasonably necessary for the purpose of repairing or making more efficient all or any part of its generating or other electrical equipment.

18. This **Agreement supersedes all previous Agreements** or representations, either written, oral, or otherwise between the Customer andFPL, with respect to the facilities referenced herein and constitutes the entire Agreement between the parties. This Agreement does not create any rights or provide any remedies to third parties or create any additional duty, obligation or undertakings by FPL to third parties.

19. In the event of the sale of the real property upon which the facilities are installed, upon the written consent of FPL, this Agreement may be assigned by the Customer to the Purchaser. No assignment shall relieve the Customer from its obligations hereunder until such obligations have been assumed by the assignee and agreed to by FPL.

20. This Agreement shall inure to the benefit of and be binding upon the successors and assigns of the Customer and FPL.

21. The lighting facilities shall remain the property of FPL in perpetuity.

22. This Agreement is subject to FPL's Electric Tariff, including, but not limited to, the General Rules and Regulations for Electric Service andthe Rules of the FPSC, as they are now written, or as they may be hereafter revised, amended or supplemented. In the event of any conflict between the terms of this Agreement and the provisions of the FPL Electric Tariff or the FPSC Rules, the provisions of the Electric Tariff and FPSC Rules shall control, as they are now written, or as they may be hereafter revised, amended or supplemented.

IN WITNESS WHEREOF, the parties hereby caused this Agreement to be executed in triplicate by their duly authorized representatives to be effective as of the day and year first written above.

Charges and Terms Accepted:

City of Holly Hill	**FLORIDA POWER & LIGHT COMPANY**
Customer (Print or type name of Organization)	
By: _____	**By:** Scot Thrapp
Signature (Authorized Representative)	**(Signature)**
_____	**Scot Thrapp**
(Print or type name)	**(Print or type name)**
Title: _____	**Title: FPL LT-1 Representative**

Attachment: Exhibit D - Ridgewood Ave Streetlights-Fdot-FPL (2024-R-47 : FPL Lighting Conversion Agreement and Plans)

HOLLY HILL
FLORIDA

STAFF REPORT
CITY OF HOLLY HILL, FLORIDA

City Commission
Resolution

MEETING DATE: **July 9, 2024**
FROM: **Antoine Khoury**
SUBJECT: **A Resolution of the City Commission of the City of Holly Hill, Florida, Approving a Wastewater Facility Plan for Incorporation into the City's SAHFI Grant Application as Prepared by Mead & Hunt, Inc.; Providing for Severability; and Providing an Effective Date.**
NUMBER: **2024-R-48**
APPLICANT:
PLANNER:

DISCUSSION:

The City Commission authorized Supplemental Appropriation for Hurricanes Fiona and Ian (SAHFI) grant applications with the Florida Department of Environmental Protection (FDEP) with Resolution 2024-R-42 on June 11, 2024. The application requested up to $9.3 million dollars in wastewater facility improvements. The SAHFI grants are being awarded through the Florida State Revolve Funds (**SRF**) loan program with a "no payment" obligation.

The City Utility's engineering consultant, Mead and Hunt, facilitated the application and has worked with City staff to assess the waste water utility plant needs and evaluate various alternatives in the development of a facility plan. The Wastewater Facility Plan is attached as Exhibit A. The plan's goal is to create a more resilient wastewater operation. The Wastewater Facility Plan is part of the loan application.

The State will issue a SAHFI agreement for wastewater resilience project based on the successful completion of the applications. The agreement shall be brought to the City Commission for ratification. The FDEP grant schedule anticipates that the agreements will be issued in November of 2024.

FISCAL ANALYSIS:

There are no expenditures at this time. Capital Project 24-WW-08 was created for this grant project. The City is required to complete its application for the SAHFI grant application to access funding. The grant is for Capital Wastewater facility improvements of up to $9.3 million dollars. The SAHFI grants are being awarded through the Florida State Revolve Funds (**SRF**) loan program with a "no payment" obligation. The **SAHFI** grant agreement for the potential future wastewater plant improvements will be brought back to council for approval as appropriate.

STAFF RECOMMENDATION:

The City Commission to review and approve the Wastewater Facility Plan for incorporation with the SAHFI application to the State as prepared by Mead and Hunt, Inc.

COMMISSION GOALS:

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:

THE CITY COMMISSION OF THE CITY OF HOLLY HILL, FLORIDA, APPROVE A WASTEWATER FACILITY PLAN FOR INCORPORATION INTO THE CITY'S SAHFI GRANT APPLICATION AS PREPARED BY MEAD & HUNT; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

ATTACHMENTS:

- HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (PDF)

Resolution No. 2024-48

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF HOLLY HILL, FLORIDA, APPROVING A WASTEWATER FACILITY PLAN FOR INCORPORATION INTO THE CITY'S SAHFI GRANT APPLICATION AS PREPARED BY MEAD & HUNT, INC.; PROVIDING FOR SEVERABILITY; AND PROVIDING AN EFFECTIVE DATE.

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF HOLLY HILL, FLORIDA, APPROVING A WASTEWATER FACILITY PLAN FOR INCORPORATION INTO THE CITY'S SAHFI GRANT APPLICATION AS PREPARED BY MEAD & HUNT; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, Florida Statutes provide for loans to local government agencies to finance the construction of wastewater facilities; and Florida Administrative Code requires the formal authorization by City Council to formally adopt a facility plan outlining necessary facility improvements to comply with State of Florida funding requirements; and

WHEREAS, formal adoption of the proposed Facility Plan is required for the City Utility to participate in the State Revolving Loan Fund Program; and

WHEREAS, the City Commission of the City of Holly Hill, Florida agrees with the findings and summary of necessary improvements as outlined in the Facility Plan for the purpose of creating a more resilient wastewater service.

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

SECTION 1. The foregoing findings are incorporated herein by reference and made a part hereof.

SECTION 2. The City of Holly Hill, Florida formally approves and adopts the Wastewater Facility Plan as written and presented to the City Commission on this date.

SECTION 3. This loan will be one hundred percent principal forgiveness. There will be no revenues pledged for the repayment of this loan.

SECTION 4. The City Manager is hereby designated as the authorized representative to provide the assurances and commitments required to implement the facility plan.

SECTION 5. The Mayor is hereby designated as the authorized representative to execute the Facility Plan which will become the foundation of all activities related to the wastewater facility improvements. The Mayor is authorized to represent the City in carrying out the City's responsibilities under the Facility Plan. The Mayor is authorized to delegate responsibility to appropriate the City Manager to carry out technical, financial, and administrative activities associated with the Facility Plan.

SECTION 6. The legal authority for borrowing moneys to construct this Project is Section 166.111, Florida Statutes and Section 403.8532, Florida Statutes.

SECTION 7. All Resolutions or part of Resolutions in conflict with any of the provisions of this resolution are hereby repealed.

SECTION 8. 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 9. This Resolution shall become effective immediately upon its adoption.

APPROVED AND AUTHENTICATED on the 9th day of JULY, 2024.

Mead & Hunt

3rd BTU and Resiliency Improvements Facility Plan

City of Holly Hill Wastewater Treatment Plant

June 2024

Brad T. Blais, PE
FL # 47130

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

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1. Introduction

11 Objective

The City of Holly Hill provides wastewater service to residential and commercial customers throughout the City's service area. The City currently operates one wastewater treatment plant which is in need of critical upgrades to maintain Class 1 reliability and resiliency. This facility plan sets forth design criteria and a preliminary cost estimate for the proposed upgrades. A project location map is provided in **Figure 1-1**. The Plan is prepared in a format consistent with the facilities plan review checklist developed by the Florida Department of Environmental Protection (FDEP). Future State Revolving Fund (SRF) Loan Application requests will be submitted for funding wastewater projects defined herein.

The City's WWTF, Facility ID #FL0027677, was significantly impacted by Hurricane Ian and subsequently during extreme rainfall events in 2023. Incident reports for storm related sewage overflows and discharge are included for reference in **Appendix A**. This facility has a history of sewage capacity issues during severe events when influent rates are 3-4 times the peak rated capacity. The City has undertaken numerous Infiltration & Inflow (I&I) reduction programs throughout the collection system to mitigate the impacts of severe weather; however, the geography and topography of the City minimize the effectiveness of these programs during severe rainfall and high tide events.

Therefore, the most effective means of preventing illicit sewage overflows and treatment capability at this facility is the construction of additional of hydraulic conveyance, biological treatment, automation and effluent storage/pumping capacity. The projects described herein address:

- Influent screening and flow equalization
- Addition of a 3rd Biological Treatment Unit (BTU)
- Filtration improvements and capacity upgrades
- Effluent management system additions and upgrades

12 Background

The City's existing wastewater treatment facility consists of the following process components:

- Influent screening and grit removal
- Flow equalization
- Biological nutrient removal via Orbal Process
- Secondary clarification
- Filtration
- Re-aeration
- Chlorine contact/disinfection
- Transfer to reuse or dechlorination and effluent discharge

The treatment plant has a rated capacity of 3.0 MGD and provides tertiary treatment with high level disinfection. The biological nutrient removal treatment process utilizes traditional activated sludge

treatment carried out in two (2) parallel Orbal basins. Plant effluent is discharged through the public access reclaimed water distribution system; the remainder of the flow is de-chlorinated and discharged to the Halifax River. On site residual handling processes include aerobic digestion, sludge thickening, blending, mechanical dewatering and land application of class “B” sludge.

Holly Hill’s WWTP, and the City’s service area, is sited within a low-lying area between 2 major state roads. The roadway elevations are 2-5’ above the prevailing ground elevations within the service area and create a closed drainage basin that relies upon drainage canals that discharge into the Halifax River. During extreme storm and high tide events, the drainage canals are tailwater limited and the roadways and WWTP site are submerged until the rainfall and tide subsides. The image below depicts the WWTP site approximately 24 hours after the peak of Hurricane Ian. Inevitably, the collection system is also submerged and excessive inflow occurs. No degree of I&I mitigation can prevent this occurrence. Construction of additional hydraulic conveyance, biological treatment, automation and effluent storage/pumping are the only practical means of addressing acute, severe events. This resiliency project is intended to increase the City’s ability to manage these types of events. This includes additional provisions for remote operation, monitoring, and automation to maintain system operability during and immediately following hurricanes and tropical storms.



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13 Proposed Projects

1.3.1 3rd BTU and Headworks Improvements

The City desires to undertake targeted improvements at the City's Wastewater Treatment Plant (WWTP) to provide operational redundancy, meet Class 1 reliability requirements and improved performances while continuing to the meet Advanced Wastewater Treatment (AWT) permit limits. The proposed improvements shall include the following:

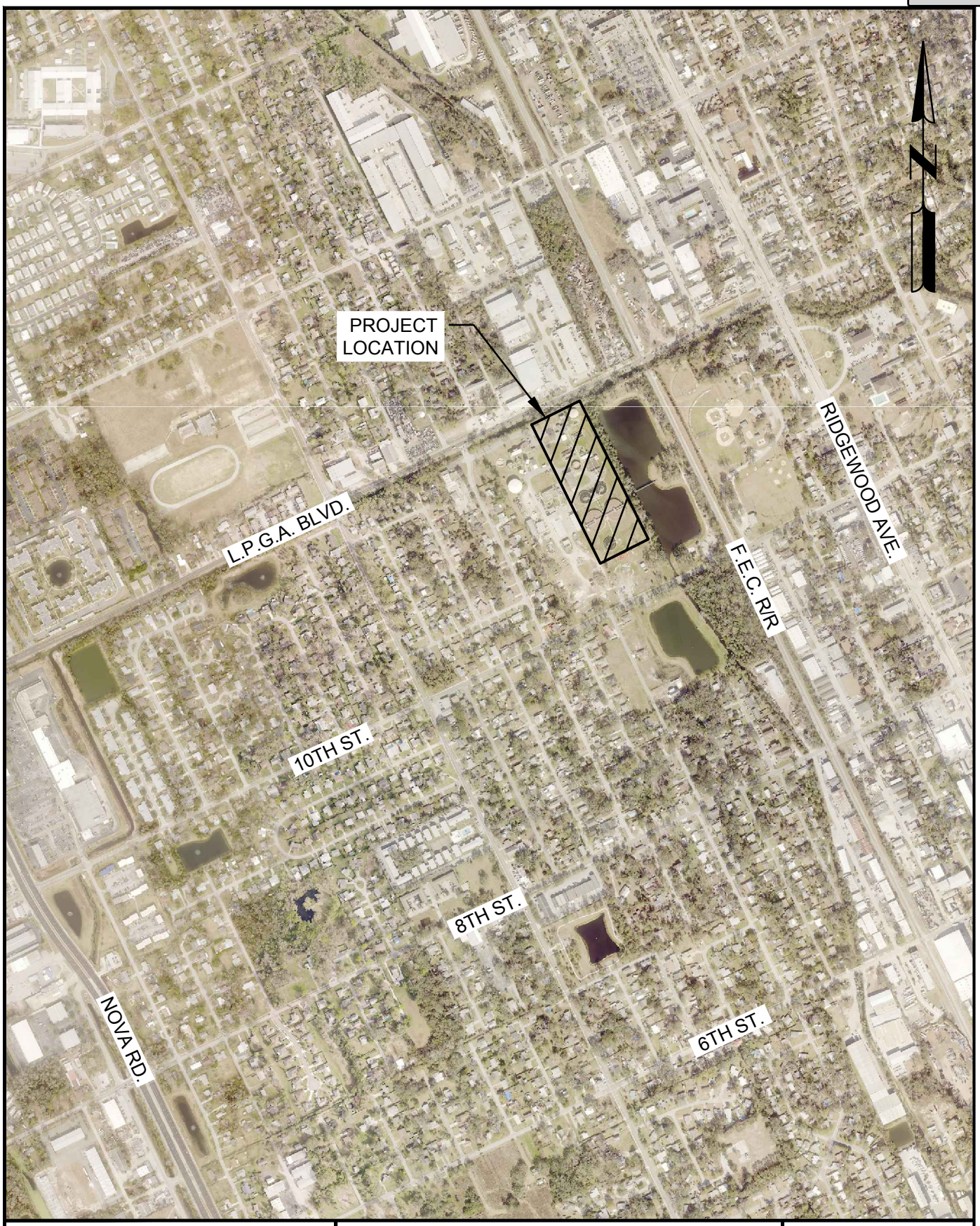
- Addition of New 1.5 MGD Orbal Basin
- Replacement of existing barscreens with redundant and higher capacity screens
- New mixing/aeration and pumping systems for existing equalization basin
- New flow distribution structure
- Civil/site work and yard piping
- New valves on incoming north and south force mains for flow isolation
- Instrumentation & Controls (I&C) Systems for remote monitoring/control and automation
- Electrical system upgrades for resiliency and redundancy

1.3.2 Effluent Management Facilities

The City requires additional effluent pumping and storage capacity to manage peak events. In addition to providing additional capacity for acute events, the City is routinely investigating solutions to reduce annual average effluent discharge volume to the Halifax River. This project comports with the City's SB64 compliance strategy that was adopted in 2022 in accordance with Senate Bill 64 rules and requirements. Providing additional effluent transfer capacity, reclaimed water storage volume, and improving the WWTP's effluent transmission capability will mitigate the need to discharge to the Halifax River.

In addition to proposed effluent storage and pumping capacity, the project includes new chemical storage and feed systems. The City currently utilizes gaseous chlorine for disinfection. The chlorine gas and sulfur dioxide are stored in 1-ton cylinders. The City maintains a Risk Management Program to continue utilization of 1-ton chlorine gas cylinders. This project will eliminate gaseous chlorine and sulfur dioxide. Proposed liquid sodium hypochlorite (NaOCl) and sodium bi-sulfite storage and feed facilities will replace the gaseous systems. The Effluent Management Facilities project shall include the follow:

- 2.0 reclaimed water ground storage tank
- Reclaimed water high service pump station upgrades
- Submersible effluent transfer pumps
- Redundant liquid chlorine storage and chemical feed
- Redundant liquid sodium bisulfite de-chlorination



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3RD BTU & INFLUENT HEADWORKS MODIFICATIONS PROJECT LOCATION

FIGURE 1-1

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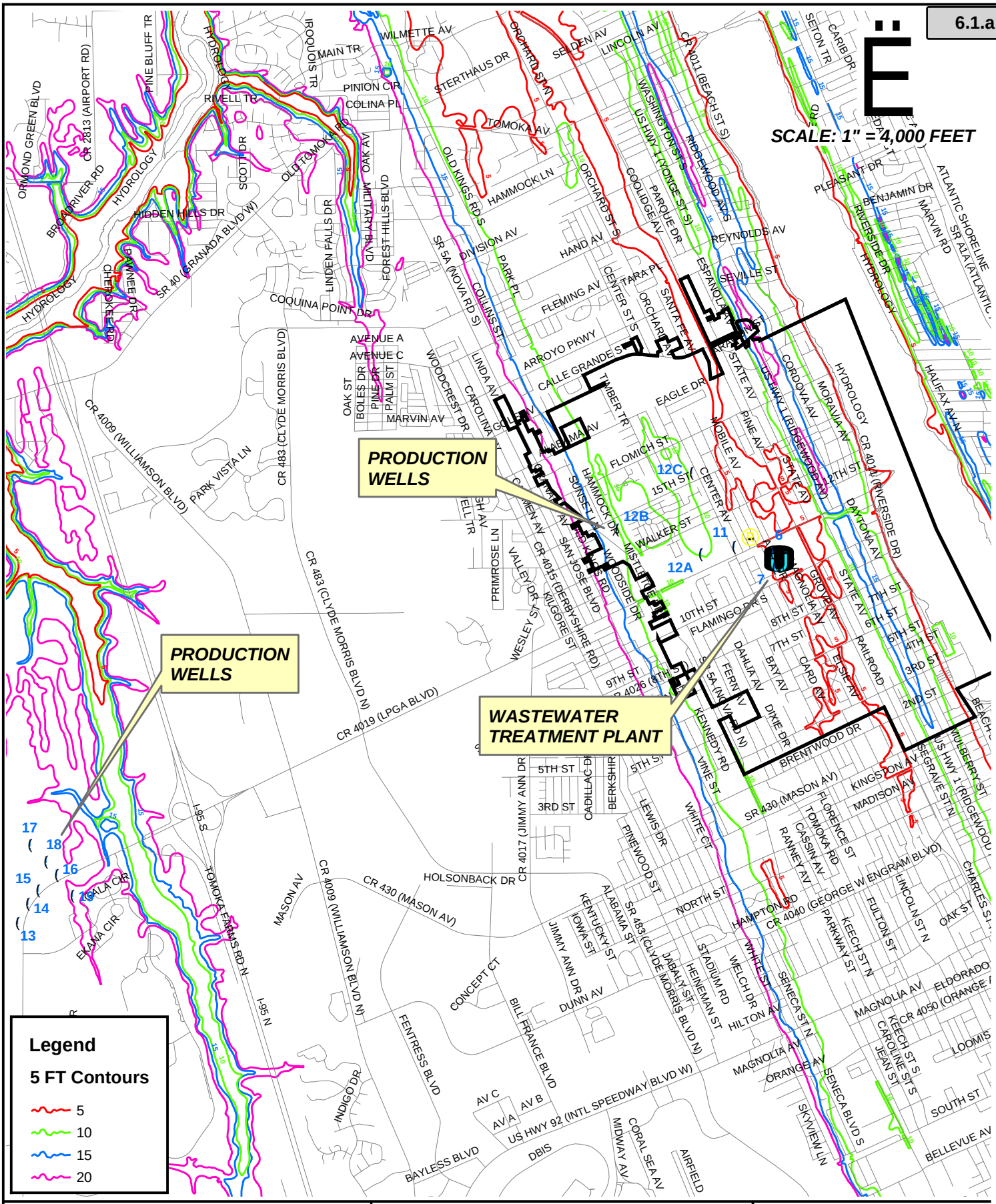
2. Existing Conditions

21 Topography

Figure 2-1 details the service area's location with respect to topographic features. Most of the service area is located on the Silver Bluff Terrace. Surface topography on the Silver Bluff Terrace is relatively flat with an average elevation of approximately 5-10 feet above mean sea level (msl). The service area is bounded by US Hwy #1 and SR #5A to the east and west, respectively. The roadway elevations are at elevation 20.0 (approximately), creating a closed basin that relies upon a single drainage canal discharging to the Halifax River. During severe rainfall and high tide events, the area is subject to significant flooding. Topographic elevations along the Atlantic Coastal Ridge are approximately fifteen to twenty feet higher. This Ridge roughly parallels Nova Road and represents the west boundary of the service area.

The water and wastewater treatment plant sites are located on the eastern, lower portion of the Silver Bluff Terrace. The WWT plant site is approximately one mile west of the barrier island.

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's



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3rd BTU and Resiliency Improvements Facility Plan

REGIONAL TOPOGRAPHY

File Name: FIG_3-1_regional topography.mxd

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22 Geology

Regional geologic data collected by various sources indicates that the wastewater plant is underlain by unconsolidated Pleistocene and Holocene deposits consisting of fine to medium quartz sands, clayey sand and localized shell beds. Surficial deposits are underlain by sediments of Pliocene to late Miocene age consisting of sand, shells and calcareous clay.

Underlying these unconsolidated deposits is the Ocala limestone formation which is composed of cream to white fossiliferous limestone. Its thickness is generally less than 100 feet. Beneath the Ocala limestone is the Avon Park limestone of late-middle Eocene Age. It consists of layers of dark brown dolomite separated by layers of chalky limestone. The formation thickness is estimated at approximately 300 feet (Wyrick, 1960). Production wells at the City's wellfield are open holes from 120 feet to 300 feet below grade, all are withdrawing from the Ocala and Avon Park limestone.

23 Hydrogeology

Soil borings taken during the wellfield development program detail the composition of the shallow aquifer. There is a clay layer at a depth of approximately 60 feet. It is the primary confining layer which establishes the top of the artesian aquifer.

This clay layer serves as a confining unit which hydraulically separates the potentiometric heads of the Upper Floridan Aquifer from the surficial aquifer system (Phelps, 1990). Based on data obtained annually by St. Johns River Water Management District typical potentiometric water surface elevations of the Floridian Aquifer in the vicinity of the wellfield range from 10 to 15 feet NGVD. The hydraulic gradient is towards the northeast.

Ground surface elevations in the Holly Hill wellfield and corresponding water surface/surficial aquifer elevations range between 25 to 30 feet NGVD. As a result of the net downward gradient between the surficial aquifer and Upper Floridan Aquifer as well as leakance through the confining layer, the terrace and ridge areas provide some recharge to the Upper Floridan Aquifer. Recharge rates are estimated at 8 or 9 inches per year (Phelps, 1990).

The source of water for the surficial aquifer is primarily local rainfall. Water is stored in the pore space of the soils. Water exits the surficial aquifer via downward leakance, horizontal flow to drainage ways, and evapotranspiration. The volume available for withdrawal from the Volusia Floridan Aquifer is dependent upon the surficial system. Any discussion of the surficial aquifer in the Holly Hill service area should point out the positive aspects of the Miocene Age clay. This clay helps assure the water quality of the municipal supply. The ion exchange potential of the material forms a protective barrier to the downward migration of pollutants. Nevertheless, improper waste disposal including toxic chemicals must be isolated from the surficial aquifer. The groundwater resource must be protected.

It should be noted that the confining layer exhibits leakance and as such, promotes recharge. This characteristic is valuable as it renews water supplies withdrawn for consumption; however, leakance creates a hydraulic connection from the surficial aquifer to the Upper Floridan aquifer. If contamination of the surficial aquifer occurs, it is possible to compromise the City's water supply.

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24 Surface Water Hydrology

The wastewater treatment plant discharge is to the Halifax River and public access reclaimed water distribution system. The Halifax River is a Class III surface water as defined by the State of Florida. There are no Outstanding Florida Waters in the Holly Hill Service area.

The Halifax River serves as a massive settling basin for the silts generated during the wet season. This is evidenced by the estuarine marsh present at the lagoon's outlet to the ocean and other settlement areas. The silt source from Holly Hill is the 11th Street Canal. This canal transports stormwater from the majority of the service area and discharges to the river south of 11th Street.

This canal is affected by tidal action. Brackish water may encroach on the canal during the dry season. During the wet season, the high flows of fresh water will flush these brackish waters out of the canal and into the river.

The soils in the Holly Hill service area are in general, poorly drained. The terrain on the Silver Bluff Terrace has very little relief. Thus, rainfall is impounded in shallow depressions. The shallow relief minimizes the driving pressure for subsoil water. There is almost no energy gradient to cause lateral movement. This lack of movement accounts for the generally saturated condition of the clastic aquifer. The saturated condition prevents the subsoil from accepting further rainfall. Surface flow is directed to the stormwater system with ultimate discharge to the Halifax River. The eastern portions of the basin, and the WWTP site, are subject to flooding.

25 Climate

The climate of the Holly Hill service area is subtropical. According to the U.S. Weather Bureau, the mean annual temperature is 70°F., and the normal average rainfall is approximately 52 inches. Generally, precipitation is greatest between June and mid-October and accounts for approximately 60 percent of the year's precipitation. Periods of cloudiness or rainfall lasting over two or three days occur infrequently. These periods are usually caused by a stationary front, such as a northeasters or tropical storms.

The Holly Hill service area is within the "hurricane belt", but chances of having hurricane force winds in any given year are about 1 in 30. Generally, hurricanes pass well offshore or lose most of their force crossing the State before they reach the project area. Hurricane force winds are rarely experienced in the area. Climate has a significant affect upon infiltration and inflow. The Holly Hill treatment plant flow peaks correspond with the high rainfall months.

26 Terrestrial and Aquatic Plant and Animal Communities

Very few coastal vegetative resources remain in the City. The remaining mangroves, seagrass beds, and estuarine marshes located within the City's boundaries are stressed.

Each of these vegetative communities perform important natural functions. Mangroves and estuarine marshes improve water quality, control erosion, and provide protection from storms by trapping sediments

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and debris, removing excess nitrogen and phosphorous nutrients, stabilizing shorelines, and buffeting winds. Seagrass beds trap and bind sediments thereby improving water quality and stabilizing the shoreline.

Mangroves provide a habitat for many types of fish, crustaceans, and birds. Several species of birds which frequent mangroves in Volusia County are considered threatened or endangered, these include: the Snowy Egret, the Brown Pelican, the Roseate Spoonbill and the Least Tern.

Estuarine marshes serve as habitat for many types of birds and a nursery habitat for many fish. Threatened or endangered fowl include the Snowy Egret and the Least Tern. The seagrass beds provide food and protection for many kinds of juvenile fish.

The pinewoods vegetative community is dominated by the slash pine and includes pine flatwoods. These trees form the highest layer of vegetation above the ground and the floor is usually covered by palmetto bushes. Threatened or endangered wildlife found in the pine flatwoods are the Gopher Frog, the Gopher Tortoise and the Indigo Snake. In addition, nesting Bald Eagles and Osprey are found in these communities.

Freshwater marsh occur in seasonally flooded depressions and along streams, creeks, lakes and drainage ways. The dominant plant growth is emergent water plants and water tolerant grasses and sedges. Few trees inhabit marsh areas except for low growing, water tolerant species such as the coastal plains willow. Marshes are well suited for wading birds and aquatic wildlife. Threatened or endangered species found in freshwater marshes are the Florida Sandhill Crane, the Snowy Egret, and the Silver Rice Bat. Occasionally, Bald Eagles inhabit freshwater marshes.

The deciduous communities are characterized by pure or mixed strands of mature hardwood dominant trees. Historically, the upland forest or hardwood hammocks occupy the ridges. Today, small stands (less than 100 acres) are scattered throughout the County. The City contains only a few of these stands. Vegetation consists of live oak, laurel oak, hickory trees and, if conditions are suitable, red cedar, cabbage palm, magnolia, and red bay. Threatened or endangered wildlife associated with these communities are, the Indigo Snake and the Gopher Tortoise, The Osprey also nests in these areas. Improved pasture sites are 75 to 95 percent open grasslands with a few scattered trees. Few native wildlife species inhabit these areas because of the lack of available food. Common garden varieties of birds, such as the house sparrow and starling make up the majority of wildlife in these areas.

The sites occupied by the wastewater collection system are fully developed. Rehabilitation of the existing improvements will have no detrimental impact upon flora and fauna or threatened and endangered species.

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3. Historical and Projected Influent Flow

Historical flows for the Holly Hill utility service area are shown in **Table 3-1**. Annual average and peak month flow for the past ten (10) years are provided. Peak month flow ratios vary from 1.24 to 1.85.

TABLE 3-1: HISTORICAL INFLUENT FLOW

Year	AADF	Peak Month Flow	Peak Factor	Annual % Change	Plant Capacity	Percent Capacity
2012	1.33	1.64	1.24	-	3.00	44.23%
2013	1.46	2.08	1.42	9.29%	3.00	48.76%
2014	1.78	2.44	1.37	17.61%	3.00	59.18%
2015	1.58	2.21	1.40	-12.31%	3.00	52.69%
2016	1.69	3.13	1.85	6.37%	3.00	56.28%
2017	1.74	2.77	1.59	3.02%	3.00	58.03%
2018	2.06	2.62	1.27	15.43%	3.00	68.61%
2019	1.81	3.22	1.78	-13.93%	3.00	60.22%
2020	1.88	2.69	1.43	3.90%	3.00	62.67%
2021	1.88	2.93	1.55	0.00%	3.00	62.67%
2022	1.87	3.35	1.79	-1.14%	3.00	62.33%
2023	2.13	3.60	1.69	13.56%	3.00	71.00%

Projected influent flow was calculated using a historical trendline over the past ten (10) years of AADF data as shown in **Table 3-2**. It should be noted that metered peak day flows in 2022 and 2023 exceeded 6.0 MGD. The meter does not record flows >6.0 MGD; therefore, it is assumed that actual peak flows were in the range of 8-9 MGD. The design Peak Hour flow rate for this facility will be 9.0 MGD.

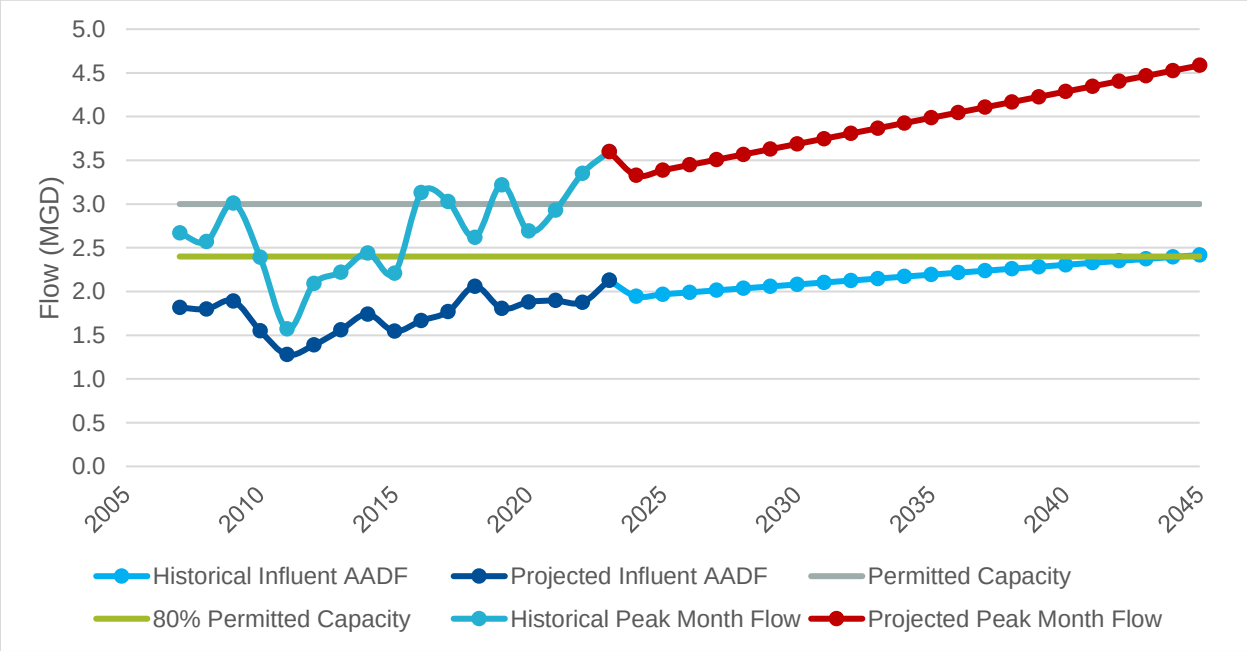
TABLE 3-2: PROJECTED INFLUENT FLOW

Year	AADF	Peak Month Flow	Peak Factor	Annual % Change	Plant Capacity AADF	Percent Capacity
2024	1.95	3.33	1.71	-8.58%	3.00	65.00%
2025	1.97	3.39	1.72	1.15%	3.00	65.67%
2026	1.99	3.45	1.73	1.14%	3.00	66.33%
2027	2.01	3.51	1.74	1.13%	3.00	67.00%
2028	2.04	3.57	1.75	1.12%	3.00	68.00%
2029	2.06	3.63	1.76	1.10%	3.00	68.67%
2030	2.08	3.69	1.77	1.09%	3.00	69.33%
2031	2.10	3.75	1.78	1.08%	3.00	70.00%
2032	2.13	3.81	1.79	1.07%	3.00	71.00%
2033	2.15	3.87	1.80	1.06%	3.00	71.67%
2034	2.17	3.93	1.81	1.05%	3.00	72.33%
2035	2.19	3.99	1.82	1.04%	3.00	73.00%

Year	AADF	Peak Month Flow	Peak Factor	Annual % Change	Plant Capacity AADF	Percent Capacity
2036	2.22	4.05	1.83	1.02%	3.00	74.00%
2037	2.24	4.11	1.84	1.01%	3.00	74.67%
2038	2.26	4.17	1.84	1.00%	3.00	75.33%
2039	2.28	4.23	1.85	0.99%	3.00	76.00%
2040	2.31	4.29	1.86	0.98%	3.00	77.00%

Figure 3-1 shows the summary of flows based on historical flows to WWTP vs flows projections based to population growth.

FIGURE 3-1: FLOW PROJECTION SUMMARY



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4. Wastewater Treatment Plant (WWTP) Modifications

41 Design Flows

The City of Holly Hill Wastewater Treatment Plant (WWTP) is currently designed to treat 3.0 MGD average daily flows. Peak day and peak hour flows are listed below:

Average Daily Flow (ADF)	=	3.0 MGD
Peak Day Flow (PDF)	=	(2.0)*3.0 MGD
	=	6.0 MGD
*Peak Hour Flow (PHF)	=	(3.0)*3.0 MGD
	=	9.0 MGD

PHF shall be used for hydraulic capacity design calculations.

42 Influent and Effluent Characteristics

The influent wastewater characteristics and current effluent advanced wastewater treatment (AWT) standards for the WWTP is presented in **Table 4-1.**

TABLE 4-1: INFLUENT AND EFFLUENT CHARACTERISTICS

Parameter	Unit	Influent	Effluent
Biological Oxygen Demand (BOD)	mg/L	200	5
Total Suspended Solids (TSS)	mg/L	200	5
Total Kjeldahl Nitrogen (TKN)	mg/L	32	
Ammonia Nitrogen (NH_3-N)	mg/L	25	1
Nitrate Nitrogen (NO_3-N)	mg/L	-	-
Total Nitrogen (TN)	mg/L	32	3
Total Phosphorous (TP)	mg/L	7	1

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4.3 Unit Process Capacity Breakdown

A summary of WWTP existing and proposed facilities is provided in **Table 4-2**.

TABLE 4-2: CAPACITY SUMMARY OF EXISTING AND PROPOSED FACILITIES

Unit	Qty	Existing AADF (MGD)	Existing PHF (MGD)	Proposed AADF (MGD)	Proposed PHF (MGD)
Headworks					
Existing Screens[1]	2	3	6		
New Mechanical Bar Screens[2]	2			**4.5**	**9**
Grit Removal	1	7	7	7	7
Equalization Basin[4]	2	-	-	-	-
Influent Pumps (transfer to EQ Basins)	3	-	7.5		
Existing Orbal BTUs (#1 and #2)	2	3	6		
New Orbal BTU (#3)[3]	1			1.5	3
Existing Clarifiers (#1, #2 and #3)	3	3.6	7.2		
Filtration	4	2.4	4.8		
High Level Disinfection (Chlorination)	1	3	6		

1. Existing screens to be replaced.
2. New bar screen sized to handle increased flows as compared to existing to address wet-weather flows.
3. Provides Class 1 reliability for existing Orbal units.
4. Has total usable volume of 199,000 gallons.

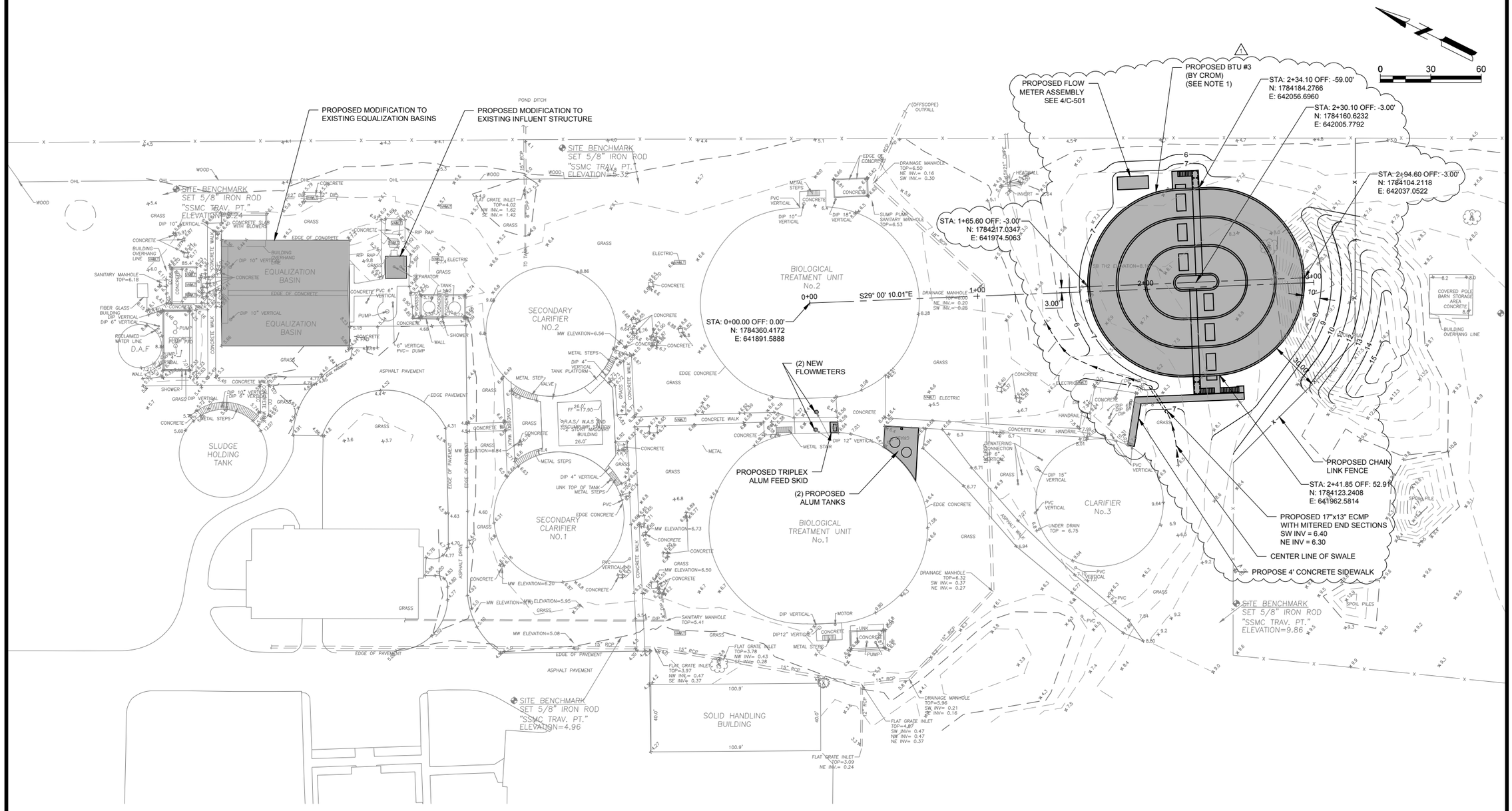
4.4 Process Design

The Holly Hill Water Reclamation Facility utilizes biological nutrient removal for treatment. The Orbal process is a continuous flow activated sludge process, which utilizes anoxic treatment within a carrousel and internal recycle to achieve nitrogen and carbonaceous BOD reduction. Filters are provided for the reduction of total suspended solids.

Plant effluent meets public access irrigation standards. Effluent is used for irrigation and the remainder is de-chlorinated and discharged to the Halifax River. The City is currently implementing programs to reduce surface level discharge.

A site plan of the existing, proposed structures, and other proposed improvements are shown in **Figure 4-1.** The process flow diagram is shown in **Figure 4-2.**

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's



NOTE:
1. CROM RESPONSIBLE FOR ALL STRUCTURAL DESIGN.

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CITY OF HOLLY HILL
WWTP 3RD BTU & INFLUENT
HEADWORKS MODIFICATIONS
453 LPGA BLVD.

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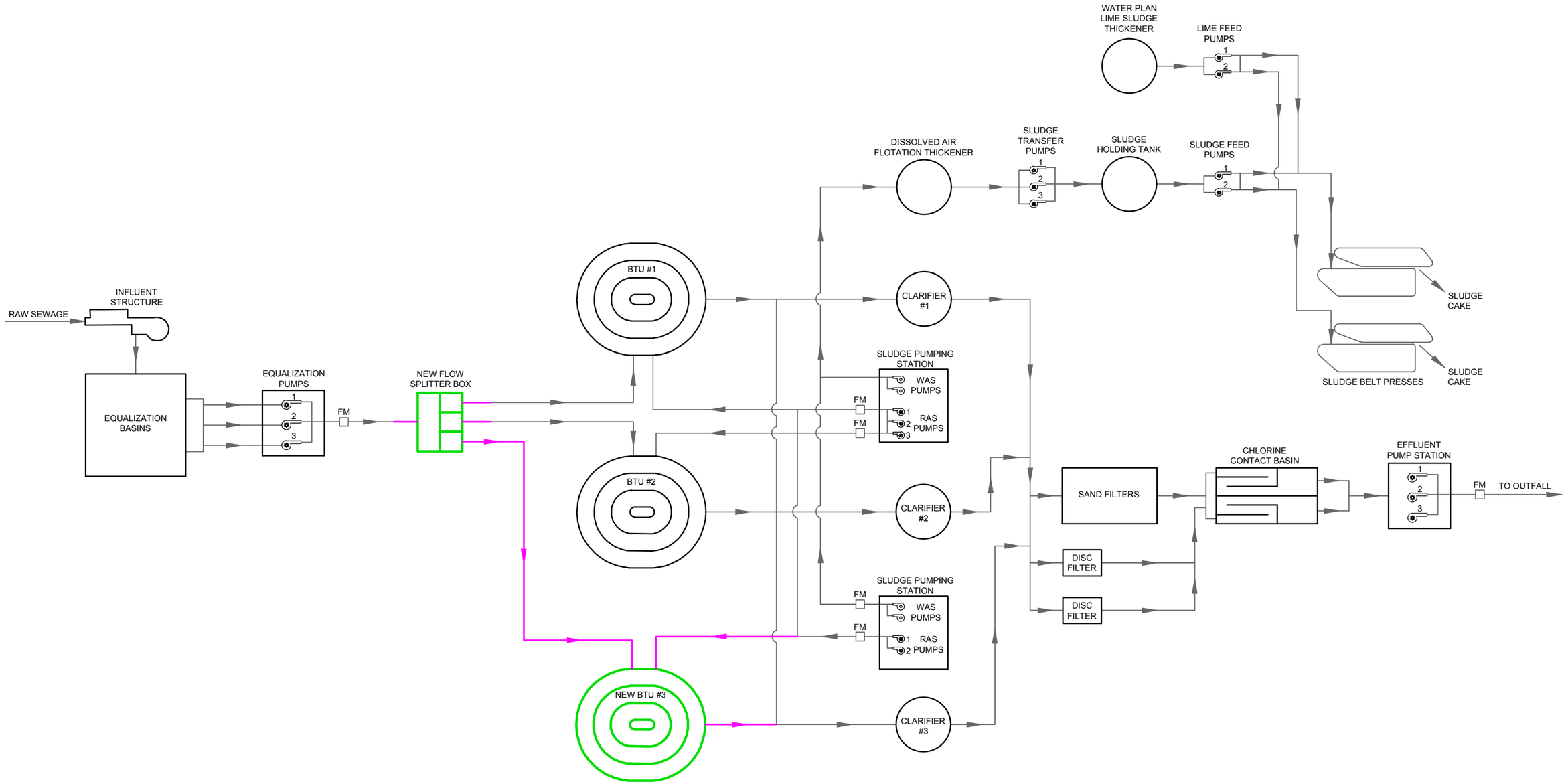
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SHEET CONTENTS
PROPOSED SITE PLAN

SHEET NO.
FIGURE 4-1

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

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PROCESS FLOW DIAGRAM

Mead & Hunt

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3RD BTU & INFLUENT HEADWORKS MODIFICATIONS

FIGURE 4-2

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45 Influent Structure

4.5.1 Screening

Raw sewage is pumped from the collection system pump stations into the influent structure. Two mechanical bar screens currently remove rags and plastic from the influent stream. Discussion with the WWTP staff has indicated numerous operational challenges and frequent problems with the existing screens resulting in expensive repairs.

A site visit by a Vulcan screen representative was performed to evaluate the existing screens. The findings are summarized as follows:

- WWTP staff identified operational issues including torque alarms, replacement of parts etc., which could be resulting due to rocks impacting the screens operation. Per the staff, the rocks are originating from City's brick manholes, which makes it way to the collection system pump stations, before being pumped to the WWTP headworks.
- The current screens are not designed for rocks in the influent.

The WWTP staff also indicated instances of influent flows overflowing the influent channels during wet weather conditions. The flow measurement at the headworks is currently limited to 6 MGD. It is estimated that wet weather flows currently exceed the 6 MGD.

The following criteria was developed to evaluate screens for the WWTP:

- Screens capable of handling rocks
- Screens need to fit into existing 24-in wide channel
- Two (2) Screens should be able to pass a combined flows equivalent or greater than 9 MGD.

Two kinds of screens from different manufacturers were evaluated including:

- Alternative 1 - Hydro-Dyne Bull Shark Through Flowscreen (4mm)
- Alternative 2 – Saveco FSM® Alpha Beta Perforated Screens (6mm)

It is further recommended that the City perform a manhole inspection study to identify the extent of manholes requiring rehabilitation and identify a longer-term solution to address them and reduction of I/I to the WWTP.

4.5.1.1 Alternative 1 - Hydro-Dyne Bull Shark Through Flowscreen (4mm)

The Hydro-Dyne Bull Shark Through Flowscreen considered for this project is a continuous band (stainless steel laced links) 4mm screen and can handle a design capacity of 4.5 MGD (combined capacity 9 MGD). An example of this screen is shown in **Figure 4-3**.

FIGURE 4-3: HYDRO-DYNE BULL SHARK THROUGH FLOWSCREEN



Additional technical details of the proposed 4 mm Hydro-Dyne screens are included in **Appendix B**. The screen shall each include a washing compactor and associated controls.

4.5.1.2 Alternative 2 - Saveco FSM® Alpha Beta Perforated Screens (6mm)

The Saveco FSM® Alpha Beta is a 6mm perforated plate belt filter screen and can handle a design capacity of 7.5 MGD (combined capacity,15 MGD) within the existing influent channels. The FRSIII Multi-Angle screen (as shown in **Figure 4-4**) increases the flow capacity through the screen without increasing the screen footprint. The first section of the screen sits at a 30° angle which significantly increases the exposed surface area. The screen then transitions to a 75° transport area. That increased surface area at the 30° angle translates into nearly a 100% increase in capacity relative to a straight 75-degree screen installation.

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FIGURE 4-4: FSM ALPHA BETA PERFORATED SCREEN



Additional technical details of the proposed 6 mm Saveco FSM Alpha Beta screens are included in **Appendix C**. The screen shall each include a common washing compactor along with associated controls.

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4.5.1.3 Evaluation Matrix for Comparison of Screens

An evaluation matrix was developed to compare the two alternatives for the screens and is presented in **Table 4-3**.

TABLE 4-3: EVALUATION MATRIX FOR SCREEN COMPARISON

Alternative	Description	Capital Costs	O&M Costs	Flow Capacity	Capture Rate	Total
1	Hydro-Dyne Bull Shark Through Flowscreen	3	3	3	5	14
2	Saveco FSM® Alpha Beta Perforated Screen	3	3	5	4	15

Evaluation Criteria: The Scoring Scale is from 1 to 5, with 5 being the best score (highly preferred) of category and 1 being the lowest score (less preferred). The evaluation matrix considers the following categories:

a. Capital Costs – This includes equipment costs.
b. O&M Costs – This compares the annual O&M costs. Assumed to be similar for both alternatives.
c. Flow Capacity – This compares the ability of screens to handle flows when installed within existing channels. This is critical under wet weather flow conditions.
d. Capture Rate – this compares the screen sizes between the two alternatives.

Based on the above table, Alternative 2- Saveco FSM® Alpha Beta Perforated Screen is recommended for this project.

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4.6 Equalization Basin

The treatment plant design utilizes existing structures to provide aeration and some flow equalization capacity. The two basins have a detention volume of 199,000 gallons. This represents 7% of the plant's rated capacity and 10% of current annual average flow; hydraulic retention time at 3.0 MGD is 96 minutes. The utilization of these basins reduces peak flows by roughly 10%. If peak flows occur over an 8-hour period, these basins will attenuate the plant flow rate from 3.0 ADF to 2.7 ADF. This helps improve plant performance by reducing the magnitude of flow fluctuation experienced throughout the day.

The volume available to equalize flow in the equalization basin has diminished throughout the operation of the plant by means of grit and organic material deposition on the bottom of the tank. This design details the draining of the tank and removal of all materials contained therein.

To address the EQ basin mixing, needed to keep grit and organic matter from settling, two alternatives were evaluated including:

- Alternative 1 – Repair/Replace in kind of the existing coarse air diffuser system
- Alternative 2 – Installation of new Jet Aspiration Mixing System

4.6.1.1 Alternative 1 – Repair/Replace in Kind Existing Coarse Air Diffuser System

While the tank is drained the contractor is to inspect all air piping and diffusers for deterioration and damage, the contractor shall replace or repair internal equipment of this basin as necessary. It is assumed that the air diffusers will be replaced in kind as part of this project. The estimated cost for replacement of coarse air diffuser system is approximately $100,000.

Out of the three (3) air blowers dedicated for EQ basins/Sludge holding tank, only two (2) blowers are currently operational. The remaining operational blowers have currently reached the end of its useful life and may soon need replacement to keep the current mode of operation. Though not part of this project, the cost of new blower to replace the non-operational blower is estimated to be $400,000. A PD blower with VFD was considered as a replacement and technical details are included in **Appendix D**.

4.6.1.2 Alternative 2 - Installation of a New Jet Aspiration Mixing System

This alternative evaluated the installation of a new Jet Aspiration Mixing System after removal of all existing air piping and cleaning (grit and organic matter) of the entire tank.

A Jet Aspiration Mixing System typically consists of a jet aspirator pump (submersible) and basin specific layout of jet nozzles. In passing through the nozzle, the liquid flow increases in velocity. Air is drawn into the low-pressure zone in the aspirator and mixes with the liquid in an outer nozzle, forcing oxygen to transfer into solution. The jet plume then discharges through the liquid into the basin and mixes the oxygenated liquid in the plume with the bulk of the basin liquid, thereby eliminating the need for any

external blowers. **Appendix E** includes general information regarding jet aspiration mixing and the design specific to this PDR.

It is noted that the existing blowers can continue to provide air to sludge holding tank or a smaller dedicated blower can be considered in the future for the sludge holding tank. This will result in significant energy savings. A life cycle cost analysis for the blowers was not performed.

4.6.1.3 Present Worth Cost Comparison for Alternative 1 vs Alternative 2

As described above, both the alternatives being evaluated for the EQ basin mixing have potential impacts on other WWTP components which are not part of the proposed improvements for this project. To provide a full picture, a present worth cost comparison for Alternative 1 vs Alternative 2 was performed within a 15-year time frame.

TABLE 4-4: PRESENT WORTH COST COMPARISON FOR ALTERNATIVE 1 VS ALTERNATIVE 2

Parameter	Jet Aspiration Mixing System	Replacement of Blowers + EQ Basin Aeration System
Capital Cost (Equipment + Controls)	$250,000	$750,000[1]
New Blower (Sludge Holding Tank)[2]	$200,000	-
Annual O&M (5% of Capital Cost)	$22,500	$37,500
Interest (i)	3%	3%
Time Period	15 years	15 years
Present Worth	**$718,604**	**$1,197,673**

1. Includes new coarse air diffuser system and replacement of at least two (2) blowers within next 2 years
2. Not needed for Jet Aspiration Mixing System. Assumes a smaller blower dedicated for Sludge holding tank air requirements and no requirement for current three (3) blowers.

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4.6.1.4 Evaluation Matrix for Alternative 1 vs Alternative 2

An evaluation matrix was developed to compare the two alternatives for the EQ Basin mixing and is presented in **Table 4-5**.

TABLE 4-5: EVALUATION MATRIX FOR ALTERNATIVE 1 VS ALTERNATIVE 2

Alternatives	Capital Cost	Annual O&M	Present Worth Cost (15 years)	Total
Alternative 1 – Repair/Replace in Kind Existing Coarse Air Diffuser System	5	3	1	9
Alternative 2 – Installation of New Jet Aspiration Mixing System	3	5	5	13

Evaluation Criteria: The Scoring Scale is from 1 to 5, with 5 being the best score (highly preferred) of category and 1 being the lowest score (less preferred).

Based on the above table, Alternative 2 – Installation of new Jet Aspiration Mixing System is recommended for EQ Basin Mixing.

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4.7 Influent Pumping

Flow is pumped from the EQ basin to the Orbal units utilizing three (3) 2,700 gpm variable speed dry pit submersible pumps. Pump sizes were selected to allow peak hour flow demands to be conveyed with one pump out of service leaving two duty pumps. The existing peak hour flow of 7.5 MGD split between two duty pumps means each pump can flow 2,604 gpm. Each pump is designed to flow 2,700 gpm with a total dynamic head (TDH) of 17 ft.

No improvements are proposed as part of this project.

4.8 Biological Treatment Through Orbal Basins

Advanced wastewater treatment in the City's WWTP is achieved through the Orbal process in its basins. The Orbal process is a continuous flow activated sludge process, which utilizes anoxic treatment within a carrousel and internal recycle to achieve nitrogen and carbonaceous BOD reduction.

The WWTP currently has two Orbal basins (BTU #1 and BTU #2), each designed to treat 1.5 MGD ADF, thereby providing a total design capacity of 3 MGD total. Neither Orbal basin can be taken out of service for maintenance while maintaining Class 1 reliability. The proposed BTU #3 will provide the critically needed Class 1 reliability.

Flow will be divided equally between the existing Orbal units (BTU#1 and BTU #2) and proposed Orbal unit (BTU #3) via new precision valve actuators. REXA valve actuators are proposed to provide precise flow control to each BTU.

4.8.1 Proposed Orbal Basin (BTU #3)

A third 1.5 MGD ADF Orbal Basin (BTU #3) is proposed for the WWTP improvements. The third Orbal Basin will provide the critically needed Class 1 reliability and will allow the WWTP staff to take down one BTU out of service for maintenance. The BTU #3 is designed around the influent wastewater characteristics and required effluent AWT standards as provided in **Table 4-1.** The permit requirements for the WWTP are not expected to change for this project.

The design parameters for the proposed BTU #3 are provided in **Table 4-6.**

TABLE 4-6: ORBAL DESIGN PARAMETERS

Orbal Design Parameters	Value
SRT for Nitrification	8.0 days
Design MLSS Liquid Temp	25 °C
Min MLSS Liquid Temp	18 °C
Orbal Organic Loading Rate	19.52 lb/1,000 ft^3/day
System Organic Loading Rate	19.52 lb/1,000 ft^3/day
MLSS	2,500 mg/L

Sludge Yield	1.01
Total WAS	2,533 lb/day
Overall Alpha	0.95 Disc
Beta	0.98
Mass O_2/Mass BOD Selected	1.09
Submergence Correction Factor	
Altitude Correction Factor	0.98
Total System SRT	8.0 days
RAS Pump Rate	100% of ADF
Nitrate Recycle Pump Rate	400% of ADF
Site Elevation	500 ft

The expected Tank configuration for the proposed BTU #3 is as follows:

- Overall Length (ft) = 129.00
- Overall Width (ft) = 112.00
- Long Axis Straight Length (ft) = 17
- Short Axis Straight Length (ft) = 0
- Center Island Radius (ft) = 5
- Wall Thickness (ft) = 1.00
- Side Water Depth (SWD) (ft) = 12

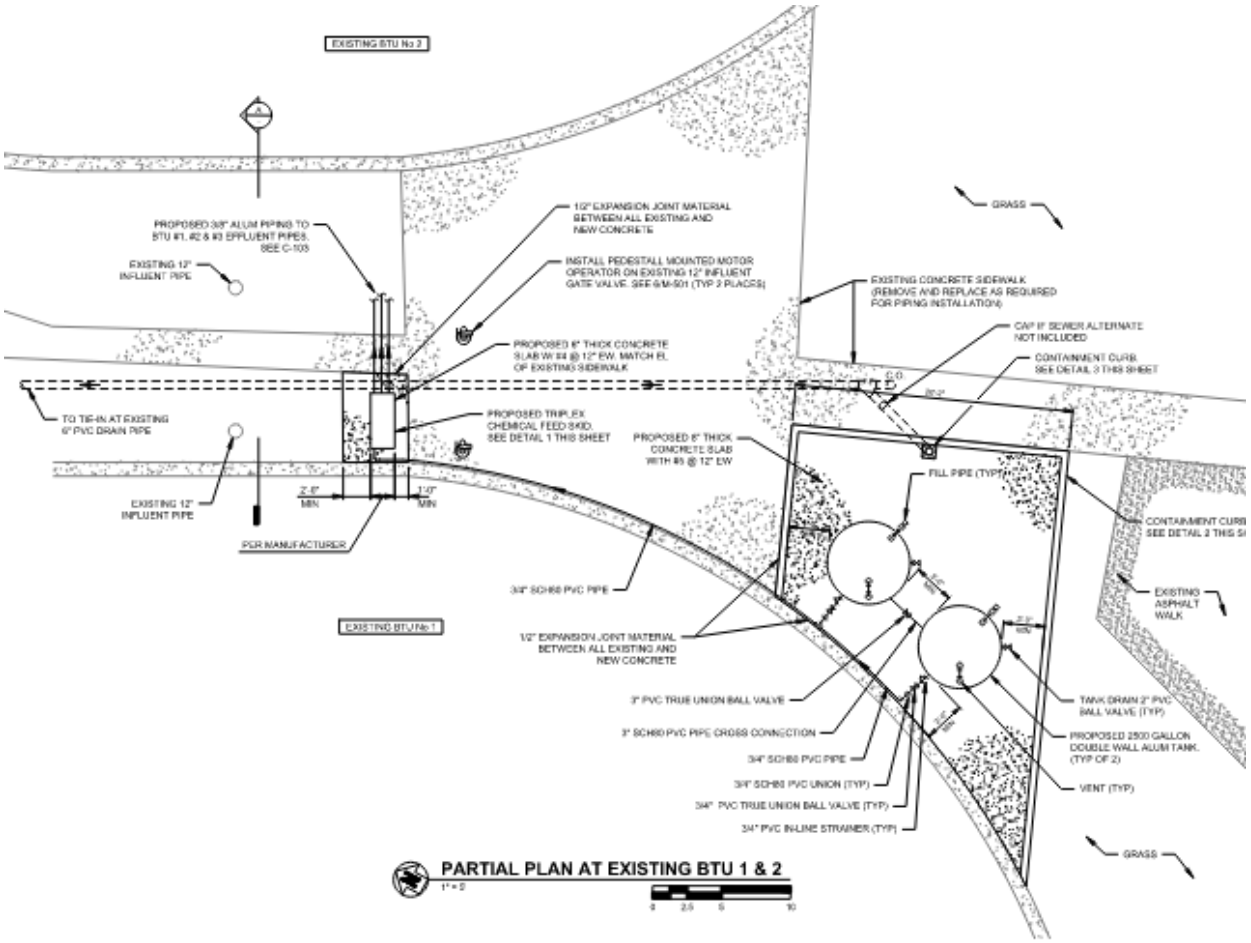
Further technical details regarding the Orbal basin process data are found in **Appendix F.**

4.8.2 Chemical Feed System

A new chemical feed system is proposed as part of this project. The existing chemical storage/feed system are located by the headworks of the plant. This improvement involves building a new chemical feed system by the three Orbal basins. **Figure 4-5** shows the new chemical feed system.

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FIGURE 4-5: NEW CHEMICAL FEED SYSTEM



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49 Secondary Clarifiers

Solids separation for the activated sludge process is currently provided via sedimentation in three (3), 75 ft diameter circular clarifiers. Each of the existing clarifiers has a rated capacity of 1.2 MGD (AADF).

The biological treatment calculations require a return sludge flow rate equal to influent flows, 3.0 MGD. In order to meet this pumping requirement with one pump out of service the pumps should have a capacity greater than 1,042 gpm. The existing RAS pumps, serving BTU #1 and BTU #2 are three (3) dry pit submersible pumps each capable of pumping 2,200 gpm at 12 ft TDH. The WAS pumping requirement was calculated as part of the biological design to be 84 gpm, the two (2) existing pumps are dry pit submersible pumps each capable of pumping 125 gpm at 22 ft TDH.

The existing Clarifier #3 will be connected to proposed BTU #3. The existing RAS and WAS pumping station will serve the BTU #3 and are already designed to handle the BTU #3 requirements. This pump station includes two (2) RAS pumps and two (2) WAS pumps. RAS pumping requirements for this clarifier were calculated to be 1.5 MGD = 1,041 gpm. This flow will be conveyed by two (2) RAS pumps each capable of pumping 750 gpm at 20 ft TDH. The WAS pumps have a capacity of 125 gpm at 22 ft TDH.

The City has experienced significant flow issues from the existing BTUs to the secondary clarifiers. Without the additional capacity from the 3rd BTU, the City cannot take a clarifier offline to investigate the issue. It is recommended that the influent lines from the BTUs to the secondary clarifiers be televised and cleaned.

4.10 Filtration

The City's WWTP currently has two (2) automatic backwashing sand filter basins, rated at 1.5 MGD each, and two (2) Kruger Hydrotech discfilters rated at 0.6 MGD each. The WWTP has a total of 4.2 MGD of filtration capacity.

4.10.1 Sand Filter Alternatives

The existing sand filters have several items that are in poor condition and need to be replaced or rehabilitated.

4.10.1.1 Alternative 1 – Rehabilitate Existing Sand Filters and Kruger Discfilters

The sand filter and discfilter rehabilitation items include:

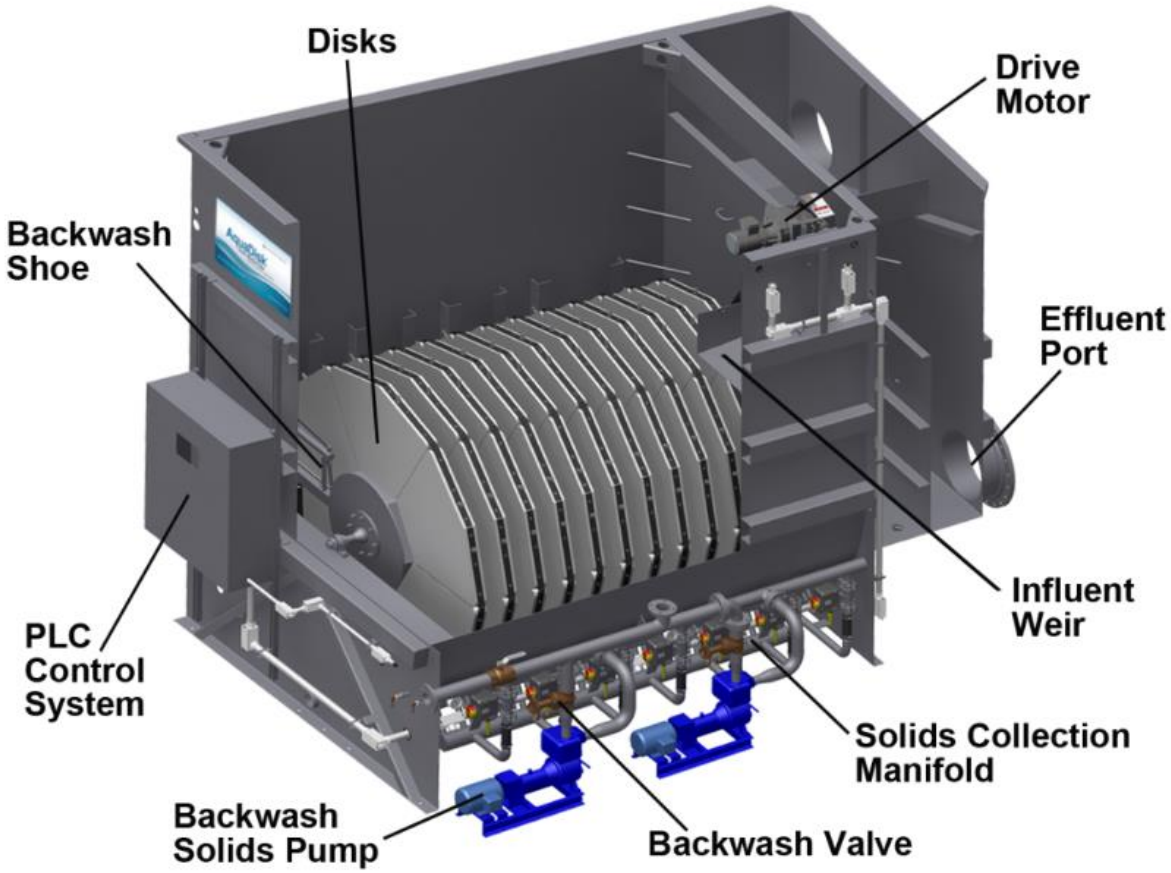
- Replace filter media
- Replace filter tube drains
- Replace all equipment on travelling bridges (control panels, backwash pumps, control wiring, and rollers). Handrails, grating, and main bridge structure are to remain and be re-used.
- Replace festoon wire system and supports
- Repair eroded concrete at influent end of filter and provide protective coating
- Replace influent manual sluice gates with hand-wheel actuated gates
- Replace influent chamber drain plug and valves with gate valves
- Replace cloth media in Kruger discfilters
- Rehabilitate existing motors, rotating equipment, and backwash pumps within existing discfilters

4.10.1.2 Alternative 2 – Abandon Existing Sandfilters and Replace Kruger Discfilters with (2) 2.0 MGD Aqua-Aerobic AquaDisk Filters

This alternative involves abandoning the sand filters and replacing the Kruger filters with Aqua-Aerobic cloth media disk filters. The Aqua-Aerobic cloth media disk filters provide high level tertiary filtration. Filtration follows an outside-in path where filtrate is collected inside the disks. There are no moving parts during filtration. Due to the cost savings while maintaining 4 MGD capacity, this is the recommended alternative. **Figure 4-6** displays a typical AquaDisk cloth media filter configuration.

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FIGURE 4-6: AQUADISK CLOTH MEDIA FILTER

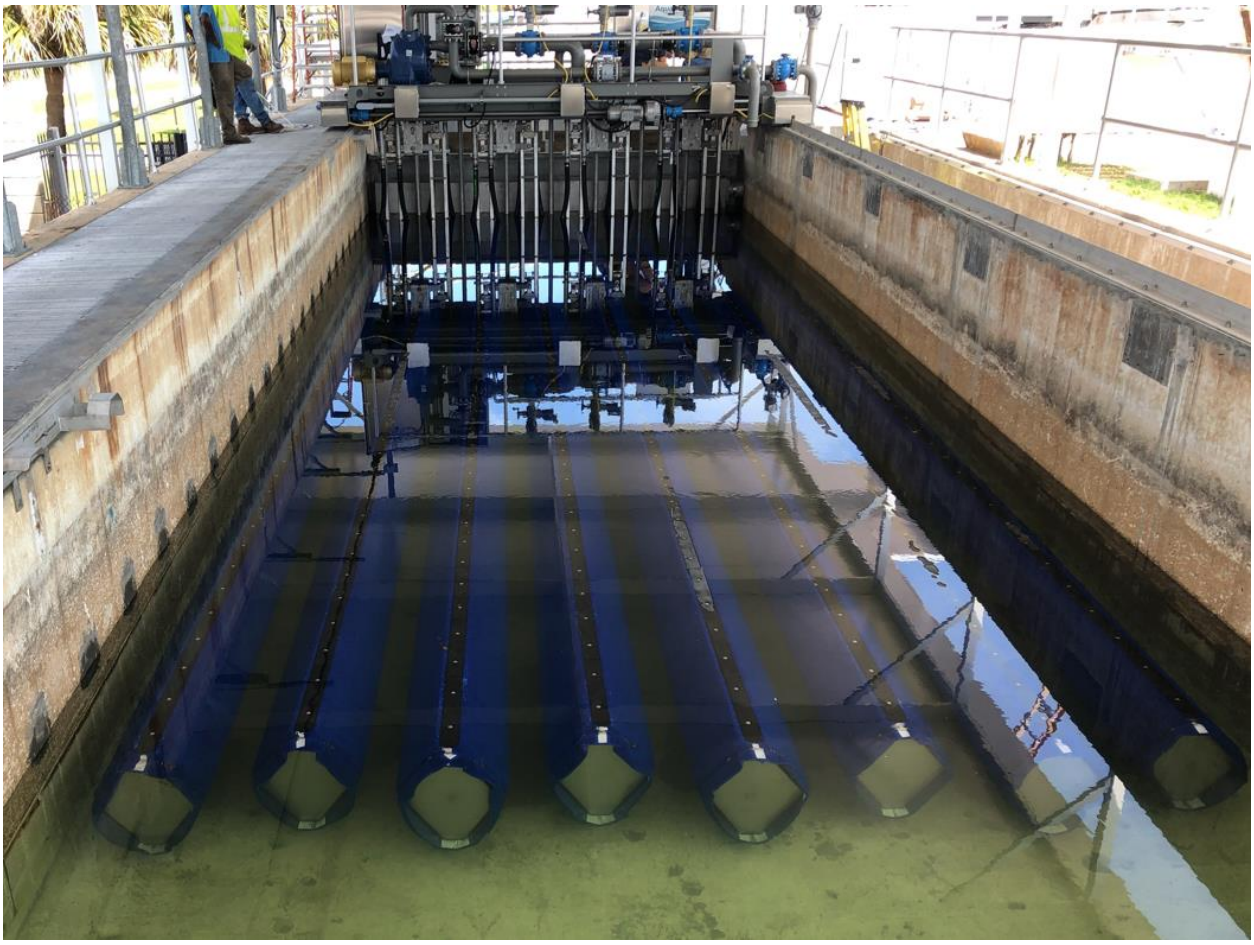


4.10.1.1 Alternative 3 – Retrofit Existing Sand Filters with Aqua-Aerobic AquaDiamond Cloth Media Filters

This alternative involves retrofitting the existing sand filter basins with Aqua-Aerobic AquaDiamond cloth media filters. Each filter basin can fit six (6) 50' long AquaDiamond filters. This provides an average design flow capacity of 4.48 MGD and a max design flow of 11.20 MGD. This capacity will be more than sufficient for significant peak flow events. **Figure 4-7** displays recently installed AquaDiamonds for a sand filter retrofit project.

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FIGURE 4-7: AQUADIAMOND INSTALLATION



4.10.2 Cost Evaluation

Table 4-7 below displays the cost comparison of the three (3) alternatives.

TABLE 4-7: FILTRATION ALTERNATIVES COST EVALUATION

Alternative	Unit	Unit Cost	Total Cost
Alternative 1 – Rehab Existing Sand and Disc Filters	LS	$2,600,000	$2,600,000
Alternative 2 – Abandon Sand Filters and Replace Kruger Discfilters with AquaDisk Filters	LS	$1,500,000	$1,500,000
Alternative 3 – Retrofit Sand Filters with AquaDiamond Filters	LS	$4,000,000	$4,000,000

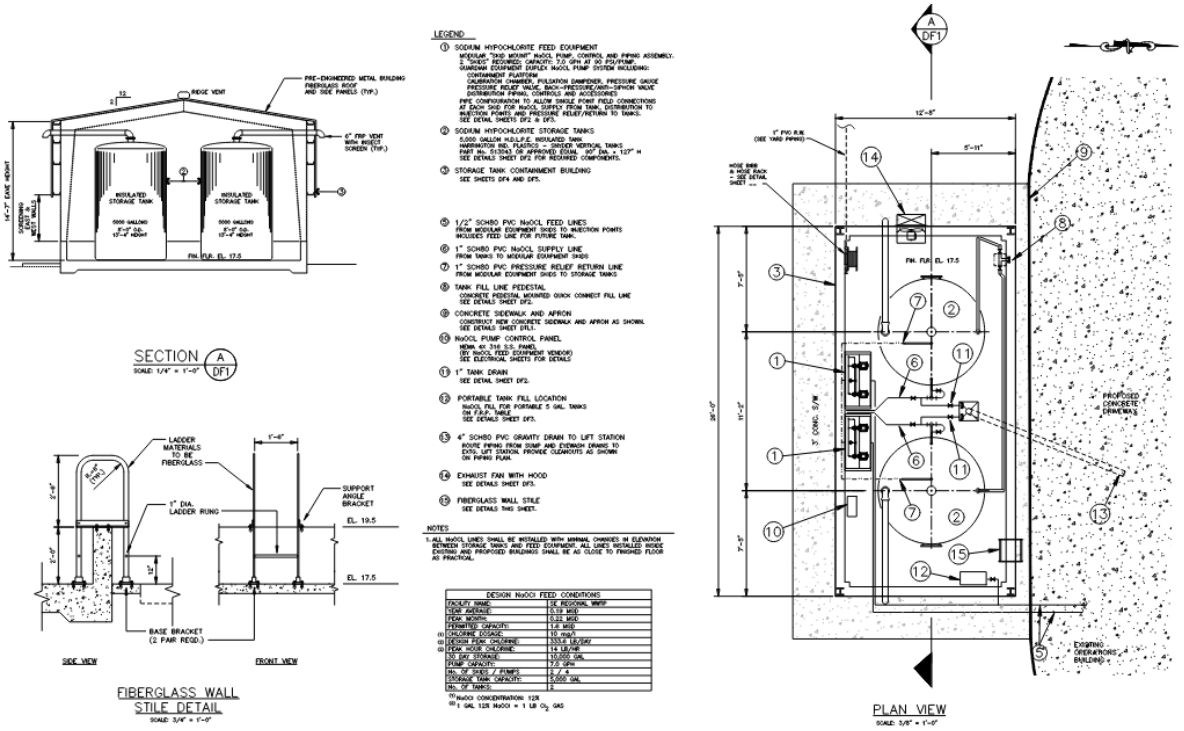
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4.11 Disinfection/Re-Aeration

The existing chlorine contact basin will be utilized in this design. The current chlorine contact basin has a rated capacity of 3.0 MGD. Process water flows from the chlorine contact basin into a re-aeration basin. Diffused air is available to elevate soluble dissolved oxygen levels. The re-aeration chamber volume is 48,590 gallons providing a hydraulic retention time of 25 minutes at 3.0 MGD.

The City has historically utilized chlorine gas for disinfection. As part of the WWTP improvements, it is recommended the City switch to liquid sodium hypochlorite for disinfection. This will require a new chemical storage structure with two (2) 4,000-gallon sodium hypochlorite double walled tanks. **Figure 4-8** displays the liquid chlorine storage structure and chemical feed skid.

FIGURE 4-8: LIQUID CHLORINE STORAGE AND CHEMICAL FEED



With a transition to liquid chlorine, the City will also need to utilize liquid sodium bisulfite for de-chlorination. The existing de-chlorination building and totes will be used to house the liquid sodium bisulfite.

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4.12 Effluent Transfer and Disposal

Effluent disposal is currently accomplished via reuse water sold to residential and commercial customers for irrigation purposes. The current distribution system is designed to be easily expanded to dispose of future flow increases as required.

All effluent not transferred to reuse is chemically de-chlorinated onsite prior to disposal in the Halifax River. The effluent outfall is a 16-inch diameter pipe and is currently permitted for discharge.

The Halifax River outfall has a permitted capacity of 2.4 MGD. This design does not require any additional flow disposed of in the river. All additional flow generated by the facility will be disposed of through the public access reuse system. Current reuse demand is approximately 0.5 MGD which is the proposed permitted capacity added to this facility. Also, a reuse interconnect with the City of Ormond Beach will allow Holly Hill to dispose of an additional 0.3 MGD.

New submersible effluent transfer pumps will be added for the enhanced reclaimed water storage and effluent management facilities. In addition to new transfer pumps, a new aeration/mixing system for the re-aeration basin is recommended. Similar to the proposed EQ basin improvements, the new mixing system will be a jet aspirating mixing system utilizing submersible pumps.

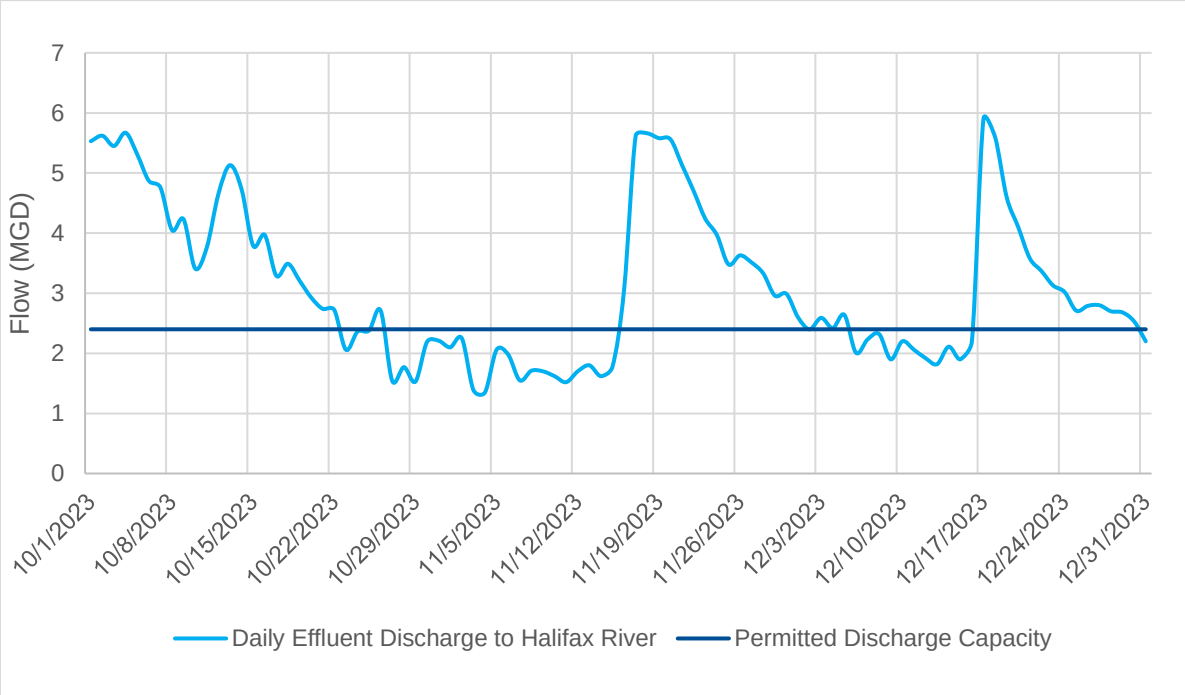
Additional reclaimed water storage and high service pumping will be added to enhance effluent management capabilities during hurricanes and extreme events. These improvements are further described in the subsequent section.

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4.13 Effluent Storage and Reclaimed Water Pumping

There is currently one (1) 0.5 MG reclaimed water ground storage tank at the WWTP. This tank has inadequate storage and causes the City to discharge a significant portion of their reclaimed water production to the Halifax River. An additional reclaimed water ground storage tank is proposed as part of the WWTP modifications and improvements provided in this Facility Plan. Additional reclaimed water storage is fundamental in the resiliency of the City's WWTP. Having the ability to transfer more reclaimed water to storage will help avoid the plant upstream from backing up and creating overflow in the BNRs. **Figure 4-9** displays the daily discharge flow to the Halifax River during the months of October 2023 – December 2023.

FIGURE 4-9: EFFLUENT DISCHARGE TO HALIFAX RIVER



As displayed by the severe peaks in the figure above, the City is greatly impacted by wet weather events. With limited public access reuse demand during these events, the City has no choice but to discharge a majority of their effluent to the Halifax River.

There are three (3) alternatives being evaluated for a new ground storage tank:

1. 2.0 MG Ground Storage Tank
2. 3.0 MG Ground Storage Tank
3. No Action

4.13.1 Alternative 1 - 2.0 MG Ground Storage Tank

This alternative involves a new 2.0 MG reclaimed water ground storage tank. This would give the City 2.5 MG of on-site reclaimed water storage. The additional 2.0 MG of storage will give the City freedom to hold reclaimed water during the day when there is less demand in the public access

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reuse distribution system. The two onsite storage tanks would be interconnected, and the 2.0 MG tank would gravity feed the existing 0.5 MG tank. The existing tank would act as a "day tank" while effluent from the chlorine contact chamber would be pumped to the new 2.0 MG tank. A 2.0 MG reclaimed water tank would help mitigate discharging to the Halifax River on most occasions, the City would still need to discharge to the river during significant wet-weather events. Due to the cost savings compared to a 3.0 MG tank, this is the recommended alternative.

4.13.2 Alternative 2 - 3.0 MG Ground Storage Tank

This alternative involves a new 3.0 MG reclaimed water ground storage tank. This would give the City 3.5 MG of on-site reclaimed water storage. Like the first alternative, this additional storage will mitigate the need to discharge to the Halifax River. While the additional storage still won't be able to fully handle the significant weather events where flows can exceed 6.0 MGD, it provides more storage than alternative 1. With an emphasis on cost savings, the larger tank does not provide enough storage to justify the cost increase.

4.13.3 Alternative 3 – No Action

This alternative involves not adding any additional reclaimed water storage. With an initiative to mitigate discharging to the Halifax River, this alternative is not being considered.

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

4.14 Residuals Management

Holly Hill operates one aerobic sludge holding tank. Plant operators utilize the mixing energy of the diffusers to mix waste activated sludge with lime sludge from the adjacent water treatment plant. The combined sludge is low in volatile solids content and fecal coliform levels. This sludge is classified as class “B” sludge.

The City is currently investigating an alternate method for disposal of lime sludge from the water treatment plant. This method would involve eliminating the need to mix the lime sludge with the waste activated sludge. Under the assumption there will no longer be lime sludge introduced into the aerobic holding tank, it is recommended that the aeration system be replaced with course air utilizing positive displacement blowers.

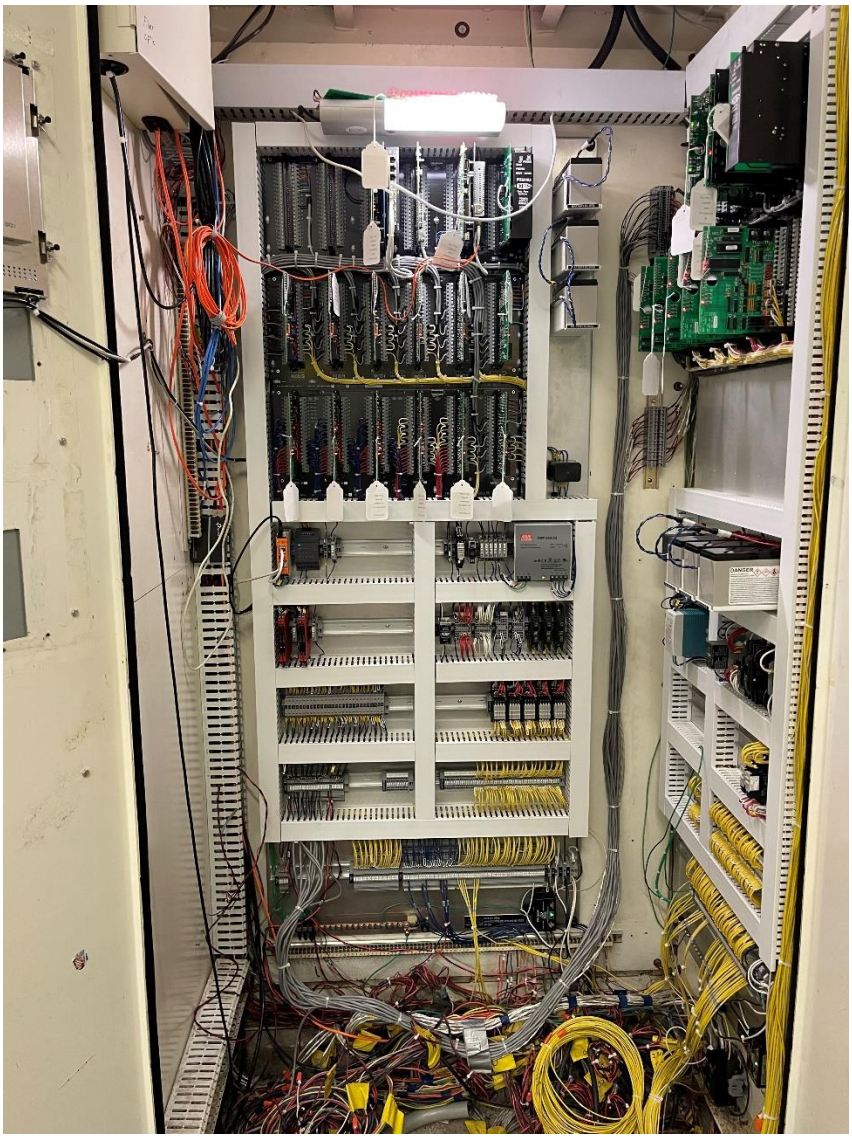
The mixing and aeration system for the aerobic sludge holding tank is in poor condition and requires replacement.

Two (2) belt filter presses are used to dewater the combined sludge. Each press is capable of dewatering 4,000 pounds per hour of sludge, which is much more than will be produced by the upgraded plant. The dewatered sludge has a solids concentration of 14-16%. The combined dewatered sludge is land applied by a contract sludge management company, H & H Liquid Sludge Disposal, Inc.

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

4.1.5 Electrical Automation and Resiliency

Modifications to the existing electrical room are recommended to improve overall plant automation and the ability to operate during extreme events without subjecting operators to the weather. Proposed upgrades will also enable remote monitoring of the facility. The modifications will include new programmable logic controller (PLC) equipment and digital communication modules within existing VFD's and motor starters. This work will also enable automated and remote control from the CTU and/or remote access from offsite locations via a secure VPN or alternative means of communication. The image below displays the state of the existing main control panel (MCP) in the electrical room. This panel will be retrofit with new PLC equipment and fiber optic communication modules to enable digital control of new and existing VFD equipment in the electrical room. It will also enable monitoring of field equipment that will be connected to the network.



In addition to the electrical automation modifications, proposed upgrades include floodproofing the electrical room. The floodproofing improvements include constructing a coffer dam and floodgate at the

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

electrical room entryway. Within the coffer dam, a sump pump will be installed so the area always stays dry. The cofferdam will have removable slide gates to enable personnel access while protecting the electrical control room from flooding and storm surge.

The automation and floodproofing improvements will make the City's WRF more resilient against significant weather events.

4.16 Miscellaneous Improvements

The following miscellaneous improvements will be included in this project:

- Addition of two (2) isolation valves on the influent forcemains to the WWTP as shown in **Figure 4-1**.
- All required instrumentation and controls (I&C) systems to enable remote monitoring and control of primary plant systems and processes.
- All necessary required electrical work for the proposed improvements. Floodproofing for electrical controls and emergency power.
- All necessary yard piping changes/relocations for the proposed improvements

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

5. Engineer's Opinion of Probable Construction Cost

5.1 3rd BTU and Headworks Improvements

The cost estimate for the 3rd BTU and Headworks Modifications identified in this Facility Plan is summarized in **Table 5-1.**

TABLE 5-1: 3RD BTU AND HEADWORKS IMPROVEMENTS COST ESTIMATE

Item	Description	Qty	Unit	Unit Cost	Total
1	Demolition	1	LS	$60,000	$60,000
2	Sitework	1	LS	$450,000	$450,000
3	Mechanical (Pipes, Valves, Fittings)	1	LS	$1,310,000	$1,310,000
4	Precision Valve Actuators	3	EA	$60,000	$180,000
5	3rd BTU Orbal Basin Structure	1	LS	$4,100,000	$4,100,000
6	3rd BTU Orbal Basin Mechanical and Equipment	1	LS	$600,000	$600,000
7	Internal Recycle Pump	1	EA	$110,000	$110,000
8	Miscellaneous Metals	1	LS	$30,000	$30,000
9	Flow Meters at Existing BTUs	2	EA	$25,000	$50,000
10	Electrical	1	LS	$650,000	$650,000
11	Electrical Automation and Resiliency	1	LS	$250,000	$250,000
12	Unsuitable Materials	2700	CY	$30	$81,000
13	Equalization Basin Modifications	1	LS	$720,000	$720,000
14	Influent Structure Modifications	1	LS	$1,000,000	$1,000,000
15	New Chemical Feed System	1	LS	$170,000	$170,000
16	Chemical Storage Gravity Drain	1	LS	$20,000	$20,000
17	Liquid Chlorine Conversion	1	LS	$250,000	$250,000
18	Filtration Upgrades	1	LS	$1,500,000	$1,500,000
	TOTAL				**$11,531,000**

5.2 Effluent Management Facilities Cost Estimate

The cost estimate for the Effluent Management Facilities project identified in this Facility Plan is displayed in **Table 5-2**.

TABLE 5-2: EFFLUENT MANAGEMENT FACILITIES COST ESTIMATE

Item	Description	Qty	Unit	Unit Cost	Total
1	Submersible Transfer Pumps	1	LS	$200,000	$200,000
2	2.0 MG Ground Storage Tank	1	LS	$3,000,000	$3,000,000
3	High Service Pump Station Modifications	1	LS	$250,000	$250,000
	TOTAL				**$3,450,000**

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

6. Capital Finance Plan

The Florida Department of Environmental Protection's (FDEP) SRF is expected to be the financing source for the project. The CFP can be found in **Appendix G.**

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

Appendix A – DEP SSO Reports

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

The City of Holly Hill

John Dally <jdally@hollyhillfl.org>

DEP Incident ID 16850

3 messages

John Dally <jdally@hollyhillfl.org> Mon, Oct 3, 2022 at 2:27 PM
To: "Farrell, Jenny E." <Jenny.E.Farrell@dep.state.fl.us>, DEP_CD@dep.state.fl.us

Jenny, the intermittent leakage from the equalization tank ended at 1835 hrs.- 0/9/30/22. The cause of the leakage was the excessive rain (20 inches) and flooding experienced in the city as a result of Hurricane IAN. Contaminations appears to be immediately adjacent to the EQ tank and consist mainly of some floatables. The amount of water lost is difficult to ascertain but would appear to be about 4000 gallons which soaked into the ground. No water bodies were impacted. Facility personnel are removing the floatables from the area around the EQ tank and will then apply sodium hypochlorite to the area.

If you have any questions do not hesitate to contact me.

--
John R. Dally, Chief WWTP Operator
Department of Public Works
City of Holly Hill
453 LPGA Boulevard
Holly Hill, FL 32117
386-248-9463 (office)
386-334-9801 (mobile)
386-248-9499 (fax)
jdally@hollyhillfl.org
www.hollyhillfl.org

Farrell, Jenny E. <Jenny.E.Farrell@dep.state.fl.us> Mon, Oct 3, 2022 at 5:25 PM
To: John Dally <jdally@hollyhillfl.org>

Thank you for this notification. Jenny

From: John Dally <jdally@hollyhillfl.org>
Sent: Monday, October 3, 2022 2:28 PM
To: Farrell, Jenny E. <Jenny.E.Farrell@dep.state.fl.us>; DEP_CD <DEP_CD@dep.state.fl.us>
Subject: DEP Incident ID 16850

EXTERNAL MESSAGE
This email originated outside of DEP. Please use caution when opening attachments, clicking links, or responding to this email.

Jenny, the intermittent leakage from the equalization tank ended at 1835 hrs.- 0/9/30/22. The cause of the leakage was the excessive rain (20 inches) and flooding experienced in the city as a result of Hurricane IAN. Contaminations appears to be immediately adjacent to the EQ tank and consist mainly of some floatables. The amount of water lost is difficult to ascertain but would appear to be about 4000 gallons which soaked into the ground. No water bodies were impacted. Facility personnel are removing the floatables from the area around the EQ tank and will then apply sodium hypochlorite to the area.

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

If you have any questions do not hesitate to contact me.

--

John R. Dally, Chief WWTP Operator

Department of Public Works

City of Holly Hill

453 LPGA Boulevard

Holly Hill, FL 32117

386-248-9463 (office)

386-334-9801 (mobile)

386-248-9499 (fax)

jdally@hollyhillfl.org

www.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 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.



Customer Service Survey

John Dally <jdally@hollyhillfl.org> Thu, Oct 6, 2022 at 10:20 AM
To: Antoine Khoury <akhoury@hollyhillfl.org>

Email to FDEP about EQ tank

---------- Forwarded message ---------
From: **John Dally** <jdally@hollyhillfl.org>
Date: Mon, Oct 3, 2022 at 2:27 PM
Subject: DEP Incident ID 16850
To: Farrell, Jenny E. <Jenny.E.Farrell@dep.state.fl.us>, <DEP_CD@dep.state.fl.us>

Jenny, the intermittent leakage from the equalization tank ended at 1835 hrs.- 0/9/30/22. The cause of the leakage was the excessive rain (20 inches) and flooding experienced in the city as a result of Hurricane IAN. Contaminations appears to be immediately adjacent to the EQ tank and consist mainly of some floatables. The amount of water lost is difficult to ascertain but would appear to be about 4000 gallons which soaked into the ground. No water bodies were impacted. Facility personnel are removing the floatables from the area around the EQ tank and will then apply sodium hypochlorite to the area.

If you have any questions do not hesitate to contact me.

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

--
John R. Dally, Chief WWTP Operator
Department of Public Works
City of Holly Hill
453 LPGA Boulevard
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--
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The City of Holly Hill

John Dally <jdally@hollyhillfl.org>

SSO Report - Volusia - SWO ID: 2023-8150

1 message

no-reply@dep.state.fl.us <no-reply@dep.state.fl.us> Mon, Oct 2, 2023 at 10:49 AM
To: jdally@hollyhillfl.org
Cc: jdally@hollyhillfl.org, Bob.Vincent@flhealth.gov, DEP_CD@dep.state.fl.us, David.Polk@flhealth.gov, Eric.Maday@flhealth.gov, Jeanine.robinson@flhealth.gov, Robert.Maglievaz@flhealth.gov, SSO_Reports@dep.state.fl.us

DEP Logo

FLORIDA DEPARTMENT OF

Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Ron DeSantis
Governor

Jeanette Nuñez
Lt. Governor

Shawn Hamilton
Secretary

Receipt for Submission

Sanitary Sewer Overflow Reporting

Thank you for submitting a Report of a Sanitary Sewer Spill or Overflow Incident in accordance with 62-620.610 and/or 62-604.550, F.A.C. You have indicated that the incident is on-going or that this is not the final closeout report for this incident, please ensure that you return to the system in the future to close out this incident.

Your DEP Incident ID is **21462**. Please use this ID during any future correspondence with the Department concerning this incident.

Type of Notice: Initial Report
Date of Notice: 10/02/2023

Incident Information
Name of Incident: Rain Event 10-2023
State Watch Office Report Number: 2023-8150
PNP Incident Number:
Start of Incident: 10/01/2023 10:30
End of Incident: 10/01/2023 23:50
Incident Description: After significant rainfall the treatment facility was hydraulically overloaded and resulted in an intermittent leakage from the Equalization tank and Biological Treatment units. Everything was contained onsite immediate adjacent to the treatment tanks and discharge to any water bodies.
Wastewater Type: Untreated
Cause: Extreme Weather
Spill Volume: Unknown
Volume Recovered: 0
Waterbodies Impacted: NA
Clean-up Status: In-progress

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

Clean-up Actions: Applied lime, Washed down area
Agencies Notified:

Incident Location
Address Line 1: 1065 ridgewood ave
Address Line 2: holly hill
Directions:
City: Daytona Beach
State: FL
Zip Code: 32117
County: Volusia
Coordinates (in decimal degrees):
Lat: 29.242920921305046 Long: -81.04731393878996
Other Impacted Counties: Volusia

Facility Information
Facility ID: FL0027677
Facility/Installation Name: Holly Hill, WRF
Operating Entity Name: NA
Address Line 1: 453 Lpga Blvd
Address Line 2:
Facility/System Type: DOMESTIC WASTEWATER
City: Holly Hill
State: FL
Zip Code: 32117

Incident Reported By
Name: John R Dally
Affiliation: Chief WWTP Operator
Phone: (386) 248-9463
Email Address: jdally@hollyhillfl.org
Relationship: Operator of the Facility/Installation

On-Site Contact
Name: John R Dally
Phone: (386) 248-9463
Email Address: jdally@hollyhillfl.org

Florida Department of Environmental Protection



Customer Service Survey

noname
50K

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

After significant rainfall the previous several days the treatment facility was hydraulically overloaded and resulted in an intermittent leakage from the Equalization tank and Biological Treatment units.

At approximately 0600 hrs. 10/01/23 the EQ level started to increase from 5.4 feet at rose to 12.5 feet. The EQ pumps were running at the maximum capacity that the facility could accept. Recycle rates had been previously lower to allow more water to pass through the Biologically Treatment Units. Eventually the recycle rates needed to be increased to prevent the final clarifiers from be overloaded. This resulted in the release of biosolids through the aerator bearing openings. Review of the flow data indicates that approximately 77K gallons was released. Everything was contained onsite immediate adjacent to the treatment tanks and there was no discharge to any water bodies. Cleanup- Very little debris or floatables were found around the EQ basin. Lime was applied around the basin. The biosolids that came out of the BTU's was contained in the area between the two units. This area was also limed and is being removed to the facilities Vac dump pit

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

Appendix B – Hydro-Dyne Bull Shark Through Flowscreen

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

Bull Shark Through Flow Screen Equipment Sizing

HYDRO DYNE ENGINEERING

Tel: 813-818-0777 Fax: 813-818-0770

Project: Holly Hill, FL
Date: 7/14/2022
Rep: TSC-Jacobs-North
By: RH **Checked:** JMB

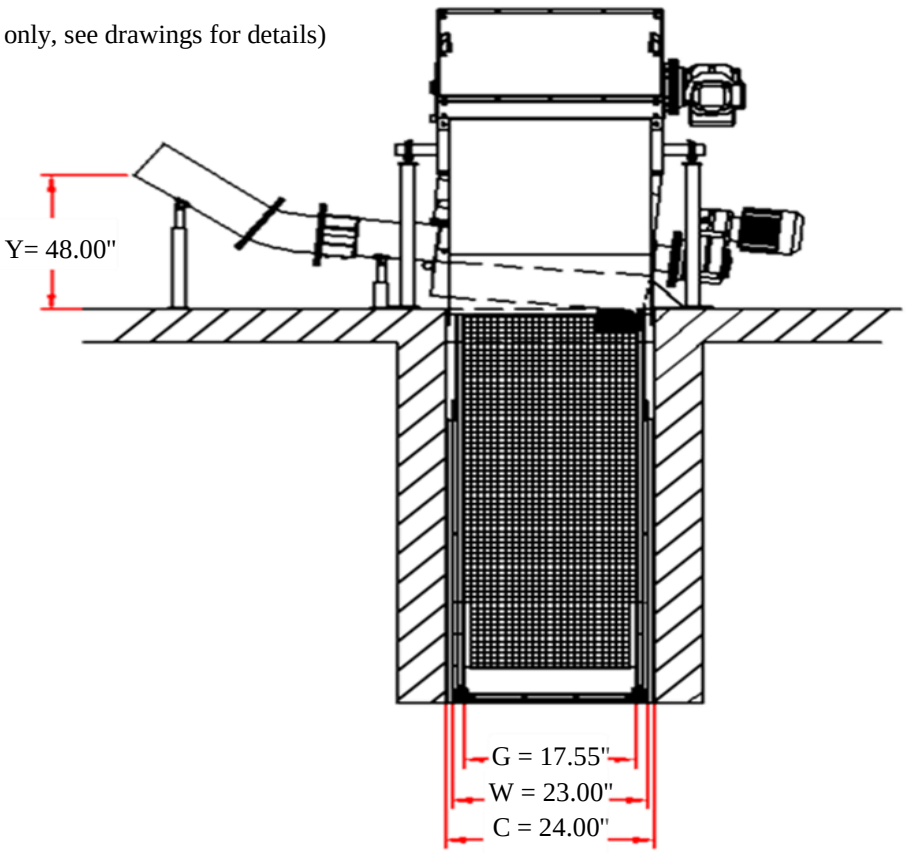
Model # **STR** 23 – 96 – 4 – L

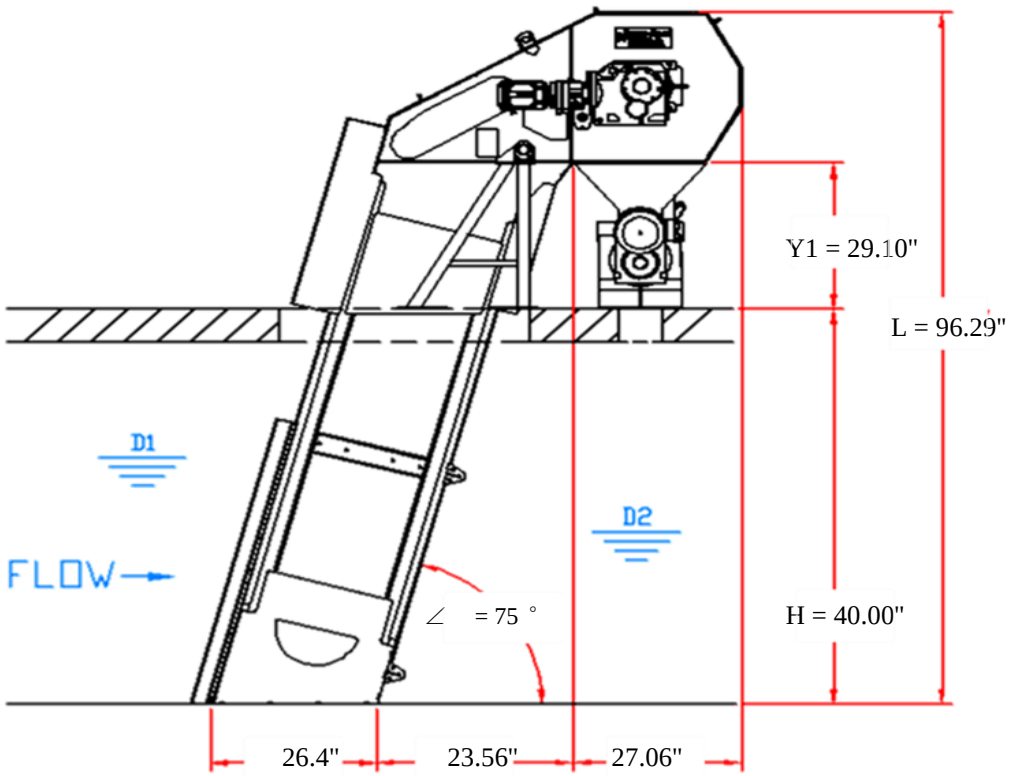
Channel Dimensions:		English Units	SI Units
C	Channel Width	24.00 in	610 mm
H	Channel Height	40.00 in	1016 mm
TC	Height from Grade to Top of Channel	0.00 in	0 mm

Screen Grid Parameters:					
S	Grid Opening Spacing		4 mm		
Obs	Percent of Screen Obstructed	30 %	Hook Link	16	ga
OA_{eff}^{*}	Effective Percent of Grid Opening	41.98 %	Straight Link	16	ga

Equipment Dimensions:		English Units	SI Units
L	Length of Screen	96.29 in	2446 mm
W	Width of Screen	23.00 in	584 mm
G	Width of Grid	17.55 in	446 mm
∠	Screen Angle	75 °	75 °
Y1	Discharge Height from the Screen	29.10 in	739 mm
Y	Discharge Height from the Compactor	48.00 in	1219 mm

(For reference only, see drawings for details)





NOTE: * Effective Percent of Grid Opening = Percent of Grid Opening at 4mm Opening × (1 - Proposed 30% of Screen Obstructed).

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Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for

Bull Shark Through Flow Screen Hydraulic Performance

HYDRO DYNE ENGINEERING

Tel: 813-818-0777 Fax: 813-818-0770

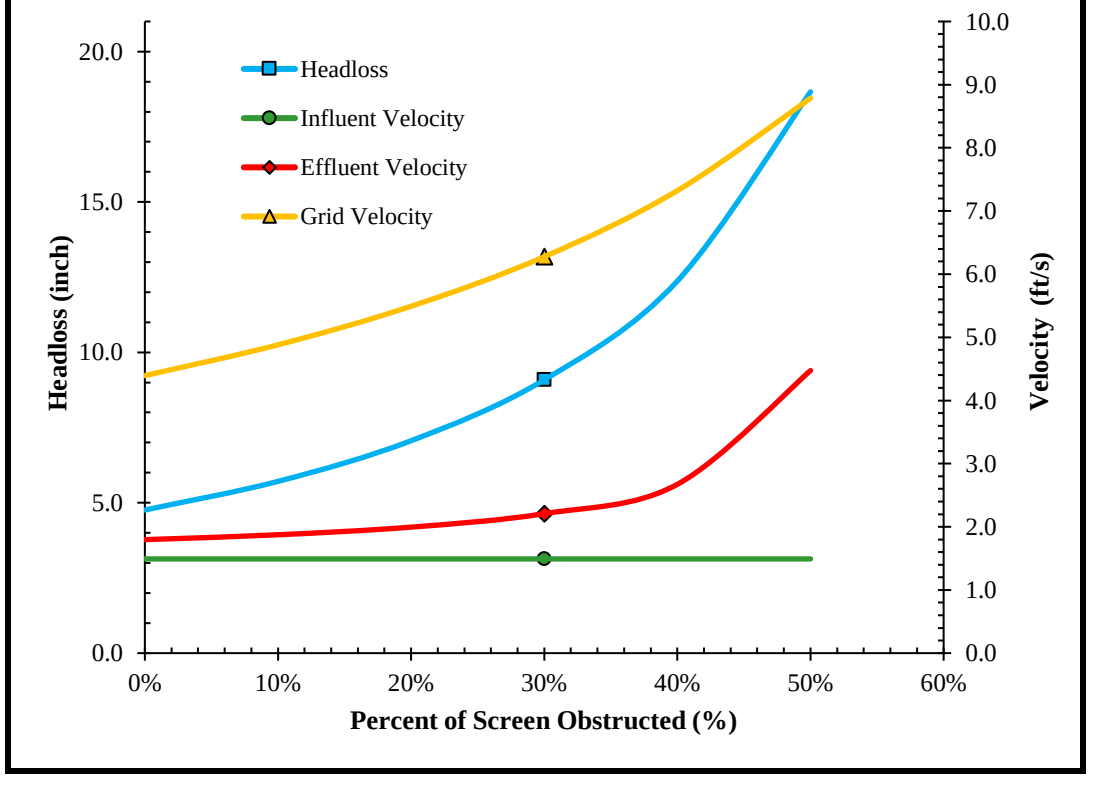
Project: Holly Hill, FL
Date: 7/14/2022
Rep: TSC-Jacobs-North
By: RH **Checked:** JMB

Model # **STR** 23 – 96 – 4 – L

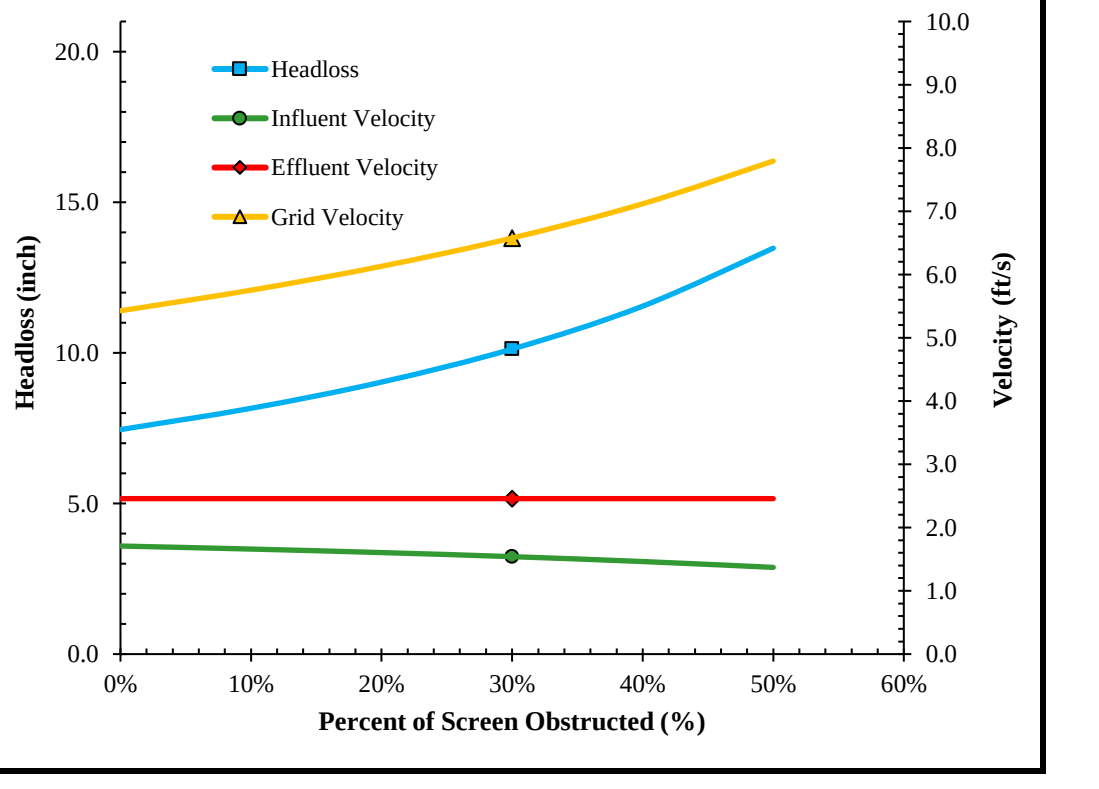
Fixed D_1 Condition @ 30% Obs		English Units		SI Units	
Q	Flow Rate	4.50 MGD	3125 gpm	197 L/s	17034 m^3/d
D_1	Upstream Water Depth	28.00 in		711 mm	
D_2	Downstream Water Depth	18.91 in		480 mm	
ΔH	Total Headloss	9.09 in		231 mm	
F	Freeboard	12.00 in		305 mm	
V_1	Influent Channel Velocity	1.49 ft/s		0.45 m/s	
V_G	Velocity Through Grid	6.28 ft/s		1.91 m/s	
V_2	Effluent Channel Velocity	2.21 ft/s		0.67 m/s	

Fixed D_2 Condition @ 30% Obs		English Units		SI Units	
Q	Flow Rate	4.50 MGD	3125 gpm	197 L/s	17034 m^3/d
D_1	Upstream Water Depth	27.13 in		689 mm	
D_2	Downstream Water Depth	17.00 in		432 mm	
ΔH	Total Headloss	10.13 in		257 mm	
F	Freeboard	12.87 in		327 mm	
V_1	Influent Channel Velocity	1.54 ft/s		0.47 m/s	
V_G	Velocity Through Grid	6.58 ft/s		2.01 m/s	
V_2	Effluent Channel Velocity	2.46 ft/s		0.75 m/s	

Screen Performance VS. Screen Blocking at Fixed D_1



Screen Performance VS. Screen Blocking at Fixed D_2



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Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for

HYDR DYNE® ENGINEERING

Designed to Protect. Built to Perform.™

City, ST Holly Hill, FL

Date August 17th, 2022

Mechanical Screen System

Quantity	Screen Type	Grid Type	Grid Opening	Model Number
1 EA	Bull Shark Through Flow Screen	Stainless Steel Laced Links	4mm	STR 23-96-4L

Motor Horsepower	Wash water requirements (EA)			
0.5 HP	11	GPM	60	PSI

Stainless Steel
304SS

Screening Handling System

Quantity	Screening Handling Equipment	Auger Size	Model Number
1 EA	Whitetip Shark Washing Compactor	6"	WCP 6S-26-3S

Motor Horsepower	Wash water requirements (EA)			
1.5 HP	0	GPM	0	PSI

Accessories

Valve Type	Classification	Material	QTY
Solenoid Valve	C1D2	Brass	1 EA

Strainer	Material	QTY
Included	Bronze	1 EA

Booster Pump	Horsepower	QTY
Not Included		

Safety Switch	QTY
Not Included	

Float Switch	QTY
Included	1 EA

Controls

Main Control Panel	Classification Type
1 EA	NEMA 4x

Local Control Panels	Classification Type
Not Included	

Screen Control Type	QTY
VFD	1 EA

Screening Handling Control Type	QTY
Motor Starter	1 EA

Level Control System	Differential Level Control
Classification of Motors	C1D2

Start up and Commissioning

Trips	1
Days	1

Warranty	1 year

Notes

- Local Control Panel not included within this scope of supply. Proposing the main control panel be installed within line of sight of the equipment.

Budget Price $290,000

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

Appendix C - Saveco FSM Alpha Beta Screen

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

FSM® Filterscreen

Multi-Angle Perforated Plate Belt Filter Screen

FRSIII 3075 αβ

Increase the Flow Capacity, not the Channel

No need to increase the size of the channel to handle increased flow and achieve high capture. The FRSIII Multi-Angle screen increases the flow capacity through the screen without increasing the screen footprint. The first section of the screen sits at a 30° angle which significantly increases the exposed surface area. The screen then transitions to a 75° transport area. That increased surface area at the 30° angle translates into nearly a 100% increase in capacity relative to a straight 75 degree screen installation.

- 30°Capture / 75° Transport / 6mm perforated plate
- Doubles wetted screen area.
- Reduces velocity through the screen.
- Maintains original channel footprint.
- Includes the FSM Auto-Brush feature.

This FSM screen utilizes all the existing Filterscreen technology but in a slightly different configuration. This is not a new product and FSM has hundreds of installations worldwide. This is a testament to FSM Engineering's innovative talent for solving problems.





Here is a retrofit example. A plant in Wisconsin planned to replace their two aging screens but they were trapped by an existing screw pump that limited the hydraulic grade line available. The first screen was replaced with a FSM Multi-Angle screen that increased capacity from 8.2 MGD to 11.1 MGD. A year later they replace their second screen and now the plant is capable of handling first flush storm flows up to 22 MGD.

Water usage is kept to a minimum because the proprietary, self-adjusting brush acts as the primary cleaning mechanism. The self-adjusting brush maintains the exact cleaning position with the curved perforated plates and requires no manual adjustment. By maintaining optimal cleaning position, 85% capture is guaranteed for the life of the brush.

Enviro-Care®
A WAMGROUP® Company
Is now SAVECO® North America, Inc.

Enviro-Care Company is the exclusive licensee for the sale of FSM Frankenberger GmbH & Co. KG equipment in North America.

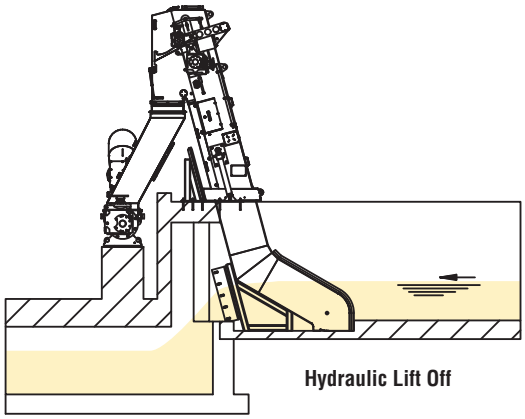
Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

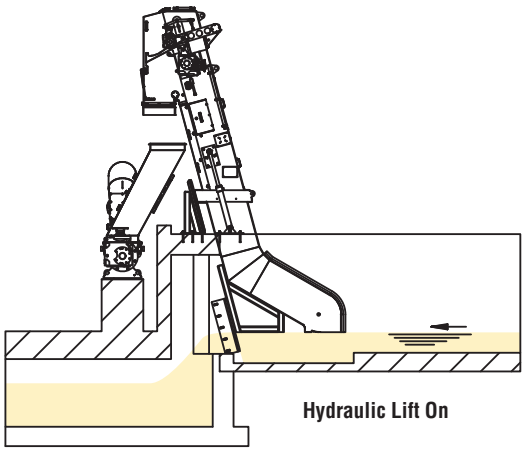
Optional Screen Bypass System



This hydraulic system will automatically raise the screen high enough to allow flow to bypass under the screen during emergency conditions. Lifting the screen can be a less expensive alternative to the expensive civil work involved with constructing a bypass channel.

The lifting system is supplied with two hydraulic cylinders and a hydraulic power pack to control the cylinders. A NEMA 7 local control station with a Screen Lift-Off Screen lower selector switch is supplied for manual operation of the hydraulic bypass system. The hydraulic power pack provides location flexibility which makes this a potential retrofit option.





Specifications

Material: 304L or 316L SS
Channel Widths: 1 foot to 10 feet
Channel Depths: Up to 50 feet
Perf Openings: 2 mm to 12mm
Increased Flow Capacity: Up to 92% relative to a standard 75° design.

Enviro-Care
A WAMGROUP® Company
Is now SAVECO® North America, Inc.
1570 St. Paul Avenue
Gurnee, IL 60031 U.S.A.
P. 815.636.8306 • F: 847.672.7968
ecsales@Enviro-Care.com
www.Enviro-Care.com

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Appendix D – Positive Displacement Blower Details

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

8/19/2022

Project: Holly Hill, FL
Customer: TSC Jacobs North

Model: 60 HP EE-PAC w/ ACOUSTI-PAC Enclosure	Design	66%	33%
Mass Airflow Requirement (SCFM)	1500	990	495
Volume Airflow Requirement (ICFM)	1649	1088	544
Differential Pressure (psig)	5.8	5.8	5.8
System RPM	1939	1411	899
Compressor Power Draw (bhp)	53.7	37.8	23.8
System Noise Level at 1m (dBA)	84	80	76

Design Notes

1. This proposal is for three high efficiency EE-PAC blower systems utilizing 60 HP motors.

2. Site conditions assumed for conversion of SCFM: 14.7 psia, 100F, 36% RH.

3. The attached drawing is a typical layout. It does not denote the exact scope of supply we anticipate, but is representative of the configuration and footprint requirement. This configuration can be modified to meet dimensional constraints or other customer needs.

4. This system utilizes a hybrid lobe impeller for reduced noise and pulsation.

5. The compressor is directly coupled with the motor through use of a drive coupling versus a belt or gearing mechanism. This eliminates lateral loading on the compressor and motor shafts that shortens bearing life. It also eliminates belt maintenance and the 3-5% power transfer losses normally incurred with a belt drive.

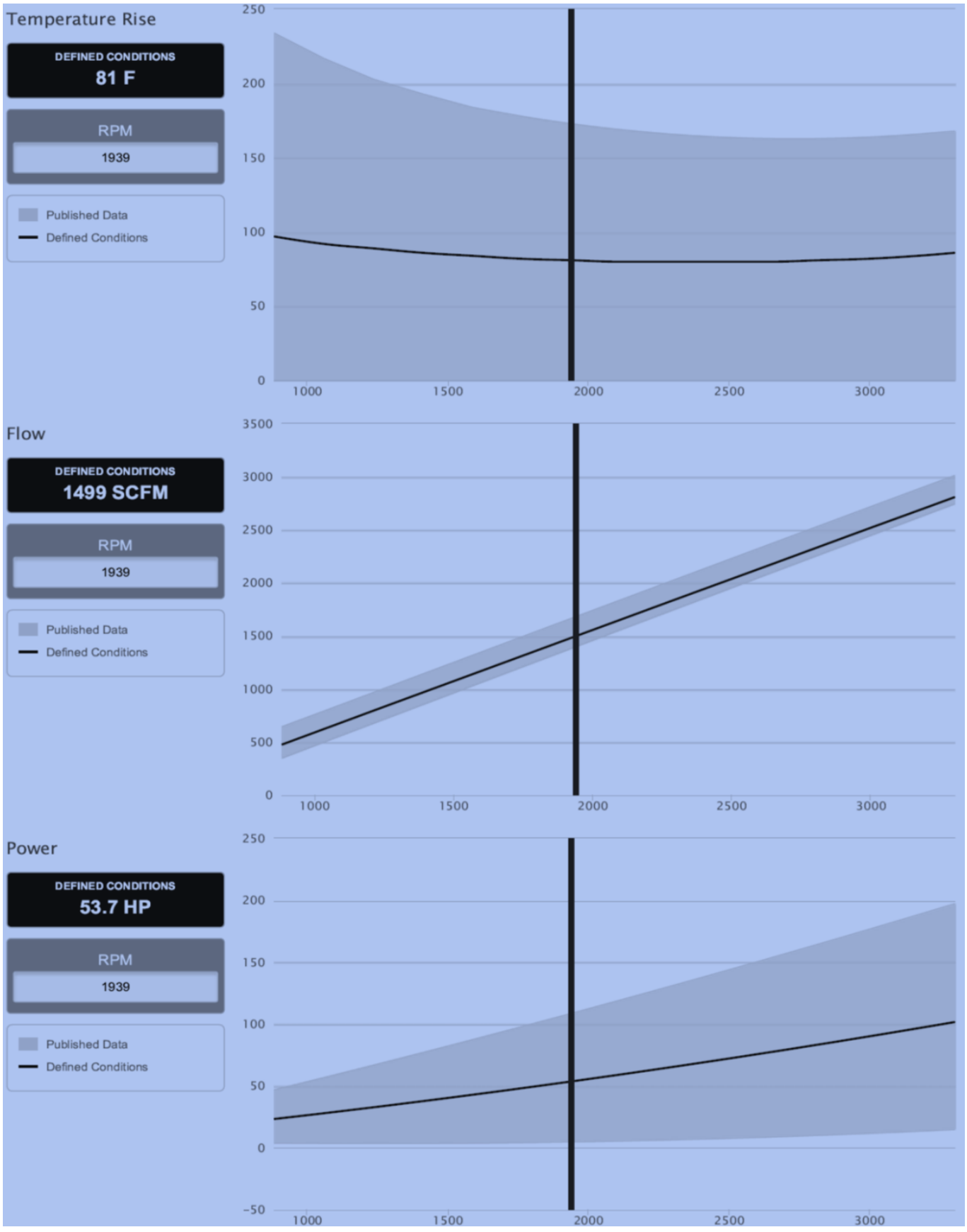
6. The unit's speed and flow will be controlled by a NEMA 3R VFD control panel, supplied by *Universal Blower Pac.*

7. The unit will operate within an ACOUSTI-PAC partial acoustical enclosure at an estimated noise level ≤ 84 dBA.

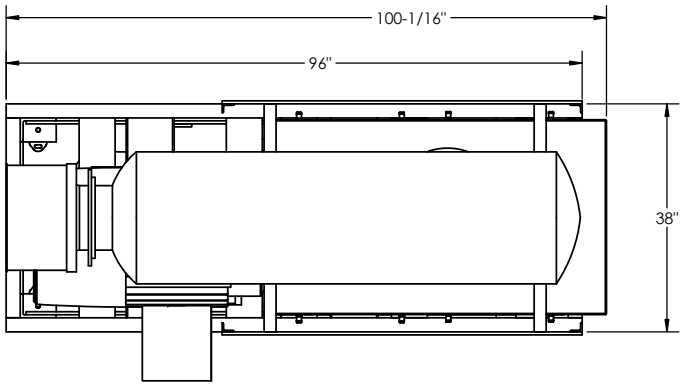
Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

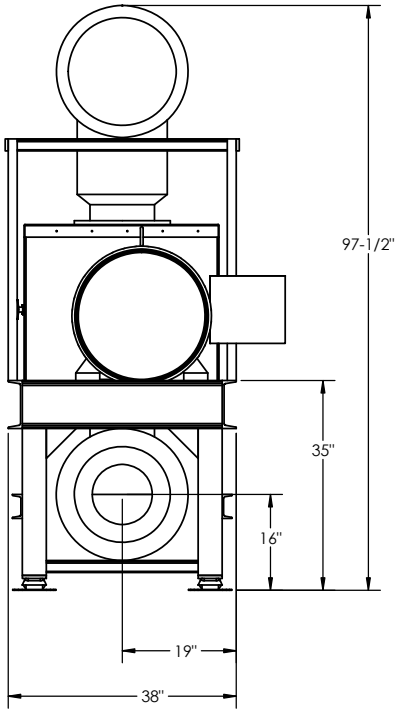
Performance Curves

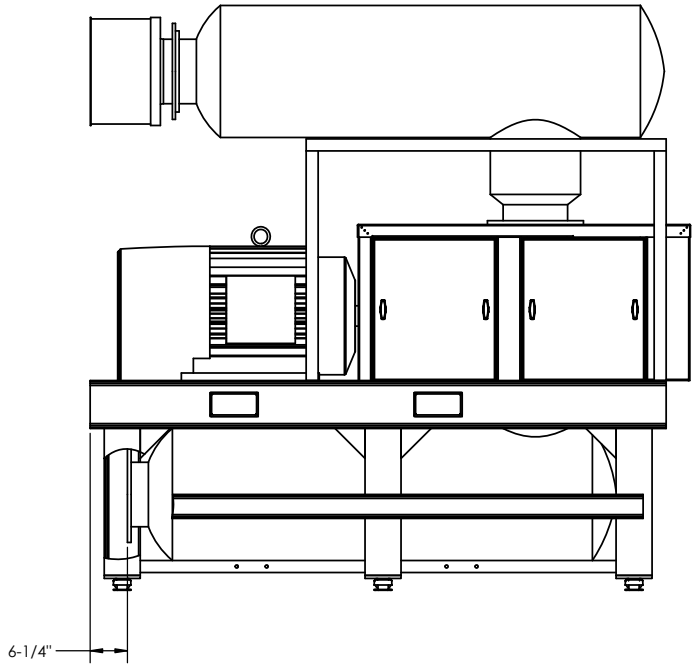
Model: 60 HP EE-PAC w/ ACOUSTI-PAC Enclosure



Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's







NOTE:

1. INSTALL AND OPERATE ACCORDING TO O&M MANUAL.
2. SOME ITEMS, USUALLY SILENCERS, MAY BE DISASSEMBLED FOR SHIPMENT. REASSEMBLY MAY BE REQUIRED.

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL TO
USER CONNECTIONS: ±1"
FRACTIONAL TO
MOUNTING LOCATIONS: 1/4"
OTHER FRACTIONAL: ±1
ANGULAR: MACH ±0.5 BEND ±2
TWO PLACE DECIMAL ±0.05
THREE PLACE DECIMAL ±0.005

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UNIVERSAL BLOWER PAC

UNIVERSAL BLOWER P.
440 PARK 32 WEST DRI
NOBLESVILLE, IN 46061
PHONE: 317-773-7256
www.universalblower

	NAME	DATE
DRAWN		
MATERIAL		
STOCK SIZE		
FINISH		

DO NOT SCALE DRAWING

TITLE:

SIZE C DWG. NO.

SCA

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater

UNIVERSAL BLOWER PAC

HIGH EFFICIENCY SCREW BLOWER SYSTEM

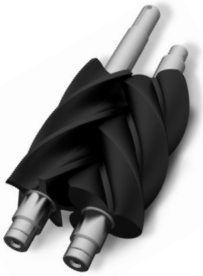


Universal Blower Pac's EE-PAC offers a low maintenance, advanced high efficiency screw blower system that delivers air efficiently across its entire operating range. *UBPs* patented design has proven more efficient than traditional PD blowers and achieves turbo blower efficiency over a 5:1 turndown. This robust system is able to withstand pressure and temperature fluctuations that turbo blowers can not, eliminating risk of surge and thus expensive repairs.

THREE EFFICIENT SCREW ROTOR PROFILE OPTIONS



3x3 w/ Axial Rotors



3x5 w/ Internal Compression



3x5 Variable Helix w/ Internal Compression

The advanced screw compressor technology is 100% oil free and is directly coupled to an induction motor for optimized efficiency. The updated design is modular and comes with a base configuration without an acoustical enclosure at a lower cost, but can easily be upgraded to include a partial or full enclosure with on board controls as desired. This unique combination of efficiency and flexibili can effectively manage wastewater aeration to pneumatic conveying or any variety of system application needs.

YOUR PAIN	OUR SOLUTION
>> High operating cost	**>> SAVES ENERGY & MAINTENANCE COST** *Oil free compressor, no v-belt drive maintenance and proven efficiency over traditional PD blowers*
>> Turbo blower generally provide 2:1 turndown before surging and have limited operating and pressure ranges	**>> BETTER EFFICIENCY OVER ENTIRE OPERATING RANGE** *Achieves 5:1 turndown*
>> Blower failures due to surge	**>> DISPLACEMENT COMPRESSOR WON'T SURGE** *Allows for operation of multiple units on a single header*
>> Expensive blower failures and downtime	**>> REPAIRS DO NOT REQUIRE EE-PAC REPLACEMENT** *Design has readily available American manufactured components for ease of maintenance, servicing or parts replacements*
>> Replacing old equipment requires room modifications	**>> NARROW DESIGN FITS EXISTING PADS OF CURRENT SYSTEM** *Engineered to replace the area of most multistage centrifugal blowers, thus minimizing typical room or pad modifications*

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

PROVEN RELIABILITY
MORE FLEXIBILITY

1. >> **EE-PAC is modular featuring multiple configurations available for each size**. Forklift slots are provided for easy installation in any configuration.

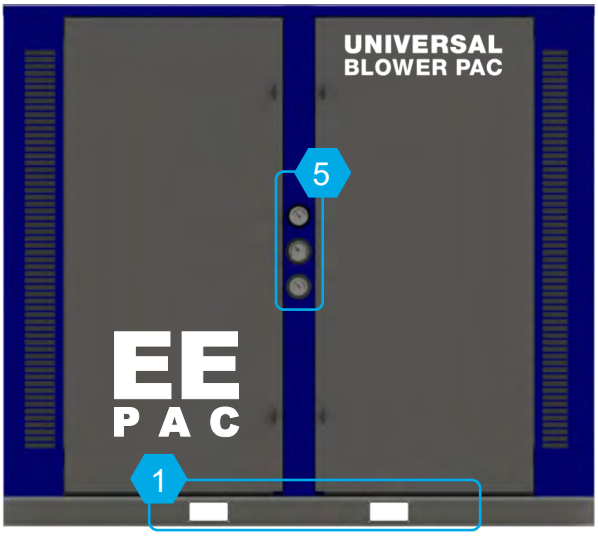
2. >> **All EE-PAC designs feature direct drive coupling** to provide a lossless power transmission to maximum efficiency.

3. >> **Upgrade to either a partial acoustical enclosure or a full acoustical enclosure** with internal sub-base.

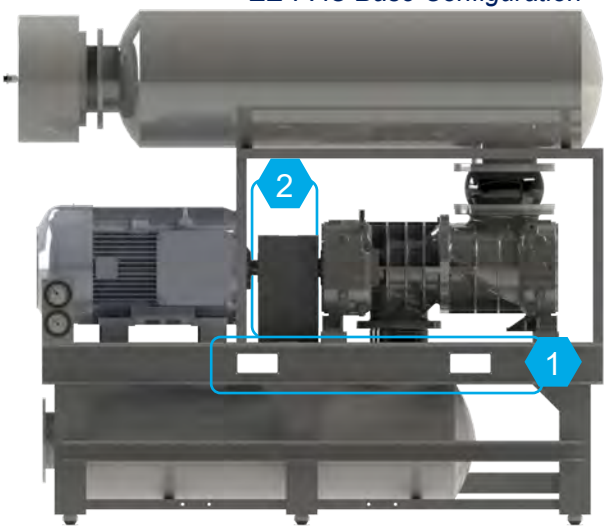
4. >> All configurations **suitable for outdoor installation** with starting temperatures as low as -20˚ F.

5. >> **Instrumentation configured to your requirements.**

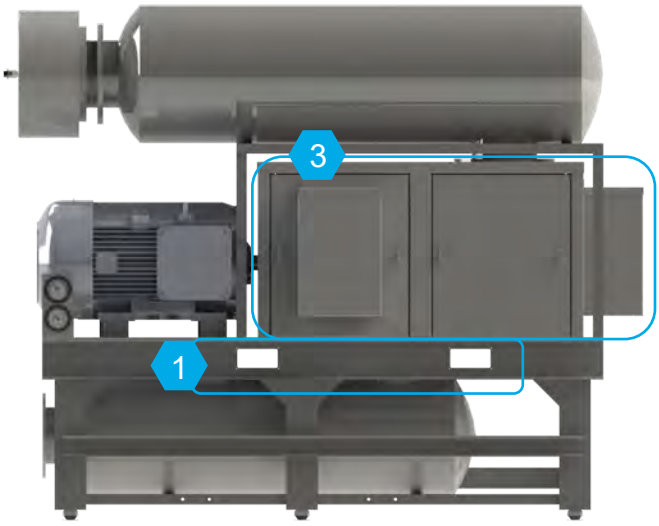
ATTENU-PAC Enclosure



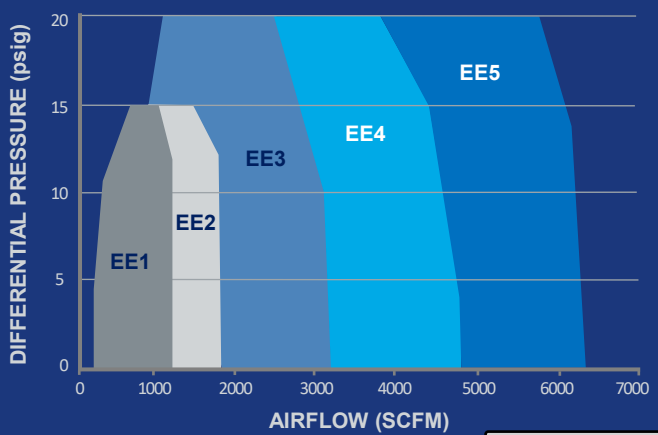
EE-PAC Base Configuration



ACOUSTI-PAC Enclosure



Standard units to fit your requirements



Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

EE-PAC ADVANTAGE

ADVANTAGE #1: THE UBP DIFFERENCE

Universal Blower Pac uses standardized, readily available, American manufactured parts on all systems and equipment. What does this mean for our clients?

>> Lower repair and parts replacement costs. Units can be repaired without need for full replacement

>> Systems can be locally serviced throughout the US with ease of interchangeability

>> Less downtime. More Savings. Less headache

EASY INSTALLATION FOR INDOOR OR OUTDOOR USE

>> Engineered with *UBP's* high quality noise enclosure with high density acoustic foam and removable panels for easy maintenance access

>> Enclosure is powder coated aluminum and galvannealed steel proven to withstand corrosive environments

>> Modular designs feature a narrow footprint for easy side-by-side installation

DIRECT DRIVE COUPLING

>> Significantly improves system bearing life

>> No belt tightening or replacement costs

>> More efficiency, less maintenance

EFFICIENCY OVER ENTIRE OPERATING RANGE

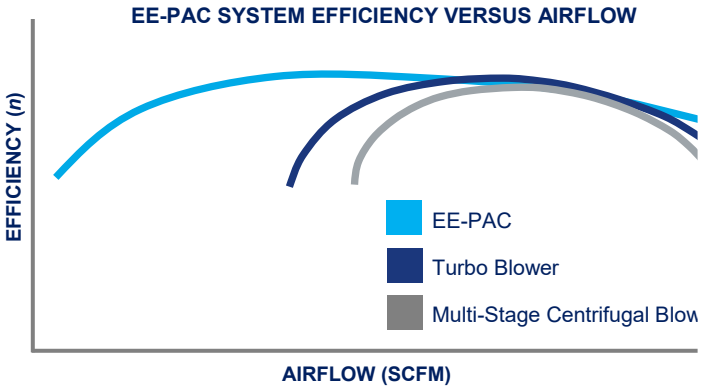
>> Reliable and improved longevity: EE-PAC handles higher pressures and temperature ranges to ensure performance

>> Drastically reduce operating costs

>> Increased functionality and Lower noise levels

- Hybrid lobe and hybrid screw technology offers a wider turndown range than a turbo or multi-stage blower system

- Positive displacement does not surge



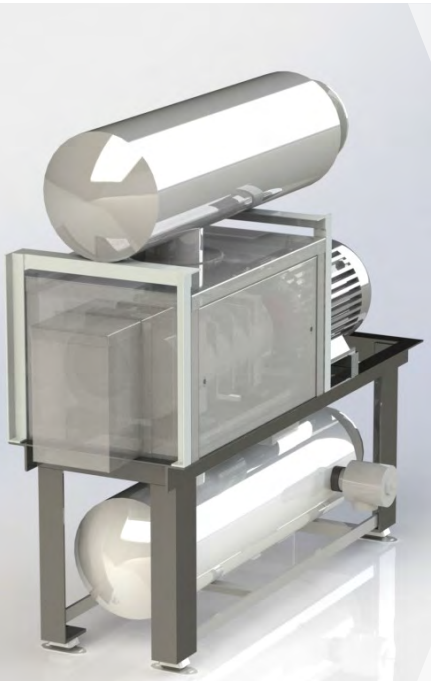
REPLACE MULTI-STAGE CENTRIFUGAL BLOWERS WITH EASE

>> EE-PAC Base and Partial ACOUSTI-PAC enclosure narrow configurations easily fit existing facility and pads

>> Keep your current capacity but only use the flow you need to drastically lower power costs

>> Increased pressure capability and will not surge

>> Combine with a DO control upgrade for further optimization





Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

UBPstandardFLEX

UBPstandardFLEX provides you with all the benefits of a standardized system with FLEXibility to choose a variety of add-on options for a more custom solution at a fraction of the cost. Whether it's more instrumentation, noise solutions or need for specific valve vendors, EE-PAC can be FLEXed to optimize your investment. For variable flow operation, *UBP* can integrate any major brand constant torque VFD and provide your choice of drive for the system. Get more cutting edge technology and efficiency to meet your needs and budget. Email ***sales@universalblowerpac.com*** to discuss options.

EE-PAC FLEXibility:

Energy Efficiency

Noise Reduction

Scan to view the EE-PAC video tour and the UBP Global Installation Map

440 Park 32 West Drive
Noblesville, IN 46062
P >> 317.773.7256
F >> 317.776.5086

UNIVERSALBLOWERPAC.COM
HYBRIDBLOWER.COM

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

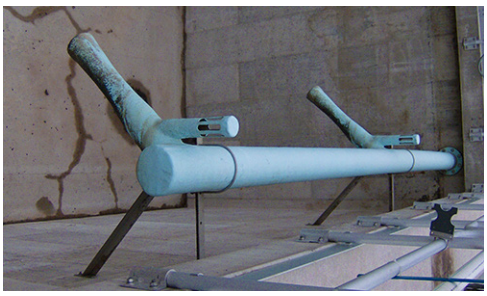
Appendix E – Jet Aspiration Mixing System

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's



FLUIDYNE'S JET AERATION, ASPIRATION & MIXIN







FLUIDYNE
THE EXPERIENCED LEADER IN WASTEWATER TREATMENT TECHNOLOGY
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319.266.9967

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's



FLUIDYNE'S JET AERATION ™

Fluidyne's Jet Aeration provides an economical and effective approach to oxidizing and mixing wastewater. Jet Aeration Systems are ideal for both industrial and municipal activated sludge processes including SBRs, oxidation ditches, extended aeration and BNR. Due to their flexibility, large solids handling capability and efficiency, jets are also commonly used in aerobic digesters, sludge holding tanks, flow equalization basins and post aeration tanks.

FEATURES:

INNOVATIVE DESIGN

Jet mixing employs an arrangement of either jets or ejectors, each a jet nozzle, to entrain a large volume of liquid, using a small amount of pumped fluid or gas. This innovative systems produces extremely high mixing rates and strong fluid movement using very little energy.

COST EFFECTIVE & EASY TO MAINTAIN

It's far simpler, far less costly and far easier to maintain than other aeration and mixing methods including fine bubble diffusers, coarse bubble diffusers and surface type aerators. In a Fluidyne jet aeration and mixing manifold, there are no moving parts, bearings or metal components submerged in the liquid. The only moving parts are the pump or compressor located outside the liquid tank or basin. A built-in back-flush assembly allows cleaning the manifold without entering the tank. The units are standard models backed by quickly available service.

WELL CONSTRUCTED

Submerged components of a Fluidyne system, the nozzle and piping, are built of corrosion and abrasion resistant stainless steel or fiberglass reinforced polyester.

BENEFITS:

- High Oxygen Transfer Efficiencies
- High Alpha Values
- Self-Cleaning Without Entering or Draining Tank
- No Icing, Fogging or Misting
- Ideal for Industrial Wastewater
- No In-Basin Moving Parts
- Low Operation Costs
- Long Life Cycle Compared to Coarse/Fine Bubble
- Large Solids Handling Capability
- FRP or Stainless Steel



HOW IT WORKS:

BIOLOGICAL REACTION

To provide the oxygen source for the biological reaction, a jet aeration manifold with multiple jet nozzle assemblies is connected to a pump and a blower. Each jet has a primary mixing nozzle and an outer secondary nozzle. The tank contents are re-circulated by the pump through the primary mixing nozzle. Low pressure air is mixed with the liquid in the outer secondary nozzle creating fine bubbles. By turning off the blower connected to the airline, anoxic mixing can be achieved with the same equipment to promote biological nutrient removal. No separate mixer is needed.

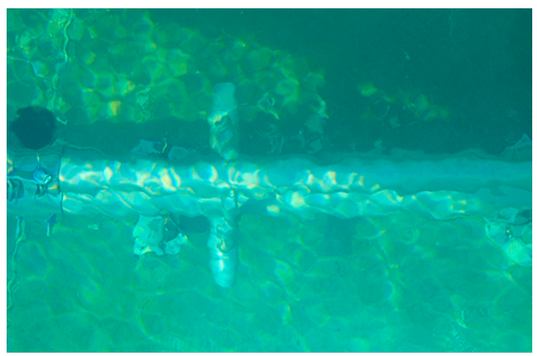
ENERGY EFFICIENT

Jets have high oxygen transfer and higher alpha values compared to other aeration devices. The design alpha for a Fluidyne jet system is 0.9 with hundreds of successful installations worldwide. Performance data has demonstrated alpha values above 1 in the use of some industrial wastewaters. Jet nozzle gassing rates can vary significantly without major changes in oxygen transfer efficiency. Jets also provide energy efficient off-bottom solids suspension.



HIGH VELOCITY

Tank liquid is pumped through the liquid line and through the inner nozzle. High velocity is created by the inner nozzle forming a jet plume. Compressed air is forced through the air line into the air transfer duct and then the outer nozzle. The high velocity jet plume from the inner nozzle shears the air in the outer nozzle creating fine bubbles. These bubbles are carried by the jet plume into the tank liquid. As the jet plume disperses and velocity slows. The buoyant force of the bubble causes the bubbles to rise.



Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's



FLUIDYNE'S JET ASPIRATION ™

Jet aspiration is a simple, efficient and cost effective solution to wastewater treatment and mixing problems. Liquid from the tank is pumped through a specially designed double nozzle assembly which aspirates air into the mixing section. The combined air/liquid plume is then discharged below the surface to provide high oxygen transfer and off-bottom solids suspension.

HOW IT WORKS:

The principle is simple, liquid from below the surface is pumped through a specially designed nozzle. In passing through the nozzle, the liquid flow increases in velocity. Air is drawn into the low pressure zone in the aspirator and mixes with the liquid in an outer nozzle, forcing oxygen to transfer into solution. The jet plume then discharges through the liquid into the basin and mixes the oxygenated liquid in the plume with the bulk of the basin liquid. The result is efficient oxygenated mixing at a reasonable cost, especially designed for small applications.

FEATURES:

FIXED ASPIRATORS

In the fixed units, the motive pump is submersible with an integrally mounted motor and is suitable for many different wastewater treatment and mixing applications. The jet aspirating nozzle assembly is mounted directly to the jet motive pump. The entire assembly is retrievable on guide rails for service and maintenance. The pump body is cast iron with a corrosion resistant coating. The jet aspirating nozzle assembly is fabricated out of stainless steel or corrosion resistant fiberglass.

PORTABLE ASPIRATORS

Portable aspirators are submerged units which are effective bottom mixing devices. The nozzle is close to the basin floor providing scouring velocities which lift solids from the floor toward the surface. Multiple units can also be positioned to create a circular mixing pattern which will make more efficient use of mixing energy input. These units are adapted to holding tanks, aerobic lagoons, aerobic digesters with secondary solids, small oxidation channels, SBRs, ISAM™ and equalization basins. These can also be adapted to temporary aeration applications.

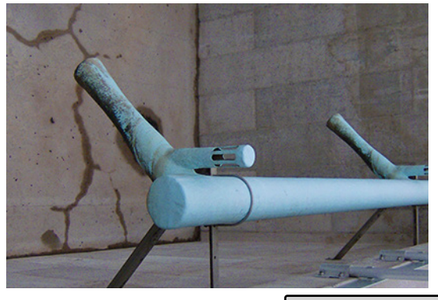


BENEFITS:

- Simple & low maintenance
- Quick and easy to install
- No additional piping required
- No compressed air required
- Efficient & low cost
- Constant pump power, not variation
- Complete system delivered & installed







Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's



FLUIDYNE'S JET MIXING ™

Fluidyne Jet mixers can be used in a wide variety of wastewater applications including flow equalization basins, CSO tanks, anoxic reactors, anaerobic digesters, SBRs, oxidation ditches and flash mix tanks. Fluidyne's jet mixing systems are simple, cost effective and available for new installations or for retrofit in existing tanks.

HOW IT WORKS:



Jet mixing employs a special dual nozzle assembly with entrainment ports. Tank liquid is pumped through a liquid line and then through the inner nozzle. High velocity is created by the inner nozzle forming a jet plume. This jet plume pulls tank liquid through the entrainment port and then discharges the liquid through the outer nozzle. Transfer of the high velocity stream to the surrounding liquid entrains additional flow increasing the pumping rate by as much as ten times the pumping capacity.

There are no moving parts within the jet mixing nozzle with several nozzles typically installed along a header system or radially around a central mounted cluster. Several different nozzle sizes are available depending on the particular application and type of mixing energy desired.

CUSTOM MIXING SYSTEMS

Our mixing systems are custom designed and sized based on the level of mixing required including solids suspension, stirring, blending, tank turnover or flash mixing. Depending on the makeup of the water, components can include special corrosion-resistant or chemical-resistant materials as needed.

FEATURES:

Each jet nozzle entrains a large volume of liq-uid, using a small amount of pumped fluid. This innovative system produces extremely high mix-ing rates and strong movement using very little energy.

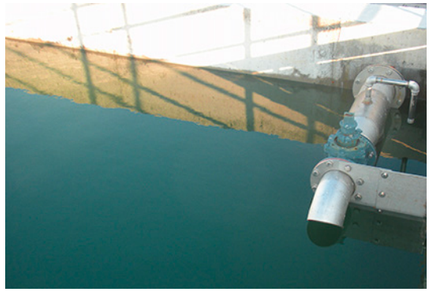
Due to their flexibility, jet mixing systems can be used in many different tank geometries and depths including very shallow or deep tanks. It's simple, cost less and is easier to maintain than other traditional methods, particularly those employing rotating devices.

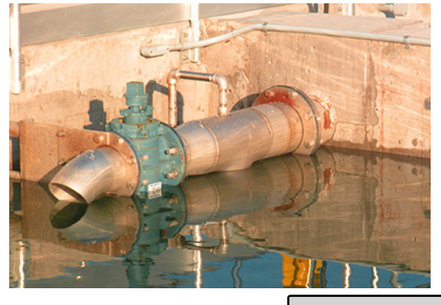


BENEFITS:

- Low installed cost
- Energy efficient
- Long life cycle (20 + years)
- Standard unit models backed by availability
- Nozzles and piping are built stainless steel or FRP







Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

FLUIDYNE

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THE EXPERIENCED LEADER IN WASTEWATER TREATMENT TECHNOLOGY

FLUIDYNE CORPORATION

5436 Nordic Drive, Suite D
Cedar Falls, IA 50613

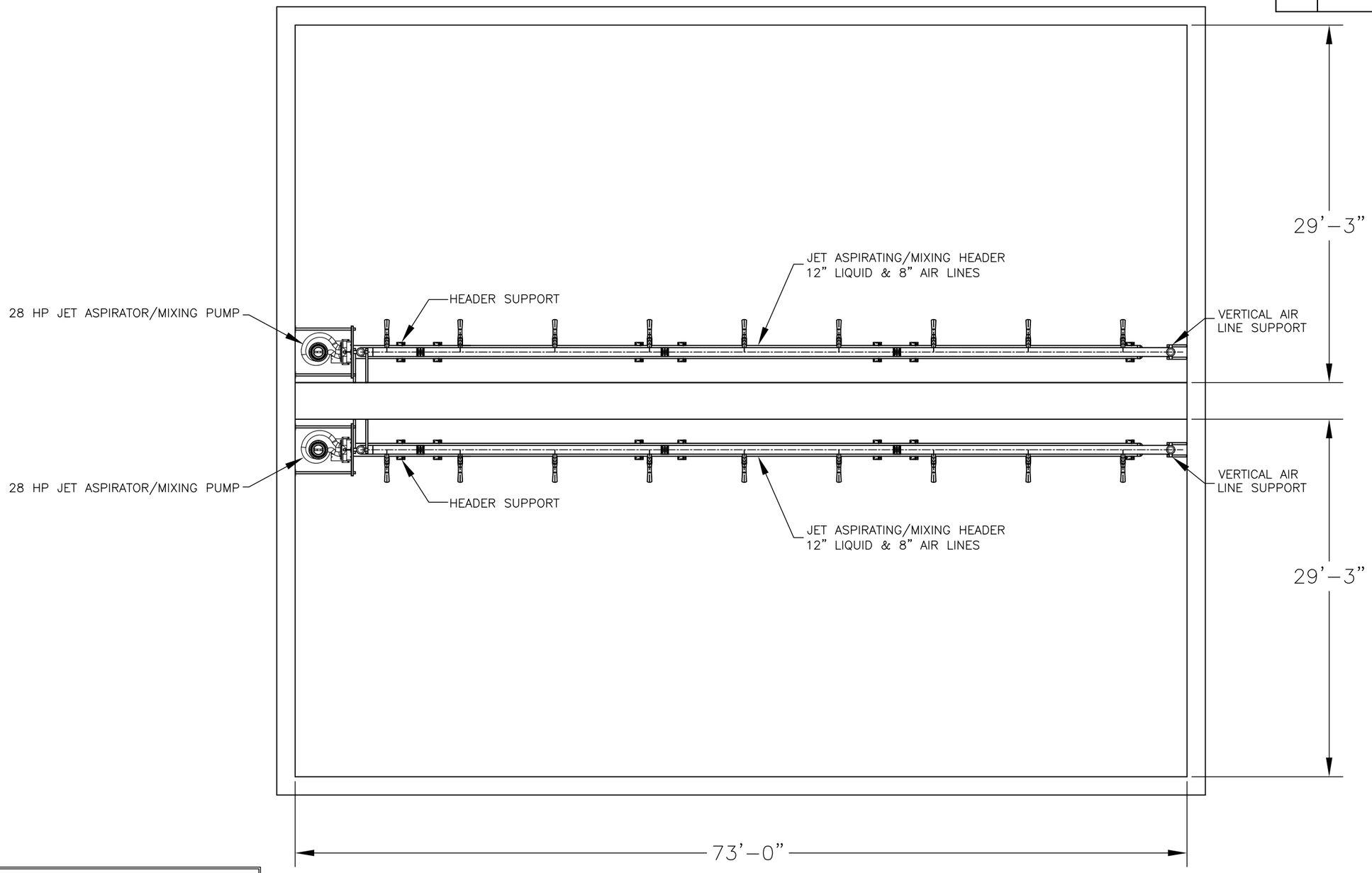
319.266.9967

fax: 319.277.6034
fluidyne@fluidynecorp.com

FLUIDYNECORP.COM

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED



NOTES:

1. THOROUGHLY REVIEW INSTALLATION INSTRUCTIONS PRIOR TO BEGINNING FIELD WORK. IF YOU HAVE ANY QUESTIONS PLEASE CONSULT FACTORY.
2. ALL NOZZLES TO BE LEVELED AND AT THE SAME ELEVATION ± 1/4".
3. ALL SUPPORT SPACING IS NOMINAL, SOME FIELD ADJUSTMENT MAY BE REQUIRED.
4. SEE INSTALLATION INSTRUCTIONS FOR PROPER PREPARATION TO ENSURE PROPER FITTING OF ALL COMPONENTS.
5. ALL HEADERS & AIR PIPING ARE 304 SST SCHEDULE 10.
6. ALL FREEZE PROTECTION AND HEAT TRACING BY OTHERS

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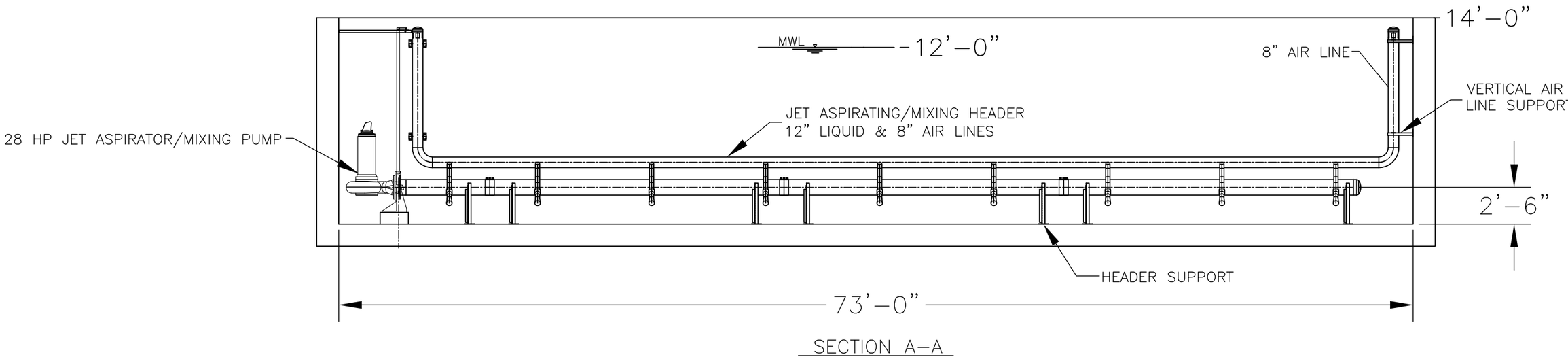
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HOLLY HILL, FL – 1 – PLAN VIEW

DRAWN	DATE	JOB #	CAD FILE
CAS	8/29/22	--	Holly Hill, FL – 1 – Plan View
CHECKED	DATE	SCALE	SHEET
--	--		1

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED



SECTION A–A

NOTES:

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HOLLY HILL, FL – 2 – ELEVATION VIEW

DRAWN	DATE	JOB #	CAD FILE
CAS	8/29/22	––	Holly Hill, FL – 2 – Elevation View
CHECKED	DATE	SCALE	SHEET
––	––		2

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

Appendix F – New Orbal Basin Design Details

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

EVOQUA WATER TECHNOLOGIES

Orbal Design Outline

New Orbal Basin

Project: Holly Hill WWTP
Engineer: Mead & Hunt
Date: 21-Feb-2022
Designer: VandenBoom

Influent Characteristics

Average Daily Flow	1.50	MGD	
BOD_5	200	mg/L	2,502 lb/day
TSS	200	mg/L	2,502 lb/day
Ammonia (NH_3-N)	25	mg/L	313 lb/day
Nitrate (NO_3-N)		mg/L	lb/day
TKN	32	mg/L	400 lb/day
Total Phosphorous (TP)	7	mg/L	88 lb/day
TN	32	mg/L	400 lb/day
Alkalinity	350	mg/L	

Effluent Requirements

BOD_5	5.0 mg/L	63 lb/day
TSS	5.0 mg/L	63 lb/day
Ammonia (NH_3-N)	1.0 mg/L	13 lb/day
Nitrate (NO_3-N)		lb/day
TKN		lb/day
Total Phosphorous (TP)	1.0 mg/L	13 lb/day
TN	3.0 mg/L	38 lb/day

Orbal Design Parameters

SRT for Nitrification	8.0	days	Total System SRT	8.0 days
Design MLSS Liquid Temp	25	°C		
Min MLSS Liquid Temp	18	°C		
Orbal Organic Loading Rate	19.52	lb/1,000 ft³/day		
System Organic Loading Rate	19.52	lb/1,000 ft³/day		
MLSS	2,500	mg/L		
Sludge Yield	1.01			
Total WAS	2,533	lb/day		
Overall Alpha	0.95	Disc		
Beta	0.98		RAS Pump Rate	100% of ADF
Mass O_2/Mass BOD Selected	1.09		Nitrate Recycle Pump Rate	400% of ADF
Submergence Correction Factor				
Altitude Correction Factor	0.98		Site Elevation	500 ft

Tank Configuration

Number of Trains 1

Channel	Qty/train	Length, ft	Channel Width, ft	SWD, ft	Volume, Gallons	%Vol	HRT, h
Outer Channel	1		16.0	12.0	472,974	49.34%	7.57
Middle Channel	1		16.0	12.0	319,561	33.33%	5.11
Inner Channel	1		16.0	12.0	166,149	17.33%	2.66
Total					**958,684**	**100.00%**	**15.34**

Dimensions for each Orbal basin
Overall Length (ft) = 129.00
Overall Width (ft) = 112.00
Long axis straight length (ft) = 17
Short axis straight length (ft) = 0
Center island radius (ft) = 5
Wall thickness (ft) = 1.00

Process Data (per train)

Reactor	Volume Split	AOR Split	DO, mg/L	Disc AOR, lb/h	FCF Discs, AOR/SOR	Disc SOR, lb/h
Outer Channel	49.3%	38.6%	0.0	48.40	0.94	51.74
Middle Channel	33.3%	34.8%	0.2	47.19	0.91	51.74
Inner Channel	17.3%	26.6%	2.0	36.23	0.70	51.74
Total	**100.0%**	**100.0%**		**131.82**		**155.22**

Disc Aerator Equipment Selection per train

Reactor	Disc Aerator	Span	Discs per Drive	Drive Size, HP	Design Disc RPM	Design immersion, inch	Max. Disc RPM	Max. immersion, inch
Outer	2	1	11	20	43.0	20.0	52.0	24.0
Center Island	2	2	22	40	43.0	20.0	52.0	24.0

Estimate of Total Operating Power Requirements for 1 Train

	Units Installed	Units Operating	Flow/Unit	Discharge Pressure	Assumed Efficiency	Rated Power/Unit (bHP)	Operating Power/Unit (eHP)	Total Operating Power (eHP)	Total Installed Power (bHP)
Nitrate Recycle Pump	1	1	4167 gpm	1.5 ft	28%	7.4	5.8	5.8	7.4
Disc Aerators	4	4			90%	Variable	Variable	59.8	120.0
						Total System Power:		**65.7**	**127.4**

* Assumed efficiency includes equipment, motor and VFD efficiency.

** Electric motor ratings are based on output bHP. Input eHP can be greater than rated bHP without damaging the motor.

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

EVOQUA WATER TECHNOLOGIES

Orbal System Scope

New Orbal Basin

Project:	Holly Hill WWTP	Date:	21-Feb-2022
Engineer:	Mead & Hunt	Designer:	VandenBoom

Orbal

Scope	Qty	Description
Evoqua	2	20 HP direct drive shaft mounted aerator assemblies
Evoqua	2	40 HP direct drive shaft mounted aerator assemblies
Evoqua	66	Complete 66 inch disc assemblies
Evoqua	6	Shafts
Evoqua	12	Bearings
Evoqua	8	Automatic bearing lubrication units
Evoqua	2	Shaft Couplings
Evoqua	-	*Aerators also include anchors , galvanized steel splash shields*
Evoqua	-	*2 trips and 4 days of field service*

SmartBNR Instrumentation and Controls

Scope	Qty	Description
Evoqua	2	Oxidation Reduction Potential (ORP) probes with handrail mounting kits (Hach)
Evoqua	2	Dissolved Oxygen probes with handrail mounting kits (Hach LDO)
Evoqua	2	Analytical transmitters with sun shield (Hach SC200)
Evoqua	12	Probe mounts
Evoqua	1	Control panel with Allen Bradley Compact Logix 5370 PLC and 15" AB Panel View Plus 1500 HMI (Touch Screen)
Evoqua	-	New PLC and I/O cards for existing panel
Evoqua	1	Control Logic for original and new panels
Evoqua	1	Software & Graphics

Scope Exclusions

Concrete or steel tanks, piping, valves, gates, effluent troughs, weirs, baffles and associated supports, RAS/WAS pumps, blowers, blower controls, air valves, air main piping, flow meters for influent, RAS, and WAS, Motor Control Center (MCC), Variable Frequency Drives (VFDs), walkways, handrail, grating, stairs, ladders, etc. other than indicated in pricing below

**Evoqua has not included selections for classified areas.

Budget Pricing

Orbal System Equipment with Splashshields	$	-	(Included)
Dome Fiberglass Weatherhoods	$	-	(Not Included)
Smart BNR Process Controls	$	-	(Optional)
Variable Frequency Drives	$	-	(Not Included)
Field Service	$	-	(Included)
Freight	$	-	(Included)
Handrail and Grating for Aerator Walkways	$	-	(Not Included)
Suggested Spare Parts	$	-	(Not Included)
Pumps/Mixers/Diffusers	$	-	(Not Included)
Direct Drive Units	$	-	(Included)
Total =	**$**	**-**	

The scope of supply and pricing are based on Evoqua's standard equipment selection, standard terms of sale and warranty terms. Any variations from these standards may affe this budgetary quotation. Additionally, please note that this budgetary quotation is for review and informational purposes only and does not constitute an offer for acceptance. Budget prices include freight and field service unless noted otherwise. A request for updated pricing can be made every six months throughout the project evaluation and design stage in order to keep the project cost estimation accurate and up to date.

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

Appendix G – Capital Financing Plan

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

CAPITAL FINANCING PLAN

City of Holly Hill
(Project Sponsor)
Joseph Forte, City Manager
(Authorized Representative and Title)
Holly Hill, FL 32117
(City, State, and Zip Code)

Sheryl Parsons, Funding Practic Leader, 608.443.0404
(Capital Financing Plan Contact, Title and Telephone Number)
4401 Eastport Parkway
(Mailing Address)
Port Orange, FL 32127
(City, State, and Zip Code)

The Department needs to know about the financial capabilities of potential State Revolving Fund (SRF) loan applicants. Therefore, a financial capability demonstration (and certification) is required well before the evaluation of the actual loan application.

The sources of revenues being dedicated to repayment of the SRF loan are N/A (100%Principal Forgivemess)
(Note: Projects pledging utility operating revenues should attach a copy of the existing/proposed rate ordinance)

Estimate of Proposed SRF Loan Debt Service

Capital Cost*	**$9,300,000**
Loan Service Fee (2% of capital cost)	**$186,000**
Subtotal	**$9,486,000**
Capitalized Interest**	**$0**
Total Cost to be Amortized	**$0**
Interest Rate***	**0%**
Annual Debt Service	**$0**
Annual Debt Service Including Coverage Factor****	**$0**

* Capital Cost = Allowance + Construction Cost (including a 10% contingency) + Technical Services after Bid Opening.
** Estimated Capitalized Interest = Subtotal times Interest Rate times construction time in years divided by two.
***20 GO Bond Rate times Affordability Index divided by 200.
**** Coverage Factor is generally 15%. However, it may be higher if other than utility operating revenues are pledged.

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

SCHEDULE OF PRIOR AND PARITY LIENS

List annual debt service beginning two years before the anticipated loan agreement date and continuing at least fifteen fiscal years. Use additional pages as necessary.

IDENTIFY EACH OBLIGATION

#1 Water-Sewer Improvement Revenue Bond, Series 2005	#2Water-Sewer Improvement Revenue Bond, Series 2011	#3Water-Sewer Refunding Revenue Bond, Series 2012
Coverage %	Coverage %	Coverage %
Insured (Yes/No) Yes	Insured (Yes/No) Yes	Insured (Yes/No) Yes
#4 W/S Rev Bond, 2013	**#5 SBITA**	**#6**
Coverage %	Coverage %	Coverage %
Insured (Yes/No) Yes	Insured (Yes/No) Yes	Insured (Yes/No)

Fiscal Year	Annual Debt Service (Principal + Interest)						Total Non-SRF Debt Service w/coverage	Total SRF Debt Service w/coverage
	#1	#2	#3	#4	#5	#6		
2022	$113,839	$389,562	$937,940	$173,999	$0		$1,615,340	$421,006
2023	$110,067	$379,284		$173,298	$75,045		$737,694	$355,512
2024	$106,295	$369,006			$75,045		$550,345	$425,537
2025	$102,522	$358,727			$75,044		$536,294	$425,537
2026		$348,449			$75,046		$423,495	$421,575
2027		$338,171			$75,044		$413,215	$378,652
2028		$327,893			$75,045		$402,938	$378,652
2029		$317,615			$75,045		$392,660	$79,859
2030		$307,343			$75,045		$382,388	
2031					$75,045		$75.045	
2032					$75,045		$75.045	
2033					$75,045		$75.045	
2034					$75,045		$75.045	
2035					$75,045		$75.045	
2036					$75,045		$75.045	
2037					$75,045		$75.045	
2038					$33,770		$33,770	
2039					$33,770		$33,770	

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

SCHEDULE OF ACTUAL REVENUES AND DEBT COVERAGE FOR PLEDGED REVENUE

(Provide information for the two fiscal years preceding the anticipated date of the SRF loan agreement)

		FY2022	FY2023
(a)	Operating Revenues (Identify)		
	Charges for Water and Sewer	$7,856,776	$8,101,948
	Other Operating Revenues	$301,302	$356,655
(b)	Interest Income	$28,278	$588,173
(c)	Other Incomes or Revenues (Identify)		
	Leases and Other Income	$56,605	$32,749
(d)	Total Revenues	**$8,242,961**	**$9,079,525**
(e)	Operating Expenses (excluding interest on debt, depreciation, and other non-cash items)	$4,254,518	$5,363,536
(f)	**Net Revenues (f = d – e)**	**$3,988,443**	**$3,715,989**
(g)	Debt Service (including coverage) Excluding SRF Loans	$1,615,340	$737,694
(h)	Debt Service (including coverage) for Outstanding SRF Loans	$421,006	$355,512
(i)	**Net Revenues After Debt Service (i = f – g – h)**	**$1,952,097**	**$2,622,783**

Source: Comprehensive Financial Reports 2022, 2023

Notes: 1. Detailed schedule of prior and parity liens, plus SRF debt coverage attached

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

SCHEDULE OF PROJECTED REVENUES AND DEBT COVERAGE
FOR PLEDGED REVENUE
(Begin with the fiscal year preceding first anticipated semiannual loan payment)

		FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
(a)	Operating Revenues (Identify) Charges for Water and Sewer	$8,046,822	$8,248,446	$8,455,322	$8,667,594	$8,885,405
	Other Operating Revenue	$350,230	$350,230	$350,230	$350,230	$350,230
(b)	Interest Income	$30,159	$31,064	$31,996	$32,956	$33,945
(c)	Other Incomes or Revenues (Identify) Leases and Other Income	$20,000	$20,000	$20,000	$20,000	$20,000
(d)	Total Revenues	**$8,447,212**	**$8,649,740**	**$8,857,548**	**$9,070,780**	**$9,289,580**
(e)	Operating Expenses[1]	$5,423,838	$5,736,510	$6,070,039	$6,425,944	$6,805,863
(f)	**Net Revenues (f = d - e)**	**$3,023,374**	**$2,913,229**	**$2,787,509**	**$2,644,835**	**$2,483,716**
(g)	Existing Debt Service on Non-SRF Projects (including coverage)	$536,294	$423,495	$413,215	$402,938	$392,660
(h)	Existing SRF Loan Debt Service (including coverage)	$425,537	$421,575	$378,652	$378,652	$79,859
(i)	**Total Existing Debt Service (i = g + h)**	**$961,831**	**$845,070**	**$791,868**	**$781,590**	**$472,519**
(j)	Projected Debt Service on Non-SRF Future Projects (including coverage)	$0	$0	$0	$0	$0
(k)	Projected SRF Loan Debt Service (including coverage)	$0	$0	$0	$0	$0
(l)	**Total Debt Service (Existing and Projected) (l = i + j + k)**	**$961,831**	**$845,070**	**$791,868**	**$781,590**	**$472,519**
(m)	**Net Revenues After Debt Service (m = f – l)**	**$2,061,543**	**$2,068,159**	**$1,995,641**	**$1,863,245**	**$2,011,197**

Source: Annual Budgets, FY 23/24 and FY 22/23

Notes: (i.e. rate increases, explanations, etc.)
1. For existing and proposed facilities, excluding interest on debt, depreciation, and other non-cash items.
2. Calculations for projected amounts based on historical data. A further explaination is included on the Budget Spreadsheet (attached).

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

CERTIFICATION

I, Michele Moore , certify that I have reviewed the information
Chief Financial Officer (please print)

included in the preceding capital financing plan worksheets, and to the best of my knowledge, this information accurately reflects the financial capability of the City of Holly Hill

Project Sponsor

I further certify that the City of Holly Hill has the financial capability to ensure
Project Sponsor

adequate construction, operation, and maintenance of the system, including this SRF project.

Signature

Date

Attachment: HH 3rd BTU and Resiliency Improvements Facility Plan 6.11.24 (2024-R-48 : Wastewater Facility Plan for Incorporation into City's

HOLLY HILL
FLORIDA

STAFF REPORT
CITY OF HOLLY HILL, FLORIDA

City Commission
Resolution

MEETING DATE: **July 9, 2024**
FROM: **Antoine Khoury**
SUBJECT: **A Resolution of the City Commission of the City of Holly Hill, Florida, Approving a Water Facility Plan for Incorporation into the City's SRF-SAHFI Grant Application as Prepared by Mead & Hunt, Inc., Providing for Severability and Providing for an Effective Date.**
NUMBER: **2024-R-49**
APPLICANT:
PLANNER:

DISCUSSION:

The City Commission authorized Supplemental Appropriation for Hurricanes Fiona and Ian (SAHFI) grant applications with the Florida Department of Environmental Protection with Resolution (FDEP) with Resolution 2024-R-41 on June 11, 2024. The application requested up to $11,25 million dollars in water facility improvements. The SAHFI grants are being awarded through the Florida State Revolve Funds (SRF) loan program with a "no payment" obligation.

The City Utility's engineering consultant, Mead and Hunt, facilitated the application and has worked with City staff to assess the utility needs and evaluate various alternatives in the development of a facility plan. The Water Facility Plan is attached as Exhibit A. The plan's goal is to create a more resilient water operation The Water Facility Plan as part of loan application.

The State will issue a SAHFI agreement for water resilience project based on the successful completion of the applications. The agreement shall be brought to the City Commission for ratification. The FDEP grant schedule anticipates that the agreements will be issued in November of 2024.

FISCAL ANALYSIS:

Mead and Hunt, Inc., was provided a task order to complete the SAHFI grant application for $55,000.00. Capital Project 24-WA-06 was created for this grant project. The City is required to complete its application for the SAHFI grant application to access funding. The grant is for Capital Water facility improvements of up to $11.25 million dollars. The SAHFI grants are being awarded through the Florida State Revolve Funds (SRF) loan program with a "no payment" obligation. The SAHFI grant agreement for the potential future water plant improvements will be brought back to council for approval as appropriate.

STAFF RECOMMENDATION:

The City Commission to review and approve the Water Facility Plan for incorporation with the SAHFI application to the State as prepared by with Mead and Hunt, Inc.

COMMISSION GOALS:

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:

THE CITY COMMISSION OF THE CITY OF HOLLY HILL, FLORIDA, APPROVE A WATER FACILITY PLAN FOR INCORPORATION INTO THE CITY'S SAHFI GRANT APPLICATION AS PREPARED BY MEAD & HUNT; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

ATTACHMENTS:

- WTP Resiliency Upgrades Facility Plan - Revised (PDF)

Resolution No. 2024-49

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF HOLLY HILL, FLORIDA, APPROVING A WATER FACILITY PLAN FOR INCORPORATION INTO THE CITY'S SRF-SAHFI GRANT APPLICATION AS PREPARED BY MEAD & HUNT, INC., PROVIDING FOR SEVERABILITY AND PROVIDING FOR AN EFFECTIVE DATE.

A RESOLUTION OF THE CITY COMMISSION OF THE CITY OF HOLLY HILL, FLORIDA, APPROVING A WATER FACILITY PLAN FOR INCORPORATION INTO THE CITY'S SRF-SAHFI GRANT APPLICATION AS PREPARED BY MEAD & HUNT; PROVIDING FOR SEVERABILITY; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, Florida Statutes provide for loans to local government agencies to finance the construction of water facilities; and Florida Administrative Code requires the formal authorization by City Council to formally adopt a facility plan outlining necessary facility improvements to comply with State of Florida funding requirements; and

WHEREAS, formal adoption of the proposed Facility Plan is required for the City Utility to participate in the SAHFI Grant program being administered under the State Revolving Loan Fund Program; and

WHEREAS, the City Commission of the City of Holly Hill, Florida agrees with the findings and summary of necessary improvements as outlined in the Facility Plan for the purpose of creating a more resilient wastewater service.

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

SECTION 1. The foregoing findings are incorporated herein by reference and made a part hereof.

SECTION 2. The City of Holly Hill, Florida formally approves and adopts the Water Facility Plan as written and presented to the City Commission on this date.

SECTION 3. This loan will be one hundred percent principal forgiveness. There will be no revenues pledged for the repayment of this loan.

SECTION 4. The City Manager is hereby designated as the authorized representative to provide the assurances and commitments required to implement the facility plan.

SECTION 5. The Mayor is hereby designated as the authorized representative to execute the Facility Plan which will become the foundation of all activities related to the wastewater facility improvements. The Mayor is authorized to represent the City in carrying out the City's responsibilities under the Facility Plan. The Mayor is authorized to delegate responsibility to appropriate the City Manager to carry out technical, financial, and administrative activities associated with the Facility Plan.

SECTION 6. The legal authority for borrowing moneys to construct this Project is Section 166.111, Florida Statutes and Section 403.8532, Florida Statutes.

SECTION 7. All Resolutions or part of Resolutions in conflict with any of the provisions of this resolution are hereby repealed.

SECTION 8. 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 9. This Resolution shall become effective immediately upon its adoption.

APPROVED AND AUTHENTICATED on the 9th day of JULY, 2024.

PREPARED BY

Mead & Hunt

FINAL

Water Treatment Plant Improvements and Resiliency Upgrades Facility Plan

June 2024

Brad T. Blais, PE
FL # 47130

Attachment: WTP Resiliency Upgrades Facility Plan - Revised (2024-R-49 : Water Facility Plan for Incorporation into City's SAHFI Grant

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Attachment: WTP Resiliency Upgrades Facility Plan - Revised (2024-R-49 : Water Facility Plan for Incorporation into City's SAHFI Grant

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1. Introduction

1.1 Objective

The City of Holly Hill provides water service to residential and commercial customers throughout the City's service area. The City currently operates one water treatment plant which is in need of critical upgrades to obtain critical reliability and resiliency. This facility plan sets forth design criteria and a preliminary cost estimate for the proposed upgrades. A project location map is provided in Figure 1-1. The Plan is prepared in a format consistent with the facilities plan review checklist developed by the Florida Department of Environmental Protection (FDEP). Future State Revolving Fund (SRF) Loan Application requests will be submitted for funding wastewater projects defined herein.

1.2 Background

The City of Holly Hill (City) owns and operates the City of Holly Hill Water Treatment Plant (WTP) located at 453 LPGA Blvd Holly Hill, FL 32117. The WTP is permitted to treat up to 2.3 million gallons per day (MGD). The facility's raw water supply undergoes several treatment processes including aeration, coagulation, lime softening, filtration, corrosion control, fluoridation, and disinfection. Downstream of the disinfection and filtration process, an existing clearwell stores the treated water. Three (3) vertical turbine pumps withdraw water from the clearwell, including two (2) clearwell transfer pumps and one (1) filter backwash pump. Waste generated from the softening process is diverted to the thickener and then combined with sludge from the wastewater treatment plant for final solids processing.

Holly Hill's WTP, and the City's service area, is sited within a low-lying area between 2 major state roads. The roadway elevations are 2-5' above the prevailing ground elevations within the service area and create a closed drainage basin that relies upon drainage canals that discharge into the Halifax River. During extreme storm and high tide events, the drainage canals are tailwater limited and the roadways and WTP site are submerged until the rainfall and tide subsides. The image below (Figure 1-1) depicts the WTP site approximately 24 hours after the peak of Hurricane Ian which made landfall in 2022. This resiliency project is intended to provide emergency backup power, replace at-risk structures, waterproof/elevate electrical equipment, install larger capacity storage tanks, install redundant chemical feed system, and improve the SCADA system to enable remote operation.



FIGURE 1-1: WATER TREATMENT PLANT IMPACTED DURING AND AFTER HURRICANE IAN

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13 Proposed Project

1.3.1 Water Treatment Plant Improvements and Resiliency Upgrades

The City desires to undertake targeted improvements at the City's Water Treatment Plant (WTP) to provide operational resiliency against significant weather events. The proposed improvements shall include the following:

- Install emergency power systems including backup generators and automatic transfer switch (ATS) equipment.
- Replace existing elevated water storage tank with ground storage and associated control equipment including VFD controlled high service pumps.
- Replace, raise and floodproof existing electrical equipment, including the switchgear, motor control centers, and breakers.
- Install new VFD, PLC and metering equipment to enable plant-wide automation and remote monitoring for raw water supply, finished water and disinfection.
- Installation of larger capacity chemical storage and feed equipment.
- Replace gas chlorine with large-capacity liquid bleach (NaOCl) storage tanks and feed equipment with automation and flow-pacing capability.
- SCADA system upgrades to enable remote or multiple system operation locations.
    - Replace PLC and SCADA systems for raw water supply wells, plant and high service pump station.
    - Install continuous water quality monitoring equipment.
    - Install continuous water quality out to distribution system.
    - Automate filter backwash.
    - Automate softening process.
    - Flow pace control for disinfection, recarbonation and chemical feed.
    - Replace lime slaker with flow equipment or new process.

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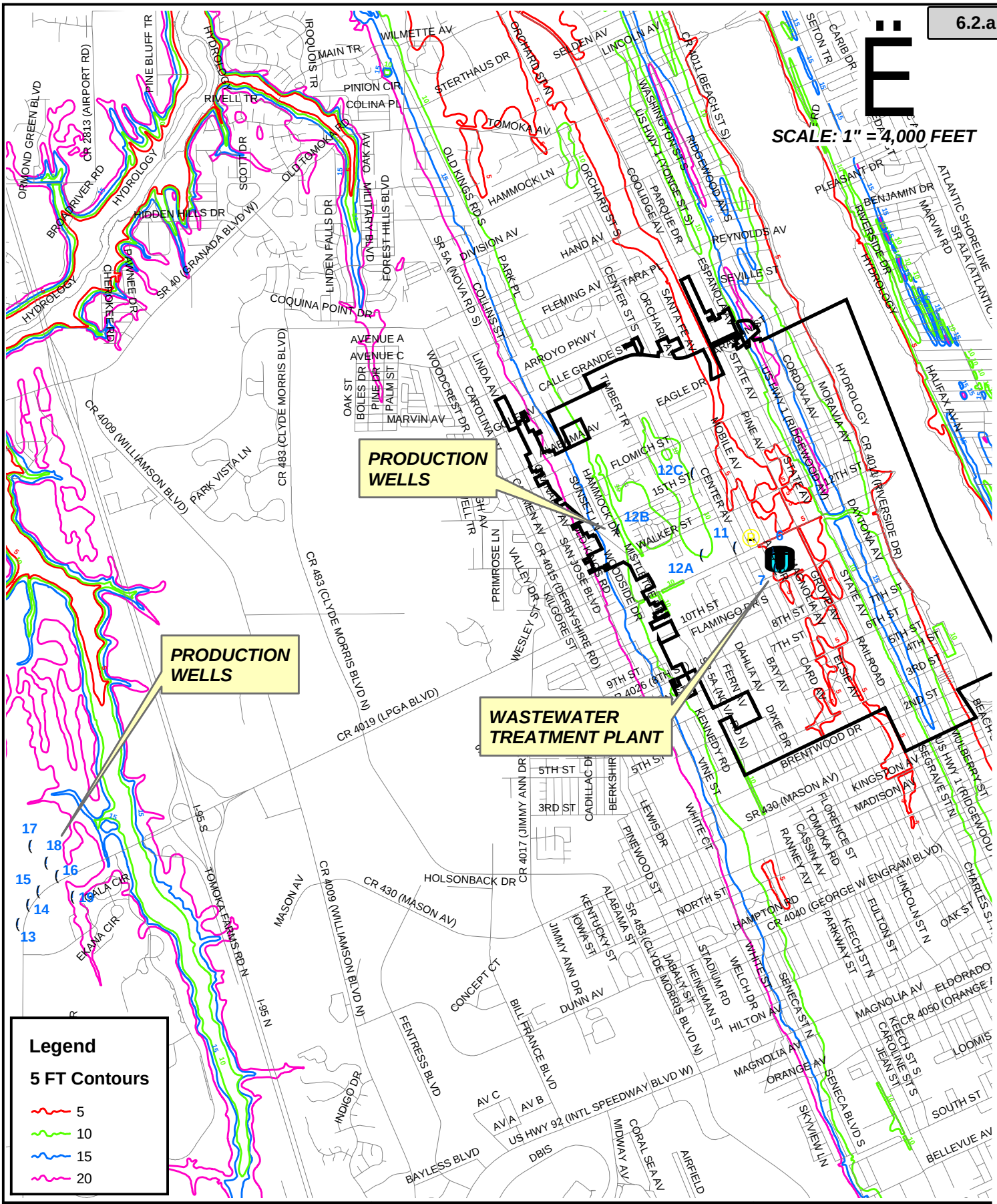
2. Existing Conditions

21 Topography

Figure 2-1 details the service area's location with respect to topographic features. Most of the service area is located on the Silver Bluff Terrace. Surface topography on the Silver Bluff Terrace is relatively flat with an average elevation of approximately 5-10 feet above mean sea level (msl). The service area is bounded by US Hwy #1 and SR #5A to the east and west, respectively. The roadway elevations are at elevation 20.0 (approximately), creating a closed basin that relies upon a single drainage canal discharging to the Halifax River. During severe rainfall and high tide events, the area is subject to significant flooding. Topographic elevations along the Atlantic Coastal Ridge are approximately fifteen to twenty feet higher. This Ridge roughly parallels Nova Road and represents the west boundary of the service area.

The water and wastewater treatment plant sites are located on the eastern, lower portion of the Silver Bluff Terrace. The WWTP/WTP plant site is approximately one mile west of the barrier island and the raw water supply wells are located immediately west of I-95 in the vicinity of the Rima Ridge.

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HH WTP Improvements and Resiliency Updates Facility Plan

REGIONAL TOPOGRAPHY

File Name: FIG_3-1_regional topography.mxd

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22 Geology

Regional geologic data collected by various sources indicates that the wastewater plant is underlain by unconsolidated Pleistocene and Holocene deposits consisting of fine to medium quartz sands, clayey sand and localized shell beds. Surficial deposits are underlain by sediments of Pliocene to late Miocene age consisting of sand, shells and calcareous clay.

Underlying these unconsolidated deposits is the Ocala limestone formation which is composed of cream to white fossiliferous limestone. Its thickness is generally less than 100 feet. Beneath the Ocala limestone is the Avon Park limestone of late-middle Eocene Age. It consists of layers of dark brown dolomite separated by layers of chalky limestone. The formation thickness is estimated at approximately 300 feet. Production wells at the City's wellfield are open holes from 120 feet to 300 feet below grade, all are withdrawing from the Ocala and Avon Park limestone.

23 Hydrogeology

Soil borings taken during the wellfield development program detail the composition of the shallow aquifer. There is a clay layer at a depth of approximately 60 feet. It is the primary confining layer which establishes the top of the artesian aquifer.

This clay layer serves as a confining unit which hydraulically separates the potentiometric heads of the Upper Floridan Aquifer from the surficial aquifer system. Based on data obtained annually by St. Johns River Water Management District typical potentiometric water surface elevations of the Floridian Aquifer in the vicinity of the wellfield range from 10 to 15 feet NGVD. The hydraulic gradient is towards the northeast.

Ground surface elevations in the Holly Hill wellfield and corresponding water surface/surficial aquifer elevations range between 25 to 30 feet NGVD. As a result of the net downward gradient between the surficial aquifer and Upper Floridan Aquifer as well as leakance through the confining layer, the terrace and ridge areas provide some recharge to the Upper Floridan Aquifer.

The source of water for the surficial aquifer is primarily local rainfall. Water is stored in the pore space of the soils. Water exits the surficial aquifer via downward leakance, horizontal flow to drainage ways, and evapotranspiration. The volume available for withdrawal from the Volusia Floridan Aquifer is dependent upon the surficial system. Any discussion of the surficial aquifer in the Holly Hill service area should point out the positive aspects of the Miocene Age clay. This clay helps assure the water quality of the municipal supply. The ion exchange potential of the material forms a protective barrier to the downward migration of pollutants. Nevertheless, improper waste disposal including toxic chemicals must be isolated from the surficial aquifer. The groundwater resource must be protected.

It should be noted that the confining layer exhibits leakance and as such, promotes recharge. This characteristic is valuable as it renews water supplies withdrawn for consumption; however, leakance creates a hydraulic connection from the surficial aquifer to the Upper Floridan aquifer. If contamination of the surficial aquifer occurs, it is possible to compromise the City's water supply.

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24 Surface Water Hydrology

The wastewater treatment plant discharge is to the Halifax River and public access reclaimed water distribution system. The Halifax River is a Class III surface water as defined by the State of Florida. There are no Outstanding Florida Waters in the Holly Hill Service area.

The Halifax River serves as a massive settling basin for the silts generated during the wet season. This is evidenced by the estuarine marsh present at the lagoon's outlet to the ocean and other settlement areas. The silt source from Holly Hill is the 11th Street Canal. This canal transports stormwater from the majority of the service area and discharges to the river south of 11th Street.

This canal is affected by tidal action. Brackish water may encroach on the canal during the dry season. During the wet season, the high flows of fresh water will flush these brackish waters out of the canal and into the river.

The soils in the Holly Hill service area are in general, poorly drained. The terrain on the Silver Bluff Terrace has very little relief. Thus, rainfall is impounded in shallow depressions. The shallow relief minimizes the driving pressure for subsoil water. There is almost no energy gradient to cause lateral movement. This lack of movement accounts for the generally saturated condition of the clastic aquifer. The saturated condition prevents the subsoil from accepting further rainfall. Surface flow is directed to the stormwater system with ultimate discharge to the Halifax River. The eastern portions of the basin, and the WWTP/WTP site, are subject to flooding.

25 Climate

The climate of the Holly Hill service area is subtropical. According to the U.S. Weather Bureau, the mean annual temperature is 70°F, and the normal average rainfall is approximately 52 inches. Generally, precipitation is greatest between June and mid-October and accounts for approximately 60 percent of the year's precipitation. Periods of cloudiness or rainfall lasting over two or three days occur infrequently. These periods are usually caused by a stationary front, such as a northeasters or tropical storms.

The Holly Hill service area is within the "hurricane belt". Generally, hurricanes pass well offshore or lose most of their force crossing the State before they reach the project area, however, recent years has seen increased activity leading to increased exposure and vulnerability to flooding, high winds etc.

26 Terrestrial and Aquatic Plant and Animal Communities

Very few coastal vegetative resources remain in the City. The remaining mangroves, seagrass beds, and estuarine marshes located within the City's boundaries are stressed.

Each of these vegetative communities perform important natural functions. Mangroves and estuarine marshes improve water quality, control erosion, and provide protection from storms by trapping sediments and debris, removing excess nitrogen and phosphorous nutrients, stabilizing shorelines, and buffeting winds. Seagrass beds trap and bind sediments thereby improving water quality and stabilizing the shoreline.

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Mangroves provide a habitat for many types of fish, crustaceans, and birds. Several species of birds which frequent mangroves in Volusia County are considered threatened or endangered, these include: the Snowy Egret, the Brown Pelican, the Roseate Spoonbill and the Least Tern.

Estuarine marshes serve as habitat for many types of birds and a nursery habitat for many fish. Threatened or endangered fowl include the Snowy Egret and the Least Tern. The seagrass beds provide food and protection for many kinds of juvenile fish.

The pinewoods vegetative community is dominated by the slash pine and includes pine flatwoods. These trees form the highest layer of vegetation above the ground and the floor is usually covered by palmetto bushes. Threatened or endangered wildlife found in the pine flatwoods are the Gopher Frog, the Gopher Tortoise and the Indigo Snake. In addition, nesting Bald Eagles and Osprey are found in these communities.

Freshwater marsh occur in seasonally flooded depressions and along streams, creeks, lakes and drainage ways. The dominant plant growth is emergent water plants and water tolerant grasses and sedges. Few trees inhabit marsh areas except for low growing, water tolerant species such as the coastal plains willow. Marshes are well suited for wading birds and aquatic wildlife. Threatened or endangered species found in freshwater marshes are the Florida Sandhill Crane, the Snowy Egret, and the Silver Rice Bat. Occasionally, Bald Eagles inhabit freshwater marshes.

The deciduous communities are characterized by pure or mixed strands of mature hardwood dominant trees. Historically, the upland forest or hardwood hammocks occupy the ridges. Today, small stands (less than 100 acres) are scattered throughout the County. The City contains only a few of these stands. Vegetation consists of live oak, laurel oak, hickory trees and, if conditions are suitable, red cedar, cabbage palm, magnolia, and red bay. Threatened or endangered wildlife associated with these communities are, the Indigo Snake and the Gopher Tortoise, The Osprey also nests in these areas.
Improved pasture sites are 75 to 95 percent open grasslands with a few scattered trees. Few native wildlife species inhabit these areas because of the lack of available food. Common garden varieties of birds, such as the house sparrow and starling make up the majority of wildlife in these areas.

The sites occupied by the wastewater collection system are fully developed. Rehabilitation of the existing improvements will have no detrimental impact upon flora and fauna or threatened and endangered species.

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3. Existing Water Treatment Plant

31 General

3.1.1 System Description

The City of Holly Hill is a regional provider of water service and operates a single water treatment plant with a rated capacity of 2.3 MGD. The existing facility was built in the 1970's and is operating with many of the original process components and systems. The plant generally operates at an average daily flow of 1.2 MGD with a peak capacity of 3.50 MGD. It is a conventional lime softening plant with filtration. A map illustrating primary water system components is included as Water supply for the City of Holly Hill is derived from a series of Upper Floridan aquifer wells installed inside and outside of the City's service area, (as shown in Figure 3-1). Historical growth of the area has not required the installation of new wells to meet increased demand. The City's eastern wells are sited along the formation identified as the Atlantic Coastal Ridge. The western wells are sited along the Rima Ridge. Groundwater is withdrawn from the Upper Floridan Aquifer (UFA) in both the eastern and central recharge wellfields. Water quality and well levels within both the eastern and western wellfields has remained consistent over the past ten years. Moreso, the existing raw water supply can meet peak day flows up to 6.5 MGD with an assumed availability factor of 2 – 2.5. The City withdraws approximately 10% and 90% of its raw water from the eastern and western wellfields, respectively. Judicious management of the resource has enabled the City to supply its customers with a reliable source of high quality groundwater.

Figure 3-1**.** Additional details relative to the treatment plant are included within Section 3.3.

The water plant is served by 12 water supply wells, 5 eastern and 7 western. Each of the wells is 250'-300' deep and withdraws fresh groundwater from the Floridan Aquifer. All raw water is discharged to the WTP for subsequent treatment and distribution. The City's storage capacity includes 1.0 MG storage tank, 0.15 MG elevated water tower as well as clearwell storage. Additional information relative to raw water supply is included within Section 3.2

The finished water distribution system includes approximately 354,000 LF of distribution piping and the elevated storage tank.

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3.2 Raw Water Supply

3.2.1 Water Supply and Production Areas

Water supply for the City of Holly Hill is derived from a series of Upper Floridan aquifer wells installed inside and outside of the City's service area, (as shown in Figure 3-1). Historical growth of the area has not required the installation of new wells to meet increased demand. The City's eastern wells are sited along the formation identified as the Atlantic Coastal Ridge. The western wells are sited along the Rima Ridge. Groundwater is withdrawn from the Upper Floridan Aquifer (UFA) in both the eastern and central recharge wellfields. Water quality and well levels within both the eastern and western wellfields has remained consistent over the past ten years. Moreso, the existing raw water supply can meet peak day flows up to 6.5 MGD with an assumed availability factor of 2 – 2.5. The City withdraws approximately 10% and 90% of its raw water from the eastern and western wellfields, respectively. Judicious management of the resource has enabled the City to supply its customers with a reliable source of high quality groundwater.

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Figure 3-1
Water Treatment System Components

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33 Water Treatment

3.3.1 Existing Treatment Processes

A schematic diagram depicting unit processes for the Holly Hill WTP is included as Figure 3-2.

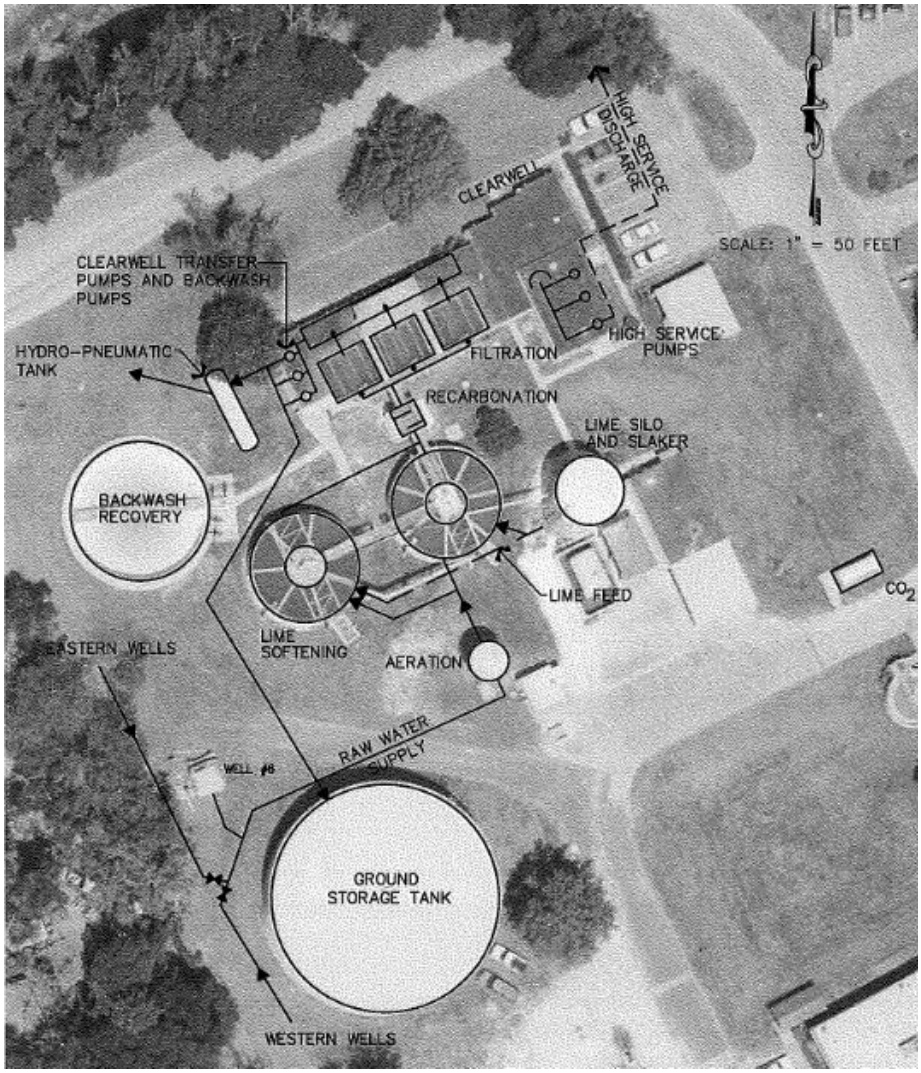


FIGURE 3-2: HOLLY HILL WTP SCHEMATIC

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3.3.2 Aeration Process

The first treatment process at the Holly Hill Plant is aeration. In this process, air and water are brought into contact. The objective is to transfer volatile substances from the water to the air. The principal effects of aeration include the following:

- Reduce the concentration of hydrogen sulfide.
- Reduce the concentration of carbon dioxide.
- Reduce the concentration of volatile organic compounds.

Since the objective of the process is to transfer volatile substances from the liquid to air, the rate of transfer is important. The theory regarding this process is termed “Henry’s Law”. Substances like carbon dioxide and hydrogen sulfide with high Henry’s Law constants are easily removed by aeration. The optimum aeration treatment system is one that includes a high surface area for mass transfer per unit volume. That surface area is provided by the weir length in the tray aerators. The flower petal shape has a weir length that is 200% of the weir length of a circular tray aerator.

Important design considerations include sufficient natural ventilation and corrosion resistant material. Slime and algae growth will occur on these units. This may be controlled by treating the source water with chlorine or with periodic cleansing.

Raw water from the City's wellfields enter the plant through a piped system that overflows into a multiple tray natural draft aerator (see Figure 3-3). The plant has one aerator. It has a nominal diameter of 12 feet. There are 6 trays in each unit The estimated surface area for the trays in the aerator is 160 square feet.



FIGURE 3-3 TRAY AERATOR

The design standard for multiple tray aerator design is 20 gallons per minute per square foot. This value was derived from "Water Treatment Plant Design" a text prepared by American Water Works Association and the American Society of Civil Engineers.

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The actual design loading at the plant is 10 gallons per minute per square foot of tray area. The aeration structure has sufficient capacity for its 2.30 MGD rating and could accept peak flows of 3.50 MGD with no detrimental effects. Thus, overall capacity is 2.30 MGD.

3.3.3 Lime Softening Process

The Holly Hill Plant utilizes chemical precipitation with lime operating at a pH between 9.6-9.8 to reduce the raw water's hardness and to enhance clarity before filtration. The plant reduces total hardness by approximately 200 mg/l. Hardness is defined as the sum of the concentration of multivalent ions (primarily calcium and magnesium.) Hardness is expressed in terms of equivalent milligrams per liter of calcium carbonate.

The degree of hardness acceptable to the public varies. The American Water Works Association established a target range for total hardness of 80 - 100 mg/l. Holly Hill's finished water falls within that range.

Water, post aeration, enters the primary mixing and reaction zone of the solids contact clarifier where it is mixed with previously formed slurry, lime and a polymer. The second step is the secondary mixing and reaction zone. In this zone, the softening reaction approaches equilibrium. The lime is fully reacted. Calcium carbonate crystal size and density are increased. Treated water flows upward and slurry solids settle out in the clarifier. Excess sludge is collected in the sludge concentrators and periodically drawn off. Since lime softening creates excess solids, sludge removal is essential to the maintenance of treatment.

The solids contact process requires operator attention to maintain and control the solids inventory and chemical feeds.

Solids contact softening basins combine mixing, residuals recirculation and sedimentation in one basin as shown in Figure 3-4.



FIGURE 3-4 SOLIDS CONTACT CLARIFIERS

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The design criteria for this equipment is influenced by field performance. The surface loading rate in the sedimentation zone is usually in the range of 1.0 to 1.75 gallons per minute per square foot. The unit at the plant has the following design characteristics:

- Side water depth 16 feet
- Contact time (1,600 gpm) 30 minutes
- Surface loading rate (1,600 gpm) 1.4 gpm/ft^2

Based upon the foregoing, the softening process is rated 2.30 MGD (1.15 MGD) per train. Using surface loading rates as the critical component, peak flows of 3.5 MGD would fall within the established criteria. Thus, the overall capacity is 2.30 MGD.

3.3.4 Recarbonation Process

Carbon dioxide gas is used to lower the pH and stabilize lime softened water. After stabilization, calcium carbonate is unlikely to precipitate onto the filter media. The carbon dioxide combines with unprecipitated calcium carbonate to form soluble bicarbonate. The basin design includes an underflow baffle wall and an overflow baffle wall to reduce short circuiting of the flow and assure a complete reaction with the pressurized carbon dioxide feed.

The City purchases carbon dioxide in bulk quantities and stores it in a refrigerated tank installed horizontally at site (See Figure 3-5). The liquid carbon dioxide is stored at a temperature of 0°F. A vaporizer is provided to convert liquid carbon dioxide to a vapor for injection and the refrigeration unit helps to control tank pressure based on operation. The carbon dioxide gas is forced into solution under pressure. The carbonated air and water is injected by diffuser. The reaction is rapid requiring only 60 — 90 seconds detention between the injection point and the pH control probe. The reaction will be completed within three minutes.



FIGURE 3-5 CARBON DIOXIDE SYSTEM

Recarbonation utilizing pressurized solution feed (PSF) results in rapid adsorption by the high pH water leaving the softener. The volume in the carbon dioxide basin is 1,016 cubic feet (7,600 gallons). At a peak flow of 2,430 gallons per minute (3.5 MGD), the detention time is 3.12 minutes. Process testing has demonstrated that 99% of the reaction will take place within three minutes of chemical injection. The "10 State Standards" recommends a mixing zone of three minutes and a submergence of at least 7.5 feet to reduce gas release at the surface. The submergence at the plant is 10 feet. The primary limitation for this process is the hydraulic

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capacity of the structure. As flow increases beyond 2,450 gallons per minute there will be some flow crossing over the top of the baffle wall. This should not adversely affect operating results. Thus, the plant's peak capacity is 3.5 MGD.

3.3.5 Filtration Process

Filtration provides two functions. It removes suspended material and provides a second barrier against the transmission of waterborne disease. Selection of the filter media is also an important element of filter designs. Holly Hill uses silica sand media. The existing sand filters use a single media and porous plates to remove suspended solids. The filters are backwashed at regular intervals, waste backwash water is returned to the backwash recovery basin.

The primary design constraints for the filtration process are flow rate and backwash rate. The surface area in each filter is 272 square feet. The (3) cells have a total area of 816 square feet. Ten (10) state Standards references that “the rate shall not exceed three gallons per minute per square foot of filter area except where in-plant testing has demonstrated satisfactory results at higher rates.” In a similar vein, the 10 State Standards for filter backwash in 20 gallons per minute per square foot or the rate necessary to provide a 50% expansion of the filter bed.



FIGURE 3-6 SAND FILTER

The filter at Holly Hill’s plant (above) has the following design characteristics:

- Peak Filtration 2.97 gpm/ft^2
- Backwash Rate 20 gpm/ft^2

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3.3.6 Disinfection

Disinfection of water refers to the removal or inactivation of pathogenic organisms. Disinfection does not mean sterilization. The result of effective disinfection is the production of potable water. Chlorine has long been recognized as an effective and efficient disinfection agent.

Experimentation with the mixtures of ammonium hydroxide and hypochlorite resulted in the production of chloramines. Chloramines meet disinfection requirements and also improves the taste and odor of the finished product.

Currently, at Holly Hill, gaseous chlorine (as shown in Figure 3-7) is fed via solution ejectors. The primary injection points for chlorine injection are at the recarbonation basin with an alternative injection point at the effluent weir chambers. Chlorine is fed first followed by ammonia injection.



FIGURE 3-7 GASEOUS CHLORINE

Chlorine gas is an effective means of chlorine feed; however, reporting requirements associated with the EPA's risk management program have made gas feed systems less desirable. Holly Hill also faces constant flooding impact of the chlorine gas area even with routine rainstorms per ground level existing installations.

An alternative system is liquid sodium hypochlorite, (NaOCl). The product has a limited shelf life and will degenerate with extreme heat or UV exposure. As such, it is recommended that storage tanks be opaque, covered and insulated to minimize heat and UV exposure. The stability of hypochlorite solutions is also affected by the presence of heavy metals such as iron, copper nickel or cobalt. The actual decay rate of NaOCl solutions is variable and dependent upon solution strength. Higher concentrations of NaOCl will deteriorate more rapidly than lower strength solutions. The most stable solutions are those of low hypochlorite concentration, 10% or less, stored in the dark at 70°F.

Typical commercial concentrations are delivered at a solution strength of approximately 12%. Therefore, an average decay rate of up to 10% may be assumed during a two-week period. To minimize degradation, quantities stored on-site should be limited to a two-week supply with weekly deliveries preferable.

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NaOCl functions as a disinfecting agent by virtue of its high oxidation potential terms of "pounds per day". For example, a facility feeding 500#/day of gaseous chlorine would feed approximately 500 gal/day of 12% NaOCl solution. The Holly Hill Plant has an average daily chlorine demand of approximately 125 #/day, thereby corresponding to 125 gal/day of 12% NaOCl.

3.3.7 Sludge Handling Facilities

Holly Hill operates one gravity thickener (see Figure 3-8) that is used to concentrate sludge prior to dewatering. The thickener has a diameter of 20 feet (314 sq. ft) and a side water depth of 10 feet. The design criteria for gravity thickeners addresses solids loading rate and surface loading rate. The recommended range for solids loading is 30 - 60 pounds per square foot. The recommended range for surface loading rate is 200 – 350 gallons/day per square foot.



FIGURE 3-8 SLUDGE GRAVITY THICKENER

The loadings at the plant are summarized as follows:

- Solids Loading Rate 30 pounds/square foot
- Surface Loading Rate 250 gallons/day/square foot

These structures and the mechanical equipment are more than sufficient to concentrate the sludge prior to dewatering.

3.3.8 Sludge Dewatering

Thickened sludge is pumped from the water plant to the sludge holding tank at the wastewater plant. Here, it is combined with sewage sludge, the blended product is aerated. Blending lime sludge with sewage sludge (biosolids) raises the pH of the material. Doing so decreases the detention time necessary to achieve Class ‘B‘ compliance. The blended sludge is dewatered via mechanical belt presses and land applied.

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3.3.9 Plant Operations

From an operational perspective, the water plant permit requires 16-hour staffing per day. All equipment are individually and locally controlled via their respective control panels and also via local access and control of manual valves. During a storm event, given lack of automation and remote monitoring/control, 24-hour staffing is required. Additionally, plant access is further impacted due to the flooding at the access road and parking area of the facility. Under such conditions, operators are unable enter the site and/or access plant equipment safely. Flooding of 6" to 2 ft of water, per the last major hurricane event, presented trip hazards, risk of electrical shock and unsafe exposure to chemicals such as ammonia, polymer and chlorine gas.

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4. Proposed Water Treatment Plant (WTP) Alternatives

Given the age of many existing plant components, and the need for adjustments for improved resiliency, a series of plant upgrades have been identified. Proposed improvements include: plant upgrades via improvement in automation, remote monitoring, equipment redundancy, replacement of at-risk structures/equipment, installation of emergency power and floodproofing electrical equipment.

4.1.1 Project Alternative Evaluation Matrix

Each project element discussed contains alternatives that were considered for implementation and feasibility. Each element alternative was ranked using an evaluation matrix that is based on cost, resiliency, and overall operability, reliability, and automation. Higher values reflect a more desirable outcome. The evaluation matrix includes the following criteria:

- Cost – This criterion involves comparing total cost of construction (with present worth analysis) for the project. The cost estimates are planning level estimates. The scoring scale is between 1 and 3 with 3 being the lowest cost option and 1 being the highest cost option.
- Resiliency – This criterion measures the element's specific improvement and upgrade to resiliency and redundancy within the facility. The scoring scale is between 1 and 3 with 1 being the least resilient option and 3 being the most resilient option.
- O&M/ Reliability - This criterion compares the O&M/Reliability of each option once the project is complete. The scoring scale is between 1 and 3 with 3 being option with lowest O&M, highest reliability, and least complex with the maximum enhancement of automation and remote operation and 1 being option with highest O&M, least reliability, and most complex with the least enhancement of automation and remote operation.
- Goals – This criterion measures the project's alignment with the stated purpose of the project. The scoring scale is between 1 and 3 with 3 being the option that most closely aligns to the overall goals and 1 being the option that adheres to the overall goals the least.

4.2 Aerator Improvements and Replacement

The existing structure and fiberglass trays were completed in 1972 and is approaching its end of life. Given the extensive corrosion of the system, replacement or repair of the trays is necessary. The equipment in use at the Plant is a multiple tray aerator consisting of six trays and an aerator pan. Raw water is distributed at the top; cascades from each tray and is collected at the base.

4.2.1 Alternative 1 – Aerator System Replacement and Upgrade

Alternative 1 considers the replacement and structure upgrade of the tray aerators with new trays and hardware, new screening, bypass piping, access ladder and platforms, wash-down water supply and chlorine feed to the raw water supply. Figure 4-1 displays the proposed Westech aerator.

Attachment: WTP Resiliency Upgrades Facility Plan - Revised (2024-R-49 : Water Facility Plan for Incorporation into City's SAHFI Grant

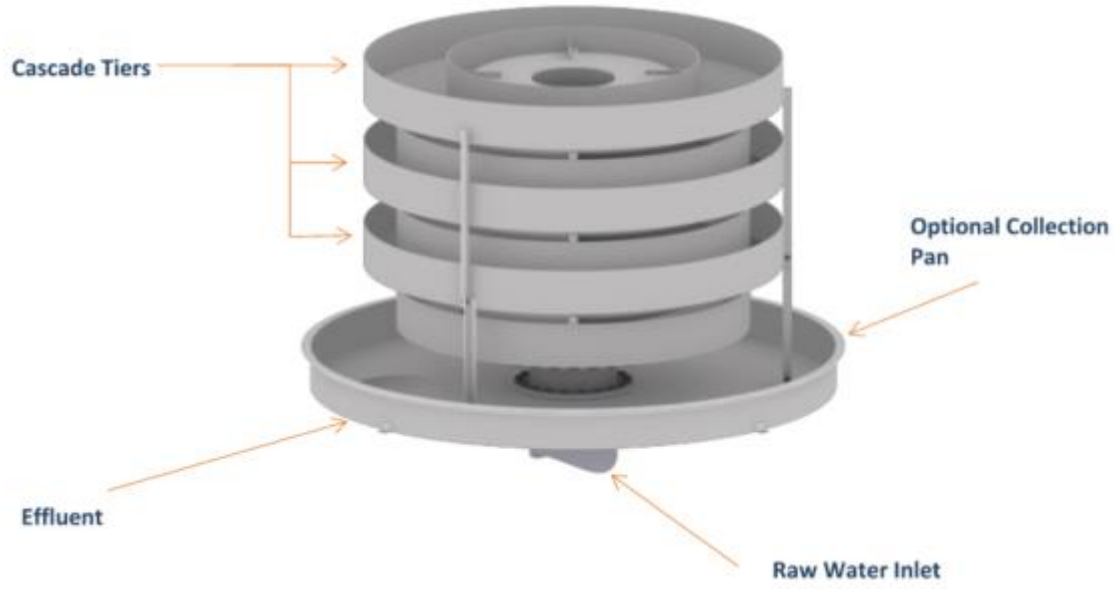


FIGURE 4-1 WESTECH CASCADE AERATOR

4.2.1 Alternative 2 – Repair of Existing Aerator System

Given the existing tray aerators are rated for 2.3 MGD, alternative 2 considers the repair and refurbishment of each tray to restore the system and prevent further corrosion. The approach on this option considers conducting work on one tray at a time to clean, repair and re-coat the trays.



FIGURE 4-2 CORRODED AERATOR TRAY

4.2.2 Alternative 3 – No Action

This alternative assumes the City will continue to operate the existing tray aerators. Considering there is lack in redundancy, this option will not improve resiliency or operational reliability if system bypass cannot be achieved.

Attachment: WTP Resiliency Upgrades Facility Plan - Revised (2024-R-49 : Water Facility Plan for Incorporation into City's SAHFI Grant

4.2.3 Estimated Construction Cost

The present worth capital cost of each of the alternatives outlined above was calculated using best available data and estimates from equipment vendors. The present worth of Alternative 1 – Aerator Replacement is shown in Table 4-1 below.

TABLE 4-1 ESTIMATED CONSTRUCTION COST FOR ALTERNATIVE 1 - AERATOR REPLACEMENT

Item #	Treatment System	QTY	Unit	Unit Cost	Estimated Cost
1	Aerator Trays and Hardware	1	LS	$112,500	$112,500
2	Structural	1	LS	$80,000	$80,000
3	Mechanical	1	LS	$70,750	$70,750
4	Electrical and I&C	1	LS	$30,000	$30,000
				Subtotal (Site & Equipment)	**$293,250**
	Contractor O&P (@20%)				$58,650
	Contingency (@20%)				$58,650
				Total (EOPCC)	**$410,550**

The present worth of Alternative 2 – Aerator Repair is shown in Table 4-2 below. This option includes improving the automation of the existing lime slaking system and installation of a redundant liquid lime system above the flood plain to ensure constant feed of lime.

TABLE 4-2 ESTIMATED CONSTRUCTION COST FOR ALTERNATIVE 2 – AERATOR REPAIR AND REHABILITATION

Item #	Treatment System	QTY	Unit	Unit Cost	Estimated Cost
1	Aerator Trays and Hardware	1	LS	$95,000	$95,000
2	Structural Replacement	1	LS	$80,000	$40,000
3	Coating for H2S	1	LS	$85,500	$85,500
				Subtotal (Site & Equipment)	**$220,500**
	Contractor O&P (@20%)				$44,100
	Contingency (@20%)				$44,100
				Total (EOPCC)	**$308,700**

4.2.1 Recommended Project Alternative

The evaluation matrix for the Aerator Improvements and Replacement is shown in Table 4-3 below. Based on the evaluation matrix, Alternative 1 is the higher ranking alternative and is recommended for implementation.

Attachment: WTP Resiliency Upgrades Facility Plan - Revised (2024-R-49 : Water Facility Plan for Incorporation into City's SAHFI Grant

TABLE 4-3 EVALUATION MATRIX FOR AERATOR IMPROVEMENTS

Alt #	Description	Cost	Resiliency	O&M/ Reliability	Goals	Total
1	Tray Aerator Upgrade	1	3	3	3	**10**
2	Tray Aerator Repair	2	2	3	2	**9**
3	No Action	3	2	2	2	**9**

43 Lime Softening Improvements

4.3.1 Alternative 1 – Upgrade Existing Process

The lime softening clarifier mechanisms (Figure 4-3) have exceeded their design life and require renewal and replacement for continued operation. Additionally, the elevation of the controls and electrical equipment for the lime slaking and feed equipment is below the flood elevation, leaving it vulnerable to emergency events and contributes to safety concerns for the operators during these events. Major elements of Alternative 1 include:

- Replacement of the solids contact clarifier mechanism and bridge for the two clarifiers
- Raising the elevation and floodproofing the lime feed equipment and electrical
- Improve the Lime Slaker and dosing with flow pace control



FIGURE 4-3 SOLIDS CONTACT CLARIFIER

4.3.2 Alternative 2 –Upgrade Existing and Add Alternate Feed System

The water plant currently has a single silo for the storage of lime and feed to the slaking system. As such, if there are issues with the silo, or there is a clog in the solids in the silo, it would require the intervention of an operator. As noted, the system is below the flood plain and reaching the lime facility during a storm event contributing to safety concerns for staff. Major elements of Alternative 2 include:

- Replacement of the solids contact clarifier mechanism and bridge for the two clarifiers
- Improve the Lime Slaker and dosing with flow pace control
- Installation of two (2) new 12,500-gallon chemical storage tanks with mixers for Liquid Lime (Calcium Hydroxide ($Ca(OH)_2$)) slurry storage

Attachment: WTP Resiliency Upgrades Facility Plan - Revised (2024-R-49 : Water Facility Plan for Incorporation into City's SAHFI Grant

- Installation of new $Ca(OH)_2$ dosing pump skids with automation and flow paced dosing
- Construction of a new chemical building that is elevated for the new $Ca(OH)_2$ slurry storage and dosing system
- Add automation to the $Ca(OH)_2$ slurry storage and dosing system to allow for automatic and remote operation

4.3.3 Alternative 3 – Alternative Softening Process

The current lime softening system creates a large amount of sludge, which is sent to the wastewater plant and combined with biosolids prior to dewatering and disposal. Alternative 3 would remove the existing clarifiers and replace them with lime softening pelletizers (per Figure 4-4) and separate the water treatment residuals from the wastewater plant. Major elements of Alternative 3 include:

- Removal and demolition of existing clarifiers, sludge holding tank, and sludge thickener
- Installation of two new pelletizers, sand injection, and waste pellet dumpster
- Demolition of the existing lime silo, slaking and dosing equipment
- Installation of new caustic dosing system above the flood plane
- Automation of installed equipment to allow for automatic and remote operation



FIGURE 4-4 INSTALLATION OF ACTINA PELLETIZER SOFTENING UNIT

4.3.4 Alternative 4 – No Action

This alternative assumes the City will continue to operate and maintain the existing lime softening system as is. Updating the clarifiers and improvements to the lime feed system would not be considered. This will not improve the hazards experienced by the operators in emergency situations, such as flooding and hurricanes.

4.3.5 Cost Effectiveness Analysis

The present worth capital cost of each of the alternatives outlined above was calculated using best available data and estimates from equipment vendors. The present worth of Alternative 1 – Lime Softening Resiliency Upgrades is shown in Table 4-4 below.

Attachment: WTP Resiliency Upgrades Facility Plan - Revised (2024-R-49 : Water Facility Plan for Incorporation into City's SAHFI Grant

TABLE 4-4 ESTIMATED CONSTRUCTION COST FOR ALTERNATIVE 1 – UPGRADE EXISTING PROCESS

Item #	Treatment System	QTY	Unit	Unit Cost	Estimated Cost
1	Clarifier Mechanism	2	EA	$300,000	$600,000
2	Clarifier Bridge Assembly	2	EA	$200,000	$400,000
3	Equipment Elevation	1	LS	$400,000	$400,000
4	Exterior Clarifier Coating	3000	SF	$4	$12,000
5	Mechanical	1	LS	$200,000	$200,000
6	Electrical and I&C	1	LS	$250,000	$250,000
				Subtotal (Site & Equipment)	**$1,862,000**
	Contractor O&P (@20%)				$372,400
	Contingency (@20%)				$372,400
				Total (EOPCC)	**$2,606,800**

The Operational and Maintenance (O&M) for Alternative 1 – Clarifier and Lime System Upgrades is shown in Table 4-5 below. The lime usage is based on data received from the City for the past year and the sludge hauling cost is based on a recently submitted bid for contract held by the City. The Lime softening cleaning cost is data received from the City and the estimated FTE requirement is based on the average loaded regular rate for one year for the City's operators.

TABLE 4-5 ESTIMATED O&M COST FOR ALTERNATIVE 1 – UPGRADE EXISTING PROCESS

Description	Qty	Units	Unit Price	Subtotal
High Calcium Quick Lime	354	TON	$462.67	$163,970
Sludge Hauling	3348	CY	$37.00	$123,876
Lime Softening Cleaning	1	EA	$20,000	$20,000
Estimated FTE Requirement	0.5	EA	$70,000	$35,000
			Total O&M Cost	**$342,846**

The present worth of Alternative 2 – Lime Softening Resiliency and Redundancy is shown in Table 4-6 below. This option includes improving the automation of the existing lime slaking system and installation of a redundant liquid lime system above the flood plain to ensure constant feed of lime.

Attachment: WTP Resiliency Upgrades Facility Plan - Revised (2024-R-49 : Water Facility Plan for Incorporation into City's SAHFI Grant

TABLE 4-6 ESTIMATED CONSTRUCTION COST FOR ALTERNATIVE 2 – UPGRADE EXISTING AND ADD ALTERNATE FEED SYSTEM

Item #	Treatment System	QTY	Unit	Unit Cost	Estimated Cost
1	Clarifier Mechanism	2	EA	$300,000	$600,000
2	Clarifier Bridge Assembly	2	EA	$200,000	$400,000
3	Lime Tank (12,500 Gal)	2	EA	$75,000	$150,000
4	Dosing Pump Skid	1	LS	$100,000	$100,000
5	Pre-Engineered Metal Enclosure	1	LS	$250,000	$250,000
6	Exterior Clarifier Coating	3000	SF	$4	$12,000
7	Mechanical	1	LS	$300,000	$300,000
8	Electrical and I&C	1	LS	$350,000	$350,000
				Subtotal (Site & Equipment)	**$2,162,000**
	Contractor O&P (@20%)				$432,400
	Contingency (@20%)				$432,400
				Total (EOPCC)	**$3,026,800**

The Operation and Maintenance (O&M) for Alternative 2 – Clarifier Upgrade and Redundancy is shown in Table 4-7below. The lime usage is based on data received from the City for the past year and converted to the average dosing rate of slaked lime and average treated water flow rate of the plant to estimate Liquid Lime requirements. The sludge quantity was estimated based on testing performed, which indicated the process would yield approximately 25% less sludge and the sludge hauling cost is based on a recently submitted bid for contract held by the City. The Lime softening cleaning cost was assumed to be lower as liquid lime has nearly all grit removed, and the estimated FTE requirement is based on the average loaded regular rate for one year for the City's operators.

TABLE 4-7 ESTIMATED O&M COST FOR ALTERNATIVE 2 – UPGRADE EXISTING AND ADD ALTERNATE FEED SYSTEM

Description	Qty	Units	Unit Price	Subtotal
Cal-Flo	243,323	GAL	$0.98	$238,457
Sludge Hauling	2511	CY	$37.00	$92,907
Lime Softening Cleaning	1	EA	$10,000	$10,000
Estimated FTE Requirement	0.1	EA	$70,000	$7,000
			Total O&M Cost	**$348,364**

The present worth of Alternative 3 – Resiliency and Improvements is shown in Table 4-8 below. This option includes removal of the existing lime slaking system and clarifiers and installation of new softening pelletizers with required chemical storage and dosing and ancillary systems.

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TABLE 4-8 ESTIMATED CONSTRUCTION COST FOR ALTERNATIVE 3 – ALTERNATIVE SOFTENING PROCESS

Item #	Treatment System	QTY	Unit	Unit Cost	Estimated Cost
1	Sitework	1	LS	$500,000	$500,000
2	Pelletizer Reactors w/Installation	2	LS	$750,000	$1,500,000
3	Caustic Tanks	2	EA	$75,000	$150,000
4	Caustic Pump Skids	2	EA	$100,000	$200,000
5	Pre-Engineered Metal Enclosure	1	LS	$250,000	$250,000
6	Solids Handling w/Cover	1	LS	$250,000	$250,000
7	Clearwell & Transfer Pumping	1	LS	$1,500,000	$1,500,000
8	Structural	1	LS	$500,000	$500,000
9	Mechanical	1	LS	$500,000	$500,000
10	Electrical and E&I	1	LS	$500,000	$500,000
				Subtotal (Site & Equipment)	**$5,850,000**
	Contractor O&P (@20%)				$1,170,000
	Contingency (@20%)				$1,170,000
				Total (EOPCC)	**$8,190,000**

The Operational and Maintenance (O&M) for Alternative 3 – Resiliency and Improvements is shown in Table 4-9below. The caustic usage and sludge quantity are based on projections received from the pelletizer vendor and average treated water flow rate of the plant. The cost of caustic was based on local municipal contract costs over the last few years, which have ranged in cost from ~$800 per ton to ~$1200 per ton. The cost used in the estimate is $800 per ton. The sand cost is an estimate from the vendor. The sludge hauling cost is an estimate based on a higher quality and drier sludge. The Lime softening cleaning cost was assumed to be lower as caustic does not contain grit and cleaning is limited to the tower distributor system. The estimated FTE requirement is based on the average loaded regular rate for one year for the City's operators.

Attachment: WTP Resiliency Upgrades Facility Plan - Revised (2024-R-49 : Water Facility Plan for Incorporation into City's SAHFI Grant

TABLE 4-9 ESTIMATED O&M COST FOR ALTERNATIVE 3 – ALTERNATIVE SOFTENING PROCESS

Description	Qty	Units	Unit Price	Subtotal
Caustic	275	TN	$800.00	$220,000
Sand	80	TN	$300.00	$24,000
Pellet Hauling	1700	CY	$20.00	$34,000
ACTINA Reactor Cleaning	1	EA	$10,000	$10,000
Estimated FTE Requirement	0.2	EA	$70,000	$14,000
			Total O&M Cost	**$302,000**

Present Worth Analyses have been prepared for each of the alternatives utilizing the following criteria:

- Project Life Cycle of 20 years
- Discount rate of 2%
- Capital Costs as of 2024
- Operation, maintenance and replacement costs as of 2024
- Salvage values based on appropriate useful lives of various project components

TABLE 4-10 PRESENT WORTH ANALYSIS FOR LIME SOFTENING IMPROVEMENTS PROJECT ALTERNATIVES

Alt #	Description	EOPCC	Project Life Cycle (years)	O&M	Residual Value	Total Present Worth Cost
1	Upgrade Existing Process	$2,606,800	20	$342,846	$0	$8,212,828
2	Upgrade Existing and Add Alternate Feed System	$3,026,800	20	$348,364	$0	$8,723,043
3	Alternative Softening Process	$8,190,000	20	$302,000	$0	$13,128,133
4	No Action	$0	20	$342,846	$0	$5,606,028

Attachment: WTP Resiliency Upgrades Facility Plan - Revised (2024-R-49 : Water Facility Plan for Incorporation into City's SAHFI Grant

4.3.6 Recommended Project Alternative

The alternatives for the Lime Softening Improvements were evaluated using the criteria described in Section 4.1.1. The evaluation matrix for the Lime Softening Improvements is shown in Table 4-11 below. Based on the evaluation matrix, Alternative 2 – Softening Resiliency is the highest-ranking alternative and is recommended for implementation.

TABLE 4-11 EVALUATION MATRIX FOR LIME SOFTENING IMPROVEMENTS

Alt #	Description	Cost	Resiliency	O&M/ Reliability	Goals	Total
1	Softening Resiliency Upgrades	3	2	3	2	**10**
2	Softening Resiliency	2	3	3	3	**11**
3	Resiliency Upgrades	1	2	3	2	**8**
4	No Action	3	1	1	1	**6**

Attachment: WTP Resiliency Upgrades Facility Plan - Revised (2024-R-49 : Water Facility Plan for Incorporation into City's SAHFI Grant

44 Liquid Disinfection Conversion

4.4.1 Alternative 1 – Combined Chemical Feed and Storage

The existing 2,000# gaseous chlorine containers and the anhydrous ammonia system at the plant represent a safety hazard to operational staff and the surrounding residents. Additionally, these systems are in a flood prone area that is inaccessible during storm events (Figure 4-5).



FIGURE 4-5 CHLORINE STORAGE AREA

Alternative 1 would eliminate gaseous chlorine and ammonia feed systems, install and elevate a new liquid chlorine storage and dosing system that is shared with the wastewater facility, install and elevate a new liquid ammonia storage and dosing system, and add automation to provide redundancy and improved operation to optimize chemical feed and improve water quality. Major elements of Alternative 1 include:

- Removal and demolition of existing gaseous chlorine and anhydrous ammonia feed systems
- Modification of existing chemical feed building at the wastewater facility
- Installation of two (2) new 5,000-gallon double walled poly tanks for Sodium Hypochlorite (NaOCl) storage
- Installation of new NaOCl dosing pump skids with automation and flow paced dosing
- Installation of two (2) new 1,000-gallon double walled poly tanks for SBS storage
- Installation of new SBS dosing pump skids with automation and flow paced dosing
- Construction of new Liquid Ammonium Sulfate (LAS) storage and dosing facility
- Installation of two (2) new 1,000-gallon double walled poly tanks for LAS storage
- Installation of a new LAS dosing pump skid with automation and flow paced dosing

Attachment: WTP Resiliency Upgrades Facility Plan - Revised (2024-R-49 : Water Facility Plan for Incorporation into City's SAHFI Grant

4.4.2 Alternative 2 – Separate Chemical Feed and Storage

Alternative 2 is the same as alternative 1, but the chlorine storage and dosing system for the water plant would be independent for the wastewater plant. Major elements of Alternative 2 for the water treatment facility include:

- Removal and demolition of existing gaseous chlorine and anhydrous ammonia feed systems
- Construction of new NaOCl and LAS storage and dosing facility
- Installation of two (2) new 5,000-gallon double walled poly tanks for NaOCl storage
- Installation of a new NaOCl dosing pump skids with automation and flow paced dosing
- Installation of two (2) new 1,000-gallon double walled poly tanks for LAS storage
- Installation of new LAS dosing pump skid with automation and flow paced dosing

4.4.3 Alternative 3 – Retrofit Existing Infrastructure

Given Alternative 1 and 2 considers new infrastructure for sodium hypochlorite, Alternative 3 considers utilizing and retrofitting the existing chlorine gas structure for conversion to sodium hypochlorite. Major elements of Alternative 3 for the water treatment facility include:

- Removal and demolition of existing gaseous chlorine and anhydrous ammonia feed systems
- Retrofit of existing chlorine gas structure and construction of new and LAS storage and dosing facility
- Installation of two (2) new 5,000-gallon double walled poly tanks for NaOCl storage
- Installation of a new NaOCl dosing pump skids with automation and flow paced dosing
- Installation of two (2) new 1,000-gallon double walled poly tanks for LAS storage
- Installation of new LAS dosing pump skid with automation and flow paced dosing

4.4.4 Alternative 4 – No Action

This alternative assumes the City will continue to operate and maintain the existing liquid disinfection system as is. Conversion to liquid chlorine and ammonia would not be considered. This will not improve the hazards experienced by the operators in emergency situations, such as flooding and hurricanes.

4.4.5 Estimated Construction Cost

The present worth capital cost of each of the alternatives outlined above was calculated using best available data and estimates from equipment vendors. The present worth of Alternative 1 – Combined Chemical Feed and Storage is shown in Table 4-12 below. This cost includes tanks and pump skids for both the water treatment and wastewater treatment facilities.

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TABLE 4-12 ESTIMATED CONSTRUCTION COST FOR ALTERNATIVE 1 – COMBINED CHEMICAL FEED AND STORAGE

Item #	Treatment System	QTY	Unit	Unit Cost	Estimated Cost
1	Site Work	1	LS	$75,000	$75,000
2	NaOCl Tank (5,000 Gal)	2	EA	$50,000	$100,000
3	NaOCl Triplex Pump Skid	2	EA	$75,000	$150,000
4	Pre-Engineered Metal Enclosure	1	LS	$200,000	$200,000
5	Raise Ammonia Tank and Automate Feed	1	LS	$75,000	$75,000
6	Mechanical	2	LS	$100,000	$200,000
7	Electrical and I&C	1	LS	$250,000	$250,000
				Subtotal (Site & Equipment)	**$1,050,000**
	Contractor O&P (@20%)				$210,000
	Contingency (@20%)				$210,000
				Total (EOPCC)	**$1,470,000**

The Operational and Maintenance (O&M) for Alternative 1 – Combined Chemical Feed and Storage is shown in Table 4-13 below. The chemical usage is shown for the NaOCl usage at the water treatment plant only and is based on data received from the City for the past year electricity cost is assumed to be $0.11 per kW-hr.

TABLE 4-13 ESTIMATED O&M COST FOR ALTERNATIVE 1 – COMBINED CHEMICAL FEED AND STORAGE

Description	Qty	Units	Unit Price	Subtotal
NaOCl	48000	GAL	$1.50	$72,000
Power Consumption	15000	kW-hr	$0.11	$1,650
			Total O&M Cost	**$73,650**

The present worth of Alternative 2 – Separate Chemical Feed and Storage is shown in Table 4-14 below. This cost includes tanks and pump skids for both the water treatment and wastewater treatment facilities.

TABLE 4-14 ESTIMATED CONSTRUCTION COST FOR ALTERNATIVE 2 – SEPARATE CHEMICAL FEED AND STORAGE

Item #	Treatment System	QTY	Unit	Unit Cost	Estimated Cost
1	Site Work	1	LS	$75,000	$75,000
2	NaOCl Tank (5,000 Gal)	2	EA	$50,000	$100,000
3	NaOCl Dosing Pump Skid	2	EA	$75,000	$150,000

Attachment: WTP Resiliency Upgrades Facility Plan - Revised (2024-R-49 : Water Facility Plan for Incorporation into City's SAHFI Grant

4	Pre-Engineered Metal Enclosure	1	LS	$400,000	$400,000
5	Raise Ammonia Tank and Automate Feed	1	LS	$75,000	$75,000
6	Mechanical	1	LS	$150,000	$150,000
7	Electrical and I&C	1	LS	$300,000	$300,000
				Subtotal (Site & Equipment)	**$1,250,000**
	Contractor O&P (@20%)				$250,000
	Contingency (@20%)				$250,000
				Total (EOPCC)	**$1,750,000**

The Operational and Maintenance (O&M) for Alternative 2 – Separate Chemical Feed and Storage is shown in Table 4-15 below. The chemical usage is shown for the water treatment plant only and is based on data received from the City for the past year electricity cost is assumed to be $0.11 per kW-hr.

TABLE 4-15 ESTIMATED O&M COST FOR ALTERNATIVE 2 – SEPARATE CHEMICAL FEED AND STORAGE

Description	Qty	Units	Unit Price	Subtotal
NaOCl	48000	GAL	$1.50	$72,000
Power Consumption	15000	kW-hr	$0.11	$1,650
			Total O&M Cost	**73,650**

The present worth of Alternative 3 – Retrofit Existing Infrastructure is shown in Table 4-16 below. This cost includes tanks and pump skids for both the water treatment and wastewater treatment facilities.

TABLE 4-16 ESTIMATED CONSTRUCTION COST FOR ALTERNATIVE 3 – RETROFIT EXISTING STORAGE

Item #	Treatment System	QTY	Unit	Unit Cost	Estimated Cost
1	Site Work	1	LS	$95,000	$95,000
2	NaOCl Tank (5,000 Gal)	2	EA	$50,000	$100,000
3	NaOCl Dosing Pump Skid	2	EA	$75,000	$150,000
4	Retrofit Existing Structure	1	LS	$250,000	$250,000
5	Raise Ammonia Tank and Automate Feed	1	LS	$75,000	$75,000
6	Mechanical	1	LS	$150,000	$150,000
7	Electrical and I&C	1	LS	$300,000	$300,000
				Subtotal (Site & Equipment)	**$1,120,000**

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Contractor O&P (@20%)	$224,000
Contingency (@20%)	$224,000
Total (EOPCC)	**$1,568,000**

The Operational and Maintenance (O&M) for Alternative 3 remains the same as Alternative 2 and is shown in Table 4-17 below. The chemical usage is shown for the water treatment plant only and is based on data received from the City for the past year electricity cost is assumed to be $0.11 per kW-hr.

TABLE 4-17 ESTIMATED O&M COST FOR ALTERNATIVE 3 – RETROFIT EXISTING STORAGE

Description	Qty	Units	Unit Price	Subtotal
NaOCl	48000	GAL	$1.50	$72,000
Power Consumption	15000	kW-hr	$0.11	$1,650
			Total O&M Cost	**73,650**

Present Worth Analyses have been prepared for each of the alternatives utilizing the following criteria:

- Project Life Cycle of 20 years
- Discount rate of 2%
- Capital Costs as of 2024
- Operation, maintenance and replacement costs as of 2024
- Salvage values based on appropriate useful lives of various project components

TABLE 4-18 PRESENT WORTH ANALYSIS FOR LIQUID DISINFECTION PROJECT ALTERNATIVES

Alt #	Description	EOPCC	Project Life Cycle (years)	O&M	Residual Value	Total Present Worth Cost
1	Combined Chemical Feed and Storage	$1,470,000	20	$73,650	$0	$2,674,283
2	Separate Water and Wastewater Chemical Feed and Storage	$1,750,000	20	$73,650	$0	$2,954,283
3	Retrofit Existing	$1,568,000	20	$73,650	$0	$2,772,283
4	No Action	$0	20	$150,000	$0	$2,452,715

4.4.6 Recommended Project Alternative

The alternatives for the Lime Softening Improvements were evaluated using the criteria described in Section 4.1.1 The evaluation matrix for the Lime Softening Improvements is shown in Table 4-19 below. Based on the evaluation matrix, Alternative 1 – Combine Water and Wastewater Chemical Feed and Storage is the highest-ranking alternative and is recommended for implementation.

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TABLE 4-19 EVALUATION MATRIX FOR LIQUID DISINFECTION CONVERSION

Alt #	Description	Cost	Resiliency	O&M/ Reliability	Goals	Total
1	Combine Water and Wastewater Chemical Feed and Storage	2	3	3	3	**11**
2	Separate Water and Wastewater Chemical Feed and Storage	1	3	3	3	**10**
3	Retrofit Infrastructure	2	2	3	2	**9**
4	No Action	3	1	1	1	**4**

45 Potable Water Supply Resiliency

4.5.1 Alternative 1 – Potable Water Improvements

The existing 150,000-gallon elevated water tower is at an elevation that does not allow the City to operate at a higher pressure. Operating at a higher pressure is desired to provide higher system pressures and improved fire flows. The high service pumps are currently installed in the electrical room. This alternative considers decommissioning the tower and improving the resiliency and operational reliability of the high service pumps.

4.5.1 Alternative 2 – Disconnect and Remove Elevated Tank

This alternative considers the disconnection and removal of the elevated tank. Since 75% of meter reading signals are processed via antennas at the tower, a new tower would be required to manage and monitor meter readings.

4.5.2 Alternative 3 – No Action

This alternative assumes no action taken to improve the high service pumping system and retains the elevated water tower which is incapable of providing higher required pressures.

4.5.3 Estimated Construction Cost

The present worth cost of each of the alternatives outlined above was calculated using best available data and estimates from equipment vendors. The present worth of Alternative 1 – Potable Water Resiliency Upgrade is shown in Table 4-20 below.

Attachment: WTP Resiliency Upgrades Facility Plan - Revised (2024-R-49 : Water Facility Plan for Incorporation into City's SAHFI Grant

TABLE 4-20 ESTIMATED COST FOR ALTERNATIVE 1 – POTABLE WATER UPGRADES

Item #	Treatment System	QTY	Unit	Unit Cost	Estimated Cost
1	Tower Decommissioning	1	LS	$50,000	$50,000
2	Mechanical	1	LS	$25,000	$25,000
3	Electrical and I&C	1	LS	$75,000	$75,000
				Subtotal (Site & Equipment)	**$150,000**
	Contractor O&P (@20%)				$30,000
	Contingency (@20%)				$30,000
				Total (EOPCC)	**$210,000**

TABLE 4-21 ESTIMATED COST FOR ALTERNATIVE 2 – DISCONNECT AND REMOVE TOWER

Item #	Treatment System	QTY	Unit	Unit Cost	Estimated Cost
1	Tower Decommissioning and Demolition	1	LS	$225,000	$225,000
2	Mechanical	1	LS	$25,000	$25,000
3	Electrical and I&C	1	LS	$175,000	$175,000
				Subtotal (Site & Equipment)	**$425,000**
	Contractor O&P (@20%)				$85,000
	Contingency (@20%)				$85,000
				Total (EOPCC)	**$595,000**

4.5.1 Recommended Project Alternative

The evaluation matrix for the Potable Water System Improvements and Upgrades is shown in Table 4-22 below. Based on the evaluation matrix, Alternative 1 is the higher ranking alternative and is recommended for implementation.

TABLE 4-22 EVALUATION MATRIX FOR POTABLE WATER SYSTEM IMPROVEMENTS

Alt #	Description	Cost	Resiliency	O&M/ Reliability	Goals	Total
1	Potable Water Upgrade	1	3	3	3	**10**
2	Disconnect and Remove Tower	2	3	2	2	**9**
3	No Action	3	2	2	2	**9**

Attachment: WTP Resiliency Upgrades Facility Plan - Revised (2024-R-49 : Water Facility Plan for Incorporation into City's SAHFI Grant

46 Electrical Replacement

The alternatives for electrical and I&C replacement include complete replacement of primary gear and switch gear (as shown in Figure 4-6) along with a complete rework of the instrumentation and control discussed in detail in Section 4.8.



FIGURE 4-6 POWER DISTRIBUTION

4.6.1 Alternative 1 – Electrical Upgrade and Elevation Above Flood Elevation

The existing high service pump room elevation is within the flood plain. Additionally, the high service pump room houses the plant main electrical gear, leaving it vulnerable to emergency events and contributes to additional safety concerns (see Figure 4-7).

Attachment: WTP Resiliency Upgrades Facility Plan - Revised (2024-R-49 : Water Facility Plan for Incorporation into City's SAHFI Grant



FIGURE 4-7 HIGH SERVICE PUMPS WITH ELECTRICAL EQUIPMENT

Major elements of Alternative 1 include:

- Raising the floor elevation of the high service pump building / electrical room
- Install pump pads to raise the pumps above the flood elevation
- Install new electrical gear on raised pads on the opposite side of the existing electrical equipment
- Replacing all electrical conduit in clearwell gallery hallway
- Demolish and remove the existing electrical equipment

4.6.2 Alternative 2 – New Electrical Building

Alternative 2 considers segregation of electrical and mechanical equipment via installation of a new electrical room near the existing one. This alternative focuses on the installation and upgrade of electrical equipment above the flood plain in a new electrical building or other infrastructure such as an electrical house. Major elements of Alternative 2 include:

- Installing and separating new electrical gear considering raised floors/pads.
- Installing new electrical room as an extension of the existing or a new building.
- Replacing all electrical conduit in clearwell gallery hallway
- New foundation for the new electrical infrastructure.
- Demolish and remove the existing electrical equipment.
- Installing pump pads in the existing room to raise pumps above the flood elevation

Attachment: WTP Resiliency Upgrades Facility Plan - Revised (2024-R-49 : Water Facility Plan for Incorporation into City's SAHFI Grant



FIGURE 4-8 POTENTIAL LOCATION OF NEW ELECTRICAL BUILDING

4.6.3 Alternative 3 – Floodproof Electrical Room

Alternative 3 considers floodproofing the electrical room/building rather than considering the elevation of the electrical gear but also considers the replacement of the aged electrical equipment and gear. Major elements of Alternative 3 include:

- Floodproofing doors, windows etc. where applicable per examples shown in Figure 4-9
- Install new electrical gear on the opposite side of the current electrical room
- Replacing all electrical conduit in clearwell gallery hallway
- Demolish and remove the existing electrical equipment



FIGURE 4-9 EXAMPLES OF FLOODPROOF PRODUCTS

Important considerations should be noted as follows:

- Limitation of existing building infrastructure given it was not designed considering wind and flood loads. This is important if door and window barriers are considered.
- Foundational requirements for the floodproof barriers/walls.
- Labor associated with the installation, removal of the floodproof barriers/products.
- Accessibility to the electrical room/building.
- Backwater valves required.
- Existing and/or replaced electrical equipment are installed with mechanical equipment and plumbing nearby which adds another level of safety concern.
- Floodproof all wall openings other than doors, windows, louvers etc.

Attachment: WTP Resiliency Upgrades Facility Plan - Revised (2024-R-49 : Water Facility Plan for Incorporation into City's SAHFI Grant

4.6.4 Alternative 4 – No Action

This alternative assumes the City will continue to operate and maintain the existing high service pumps and electrical gear/equipment per the current installation. This will not improve resiliency for operators in emergency situations, such as flooding and hurricanes.

4.6.5 Estimated Construction Cost

Capital cost estimates were prepared for each alternative presented based on available data and estimates from vendors. The present worth of Alternative 1 – Electrical Upgrade and Elevation Above Flood Elevation is shown in Table 4-23 below. This cost includes sitework, temporary power and demolition.

TABLE 4-23 ESTIMATED CONSTRUCTION COST FOR ALTERNATIVE 1 – ELECTRICAL UPGRADE AND ELEVATION

Item #	Treatment System	QTY	Unit	Unit Cost	Estimated Cost
1	Electrical	1	LS	$1,140,000	$1,140,000
2	Site Electrical and Civil	1	LS	$225,000	$225,000
3	Structural	1	LS	$250,000	$250,000
				Subtotal (Site & Equipment)	**$1,615,000**
	Contractor O&P (@20%)				$323,000
	Contingency (@20%)				$323,000
				Total (EOPCC)	**$2,261,000**

Capital cost estimates for Alternative 2 – New Electrical Building is shown in Table 4-25 below. This cost includes sitework and demolition.

TABLE 4-24 ESTIMATED CONSTRUCTION COST FOR ALTERNATIVE 2 – NEW ELECTRICAL BUILDING

Item #	Treatment System	QTY	Unit	Unit Cost	Estimated Cost
1	Electrical	1	LS	$1,140,000	$1,140,000
2	Structural	1	LS	$550,000	$550,000
3	Civil and Electrical Sitework	1	LS	$800,000	$800,000
				Subtotal (Site & Equipment)	**$2,490,000**
	Contractor O&P (@20%)				$498,000
	Contingency (@20%)				$498,000
				Total (EOPCC)	**$3,486,000**

Capital cost estimates for Alternative 3 – Floodproof Electrical Room is shown in Table 4-25 below. The cost includes sitework and demolition.

Attachment: WTP Resiliency Upgrades Facility Plan - Revised (2024-R-49 : Water Facility Plan for Incorporation into City's SAHFI Grant

TABLE 4-25 ESTIMATED CONSTRUCTION COST FOR ALTERNATIVE 3 – FLOODPROOF ELECTRICAL ROOM

Item #	Treatment System	QTY	Unit	Unit Cost	Estimated Cost
1	Electrical	1	LS	$1,140,000	$1,140,000
2	Structural	1	LS	$150,000	$150,000
3	Site Electrical and Civil	1	LS	$475,000	$475,000
				Subtotal (Site & Equipment)	**$1,765,000**
	Contractor O&P (@20%)				$353,000
	Contingency (@20%)				$353,000
				Total (EOPCC)	**$2,471,000**

4.6.1 Recommended Project Alternative

The alternatives for the Electrical Improvements were evaluated using the criteria described in Section 4.1.1 The evaluation matrix for Electrical Improvements is shown in Table 4-26 below. Based on the evaluation matrix, Alternative 1 and 2 are tied for the highest-ranking alternative. Based on cost, Alternative 1 is recommended for implementation.

TABLE 4-26 EVALUATION MATRIX FOR ELECTRICAL IMPROVEMENTS

Alt #	Description	Cost	Resiliency	O&M/ Reliability	Goals	Total
1	Electrical and Resiliency Upgrades	2	3	3	3	**11**
2	New Electrical Room	1	3	2	3	**9**
3	Resiliency Improvements	2	2	2	2	**8**
4	No Action	3	1	1	1	**6**

Attachment: WTP Resiliency Upgrades Facility Plan - Revised (2024-R-49 : Water Facility Plan for Incorporation into City's SAHFI Grant

47 Generator Redundancy

4.7.1 Alternative 1 – Complete Redundant Generator with Base Mount Fuel Tank

This alternative involves installing a generator constructed within a hurricane-rated, weatherproof enclosure dedicated to the WTP only. There will be a base mount fuel tank that will raise the generator above the 100-year flood and design storm surge elevation – 8.5 feet. Figure 4-10 displays a typical generator with a base mounted fuel tank.



FIGURE 4-10 EXAMPLE ELECTRICAL GENERATOR

Installation of a backup generator and an automatic transfer switch (ATS) will provide reliable power supply in the event of a flood or other natural disaster. Critical equipment will remain operational maintaining plant operations and treatment.

4.7.2 Alternative 2 - No Action

This alternative assumes the City will continue to operate per current plant operations. This will not address hazards or maintain power during emergency situations, such as flooding and hurricanes.

4.7.3 Estimated Construction Cost

Capital cost estimates were prepared for each alternative presented based on available data and estimates from vendors. The present worth of Alternative 1 – Complete Redundant Generator with Base Mount Fuel Tank is shown in Table 4-27 below. This cost includes sitework.

Attachment: WTP Resiliency Upgrades Facility Plan - Revised (2024-R-49 : Water Facility Plan for Incorporation into City's SAHFI Grant

TABLE 4-27 ESTIMATED CONSTRUCTION COST FOR ALTERNATIVE 1 – GENERATOR ADDITION

Item #	Treatment System	QTY	Unit	Unit Cost	Estimated Cost
1	Generator ATS and Fuel Tank	1	LS	$425,000	$325,000
2	Sitework	1	LS	$95,000	$95,000
				Subtotal (Site & Equipment)	**$420,000**
	Contractor O&P (@20%)				$84,000
	Contingency (@20%)				$84,000
				Total (EOPCC)	**$588,000**

4.7.4 Recommended Project Alternative

The evaluation matrix for the addition of a redundant generator is shown in Table 4-28 below. Based on the evaluation matrix, Alternative 1 is the highest-ranking alternative and is recommended for implementation.

TABLE 4-28 EVALUATION MATRIX FOR GENERATOR ADDITION

Alt #	Description	Cost	Resiliency	O&M/ Reliability	Goals	Total
1	Redundant Generator	2	3	3	3	**11**
2	No Action	1	2	2	2	**7**

Attachment: WTP Resiliency Upgrades Facility Plan - Revised (2024-R-49 : Water Facility Plan for Incorporation into City's SAHFI Grant

4.8 Automation and Remote Monitoring

4.8.1 Alternative 1 – PLC and SCADA Improvements

Automation and remote monitoring provide resiliency and increase operational efficiency especially during flood and storm conditions. The City is currently permitted for 16 hour staffing per day where improvements and upgrades to plant equipment would support 24/7 remote monitoring and process control as well as the potential to shift to 8 hour/day on-site staffing.

The Holly Hill WTP and WWTP are linked via a fiber optic communication network cable. The existing computer monitoring system at the WTP was originally configured with a commercial software platform called, Ifix. The existing system also uses Data Flow Systems. Updates recommended should include new software licensing and integration of new data points. This effort will entail new PLC equipment enabling enhanced monitoring, reporting and control functions.

The following SCADA and automation improvements are proposed:

- Replace and elevate PLC and SCADA systems for raw water supply wells, treatment plant and high service pump station. Consider options such as VTSCADA.
- Install continuous water quality monitoring equipment
- Install continuous water quality out to distribution system
- Upgrade programming to allow remote monitoring and operation of equipment:
    - Automation of filter backwash
    - Automation of the softening process
    - Flow paced control for disinfection, recarbonation, and chemical feed systems.
    - Remote interface capability

The western well improvements also involve installing VFD’s on all seven (7) western well pumps. This also includes incorporating a transmitter on the existing flow meters to monitor flow through SCADA and have a remote interface.

4.8.2 Alternative 2 - No Action

This alternative assumes the City will continue to operate with local and manual operation of equipment and systems. This will not improve or remove the hazards experienced by the operators in emergency situations, such as flooding and hurricanes and will require 24/7 staffing to maintain plant operations.

4.8.3 Estimated Construction Cost

Capital cost estimates were prepared for based on available data and estimates from vendors. The present worth of Alternative 1 – Automation and Remote Monitoring is shown in Table 4-29 below.

Attachment: WTP Resiliency Upgrades Facility Plan - Revised (2024-R-49 : Water Facility Plan for Incorporation into City's SAHFI Grant

TABLE 4-29 ESTIMATED CONSTRUCTION COST FOR ALTERNATIVE 1 – INSTRUMENTATION & CONTROLS UPGRADE

Item #	Treatment System	QTY	Unit	Unit Cost	Estimated Cost
1	Electrical	1	LS	$130,000	$130,000
2	I&C and Programming	1	LS	$880,000	$880,000
3	Sitework/Elevation of Equipment	1	LS	$125,000	$125,000
				Subtotal (Site & Equipment)	**$1,135,000**
	Contractor O&P (@20%)				$227,000
	Contingency (@20%)				$227,000
				Total (EOPCC)	**$1,589,000**

4.8.4 Recommended Project Alternative

The evaluation matrix for the improvements in the PLC/SCADA system is shown in Table 4-30 below. Based on the evaluation matrix, Alternative 1 is the higher ranking alternative and is recommended for implementation given it provides more flexibility and reliability for the facility. The added elevation of the equipment also contributes to improved resiliency.

TABLE 4-30 EVALUATION MATRIX FOR CONTROLS UPGRADE

Alt #	Description	Cost	Resiliency	O&M/ Reliability	Goals	Total
1	Controls Upgrade	3	3	3	3	**11**
2	No Action	1	1	1	1	**4**

Attachment: WTP Resiliency Upgrades Facility Plan - Revised (2024-R-49 : Water Facility Plan for Incorporation into City's SAHFI Grant

5. Engineer's Opinion of Probable Construction Cost

Table 5-1 displays the total cost of all recommended alternatives for the Water Treatment Improvements and Resiliency Upgrades project.

TABLE 5-1: TOTAL RECOMMENDED ALTERNATIVES EOPCC SUMMARY

WTP Upgrades					
Item	**Description**	**Qty**	**Unit**	**Unit Cost**	**Total Cost**
1	Aerator Improvements and Replacement	1	LS	$410,550	$410,550
2	Softening Resiliency - Clarifier and Redundant Lime System	1	LS	$3,026,800	$3,026,800
3	Combine WTP and WWTF Chemical Feed and Storage	1	LS	$1,470,000	$1,470,000
4	Potable Water Improvements	1	LS	$455,000	$455,000
5	Electrical Upgrade and Elevate Above Flood Elevation	1	LS	$2,261,000	$2,261,000
6	Redundant Generator and ATS	1	LS	$560,000	$588,000
7	PLC and SCADA Improvements	1	LS	$1,589,000	$1,589,000
				Total (EOPCC)	**$9,800,350**

Attachment: WTP Resiliency Upgrades Facility Plan - Revised (2024-R-49 : Water Facility Plan for Incorporation into City's SAHFI Grant

HOLLY HILL
FLORIDA

STAFF REPORT
CITY OF HOLLY HILL, FLORIDA

City Commission
Agenda Item

MEETING DATE: **July 9, 2024**
FROM: **Brian Walker**
SUBJECT: **VARIANCE – 217 Walker Street - Request a Variance from the Requirements of Sec. 114-742 (2) A. 2 Requiring that Accessory Structures in All Zoning Districts be Located Behind the Principal Structure on the Lot. Such Request is Made in Order to Place a 80 Square Foot Shed on a Parcel in the R-3 (Single-Family) Zoning District, Located on the South Side of Walker Street, Approximately 250 Feet West of Daytona Avenue, and More Particularly Known as 217 Walker Street; (Christina Sullivan, Applicant) (Brian Walker, City Planner).**
NUMBER: **(ID # 4563)**
APPLICANT: **Christina Sullivan**
PLANNER: **Brian Walker**

INTRODUCTION

VARIANCE - 217 Walker Street - Request a variance from the requirements of Sec. 114-742 (2) A. 2 requiring that accessory structures in all zoning districts be located behind the principal structure on the lot. Such request is made in order to place a 80 square foot shed on a parcel in the R-3 (Single-Family) zoning district, located on the south side of Walker Street, approximately 250 feet west of Daytona Avenue, and more particularly known as 217 Walker Street; (Christina Sullivan, Applicant) (Brian Walker, City Planner).

BACKGROUND

- The lot is part of the J Fitch Walkers Subdivision created in the early 1900s.
- The lot contains a home built in 1939.
- Sec. 78-14 of the Land Development Regulations state that an "Accessory use or structure means any use or structure, clearly incidental, subordinate and related to the principal use or structure and located on the same lot with such principal use or structure. The term shall include but not be limited to satellite dish antennas, windmills, solar energy equipment, detached garages and carports, above-grade swimming pools and utility sheds."

DISCUSSION: The homeowner at 217 Walker Street has submitted a request for a shed in the

front yard of their house. The shed will be approximately 45 feet from the front property line and 60 feet from the road. Under current regulations a shed is considered an accessory structure and is therefore required to be placed behind the main structure. This is because the home was built between 2 and 6 feet from the rear property making it nearly impossible to place a shed in the backyard while meeting the minimum required setback.

However, the Land Development regulations state as follows:

- Sec. 114-742 (2) A. 2 of the Land Development Regulations state in part that,"Accessory structures and uses in all zoning districts are to be located behind the principal structure on the lot."

In order for staff to consider approving the applicant's request, the applicant would need to receive a variance approving the location of the shed. Therefore, the applicant has submitted an application for a variance request.

Should the variance request be granted, the applicant will be permitted to place a shed up to 80 square feet in the front yard.

REQUESTED VARIANCE:

Request a variance from the requirement of Sec. 114-742 (2) A. 2 that accessory structures and uses are to be located behind the principal structure on the lot."

In order to grant the variance request the commission must find that the request meets the requirements of Sec. 82-317.

VARIANCE CRITERIA - Sec. 82-317

CRITERIA No. 1:
That special conditions and circumstances exist which are peculiar to the land, structure or building involved, as distinguished from the applicant himself, and which are not applicable to other lands, structures or buildings in the same zoning district:

FINDINGS OF FACT No. 1:
The home on the property was built in 1939 and placed between 2 and 6 feet from the rear property line (the house is not square on the property), basically eliminating a useable backyard.

Criteria met? *Yes*

CRITERIA No. 2:
That the special conditions and circumstances do not result from the actions of the applicant:

FINDINGS OF FACT No. 2:
The home was not placed in its location by the applicant.

Criteria met? *Yes*

CRITERIA No. 3:
That granting the variance requested will not confer on the applicant any special privilege that is denied by this subpart to other lands, buildings or structures in the same zoning district:

FINDINGS OF FACT No. 3:
Granting the variance will not confer a special privilege on the applicant. The applicant requests the variance in order to place a shed in the front yard because he does not have a useable backyard.

Criteria met? *Yes*

CRITERIA No. 4:
That a literal interpretation of the provisions of this subpart would deprive the applicant of rights commonly enjoyed by other properties in the same zoning district under the terms of this subpart, and would work an unnecessary and undue hardship on the applicant:

FINDINGS OF FACT No. 4:
A literal interpretation of the provisions of this subpart would deprive the applicant of rights commonly enjoyed by other properties in the same zoning district under the terms of this subpart, and would work an unnecessary and undue hardship on the applicant.

Criteria met: *Yes*

CRITERIA No. 5:
That the variance granted is the minimum variance necessary to make possible the reasonable use of the land, building or structure:

FINDINGS OF FACT No. 5:
The property does not have a useable backyard. The proposed shed is approximately 80 square feet and meets all of the required setbacks. The requested variance is the minimum necessary to make reasonable use of the property.

Criteria met? *Yes*

CRITERIA No. 6:
That the grant of the variance will be in harmony with the general intent and purpose of this subpart and the city's comprehensive plan, and that such variance will not be injurious to the area involved or otherwise detrimental to the public welfare:

FINDINGS OF FACT No. 6:
Granting the variance is in harmony with the general intent and purpose of the Comprehensive Plan and will not be injurious to the area involved or otherwise detrimental to the public welfare.

Criteria met? *Yes*

FINDINGS OF FACT: Staff finds that the applicant has met all of the criteria as stated above to grant the requested variance.

ADDITIONAL INFORMATION:

Sec. 82-320. - Expiration.
A variance shall begin to serve the purpose for which it was granted within 18 months following the granting action by the city commission and shall otherwise become void. However, a shorter period of time may be stipulated by the city commission in an individual case as a condition imposed pursuant to Section 82-316.

BOARD OF PLANNING AND APPEALS RECOMMENDATION
On July 1st, 2024, the Board of Planning and Appeals unanimously recommended approval of the requested variance.

STAFF RECOMMENDATION:

Staff recommends with conditions, approval of the request for a variance from the requirements of Sec. 114-742 (2) A. 2, requiring that accessory structures and uses in all zoning districts be located behind the principal structure on the lot, as applied to a shed no larger than 80 square feet on a parcel in the R-3 (Single-Family) zoning district, located on the south side of Walker Street, approximately 250 feet west of Daytona Avenue, and more particularly known as 217 Walker Street

Staff recommends the following conditions be attached to the approval of the variance request.
1. The shed cannot be replaced with anything but another shed that is no larger than 80 square feet.
2. The variance applies to the shed only and nothing else.
3. The shed must meet all setback requirements for the R-3 zoning district.
4. The shed must be well maintained and shall not be allowed to deteriorate, rot, become a home to vermin, or otherwise become a source of blight or it shall become subject to code enforcement action by the City and can be ordered to be removed.

- Application Package (PDF)
- Example of type of shed proposed (PDF)
- Photos and Map (PDF)

VAR 2024 000054

V#_____

RECEIVED
MAY 6 2024

HOLLY HILL
FLORIDA

1065 Ridgewood Avenue, Holly Hill, FL 32117
TELEPHONE: (386) 248-9442 PERMITDESK@HOLLYHILLFL.ORG

VARIANCE

COMPLETE APPLICATION PACKET MUST BE SUBMITTED BY APPLICATION DUE DATE IN ORDER TO MEET THE DEADLINE FOR THE DESIRED MEETING

PROPERTY

PARCEL ID #: 4242500070100

ADDRESS: 217 Walker St

TOTAL ACREAGE: .14 (6,081 sq.ft)
USE OF PROPERTY: ☒ RESIDENTIAL ☐ NON-RESIDENTIAL

ZONING: R-3
FUTURE LAND USE: LDR

TYPE OF STRUCTURE: ☒ SHED ☐ FENCE ☐ POOL ☐ SCREEN ENCLOSURE ☐ ADDITION ☐ SINGLE FAMILY HOME 8 x 10 shed

DESCRIPTION OF STRUCTURE: Shed

TYPE OF VARIANCE:

☐	FRONT YARD SETBACK	REQUIRED: ____ FT.	PROPOSED: ____ FT.
☐	SIDE YARD SETBACK	REQUIRED: ____ FT.	PROPOSED: ____ FT.
☐	SIDE STREET SETBACK	REQUIRED: ____ FT.	PROPOSED: ____ FT.
☐	REAR YARD SETBACK	REQUIRED: ____ FT.	PROPOSED: ____ FT.
☐	MINIMUM LOT SIZE	REQUIRED: ____ SQ. FT.	ACTUAL: ____ SQ. FT.
☐	WIDTH AT BUILDING LINE	REQUIRED: ____ FT.	ACTUAL: ____ FT.
☐	HEIGHT	REQUIRED: ____ FT.	PROPOSED: ____ FT.

* Variance to place shed in front of house

IS THIS REQUEST FOR A STRUCTURE THAT HAS ALREADY BEEN BUILT? ☐ YES ☒ NO

IS THE PROPERTY AVAILABLE FOR INSPECTION WITHOUT APPOINTMENT? ☐ YES ☒ NO

OWNER

NAME: Christina Sullivan
COMPANY:

ADDRESS: 217 Walker St

CITY: Holly Hill
STATE: FL
ZIP: 32117

PHONE: 386-681-7563
EMAIL: Dina.Sullivan2012@icloud.com

Revised 2018

Attachment: Application Package (4563 : Variance Request - 217 Walker Street)

V#_____

HOLLY HILL
FLORIDA

1065 Ridgewood Avenue, Holly Hill, FL 32117
TELEPHONE: (386) 248-9442 PERMITDESK@HOLLYHILLFL.ORG

AGENT/CONSULTANT

NAME: N/A	COMPANY:	
ADDRESS:		
CITY:	STATE:	ZIP:
PHONE:	EMAIL:	

APPLICATION TYPE/FEE

☒ **VARIANCE – RESIDENTIAL**	$350.00 PER VARIANCE
☐ **VARIANCE – COMMERCIAL**	$500.00 PER VARIANCE

ATTACHMENT CHECKLIST

- ☑ APPLICATION
- ☑ APPLICATION FEE
- ☑ LIST OF PROPERTY OWNERS REQUIRING INDIVIDUAL NOTIFICATION. THE LIST AND NOTIFICATION LETTER WILL BE PROVIDED TO THE APPLICANT BY CITY STAFF. **THE APPLICANT WILL MAIL THE NOTIFICATIONS AT THEIR EXPENSE VIA CERTIFIED MAIL RETURN RECEIPT REQUESTED.**
- ☑ QUESTIONNAIRE
- N/A ☑ OWNERSHIP DISCLOSURE FORM (ADD'L DOCUMENTATION REQUIRED IF OWNER IS A TRUST OR CORPORATION)
- ☑ APPLICANT AUTHORIZATION FORM, IF APPLICABLE
- ☑ ONE SIGNED AND SEALED SURVEY OF THE PROPERTY (NO MORE THAN 2 YEARS OLD).
- N/A ☑ DETAILED CONCEPTUAL SITE PLAN (SEE ATTACHED SAMPLE SITE PLAN)
- ☑ LETTERS OF SUPPORT FROM ADJACENT PROPERTY OWNERS, IF ANY
- N/A ☑ HOME OWNERS ASSOCIATION DRB APPROVALS, IF ANY
- ☑ PHOTOGRAPHS, IF DESIRED

Revised 2018

Attachment: Application Package (4563 : Variance Request - 217 Walker Street)

V#_____

HOLLY HILL
FLORIDA

1065 Ridgewood Avenue, Holly Hill, FL 32117
TELEPHONE: (386) 248-9442 PERMITDESK@HOLLYHILLFL.ORG

I understand that the application for variance must include all required submittals. Submission of incomplete plans may create delays.

I hereby represent that I have the lawful right and authority to file this application.

5/6/24

SIGNATURE OF OWNER/AUTHORIZED APPLICANT **DATE**

(PROOF OF PROPERTY OWNER'S AUTHORIZATION IS REQUIRED WITH SUBMITTAL IF SIGNED BY SOMEONE OTHER THAN THE PROPERTY OWNER)

Respond completely and fully to all six criteria listed below to demonstrate that the request meets the standards of Land Development Regulations of Holly Hill Sec. 82-317 for the granting of a variance:

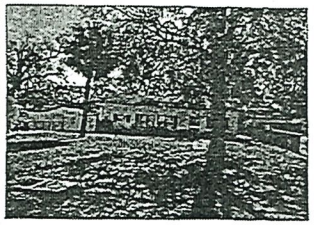
1. Describe the special conditions and circumstances that exist which are peculiar to the land, structure, or building involved, and which are not applicable to other lands, structures, or buildings in the same zoning district.

2. Describe how special conditions and circumstances that currently exist are not the result of the actions of the applicant or petitioner.

Attachment: Application Package (4563 : Variance Request - 217 Walker Street)

Boundary Survey

LEGAL DESCRIPTION: THE WESTERLY 60 FEET OF LOT 10, BLOCK 7, J. FITCH WALKER SUBDIVISION, ACCORDING TO THE PLAT THEREOF, AS RECORDED IN MAP BOOK 4, PAGE 158, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.



217 WALKER STREET
HOLLY HILL, FL

LIGHTHOUSE TITLE OF EAST FLORIDA, INC.

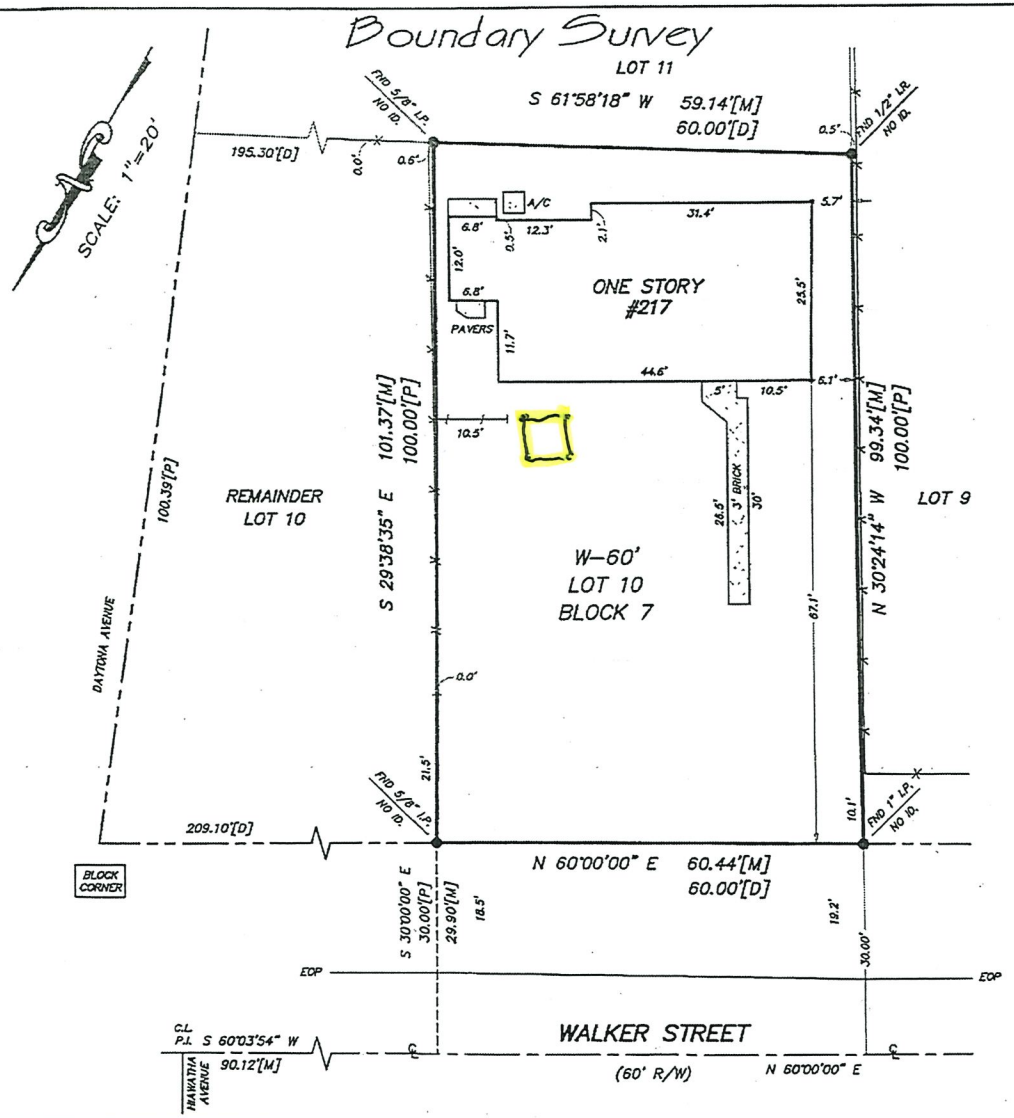
Long Surveying, Inc.
"Specializing in Residential Surveying"
LB No. 7371
1061 S. Sun Dr. Ste. #1113
Lake Mary, FL 32746
Office 407-330-9717 or 407-330-9716
Fax 407-330-9775
www.longsurveying.com

DRAWN BY:	CHECKED BY:
KZR	BRETT

CERTIFIED TO:
SAMANTHA MOORE
LIGHTHOUSE TITLE OF EAST FLORIDA, INC.
STEWART TITLE GUARANTY COMPANY
FREEDOM MORTGAGE CORPORATION

COMMUNITY NO:		
125112		
PANEL:	SUFFIX:	F.I.R.M. DATE:
0356	J	09/29/17
FLOOD ZONE:		
X		

SURVEY NO.	FIELD DATE:
87807	02/20/18



A/C — AIR CONDITIONER
A.E. — ALLEY EASEMENT
B.C. — BLOCK CORNER
BLK — BLOCK
C.B. — CONCRETE BLOCK
C.B.S. — CONCRETE BLOCK STRUCTURE
C.M. — CONCRETE MONUMENT
CONC. — CONCRETE
D — DEED
D.E. — DRAINAGE EASEMENT
E.O.P. — EDGE OF PAVEMENT
F.C.C. — FOUND CROSS CUT
F.F.E. — FINISHED FLOOR ELEVATION
FND — FOUND
ID. — IDENTIFICATION
I.P. — IRON PIPE
I.R. — IRON ROD
I.R.C. — IRON ROD & CAP
L — ARC LENGTH
L.B. — LAND SURVEYING BUSINESS
L.S. — LAND SURVEYOR
L.E. — LANDSCAPE EASEMENT
M — MEASURED
M.E. — MAINTENANCE EASEMENT
N&D — NAIL AND DISK
P — PLAT
P.E. — PEDESTRIAN EASEMENT
P.C. — POINT OF CURVATURE
P.C.C. — POINT OF COMPOUND CURVATURE
P.C.P. — PERMANENT CONTROL POINT
P.L. — PROPERTY LINE
P.O.B. — POINT OF BEGINNING
P.O.C. — POINT OF COMMENCEMENT
P.O.L. — POINT ON LINE
P.R.C. — POINT OF REVERSE CURVE
P.R.M. — PERMANENT REFERENCE MONUMENT
P.D.A.E. — PRIVATE DRAINAGE AND ALLEY EASEMENT
P.T. — POINT OF TANGENT
R — RADIUS
R/W — RIGHT OF WAY
S/W — SIDEWALK
U.E. — UTILITY EASEMENT
W.F.S. — WOOD FRAME STRUCTURE

RIGHT-OF-WAY LINE
CENTERLINE
BARB WIRE FENCE
WOOD FENCE
CHAIN LINK FENCE
PLASTIC FENCE

BEARINGS SHOWN HEREON ARE BASED UPON THE CENTERLINE OF WALKER STREET BEING N 60°00'00" E ASSUMED

NOTES:
1) This survey is based on the legal description as provided by the Client
2) This Surveyor has not abstracted the land shown hereon for easements, rights of way or restrictions of record which may affect the title or use of the land
3) Do not reconstruct property lines from building ties
4) No footing or overhangs have been located except as shown
5) No improvements or utilities have been located except as shown
6) Not valid without a signature and the authenticated electronic seal or the original raised seal of a Florida licensed Surveyor and Mapper

Certification: I certify that this survey was made under my direction and that it meets the minimum technical standards set forth by the Board of Professional Land Surveyors and Mappers in Chapter 5J-17.052, Florida Administrative Code, pursuant to Section 472.027, Florida Statutes.

No. 5910 STATE OF FLORIDA PROFESSIONAL SURVEYOR & MAPPER

LEON L. HAMPTON P.S.M. NO. 5910

Attachment: Application Package (4563 : Variance Request - 217 Walker Street)

VAR 2024-000054

217 Walker st.

DATE : 5/6/2024 3:55 PM
OPER : Donna
TKBY : Donna Dungee
TERM : 1
REC# : R00132408

EG ENERGOV 350.00
INV-00001414 350.00
- CAINVOICEFEE 350.0000

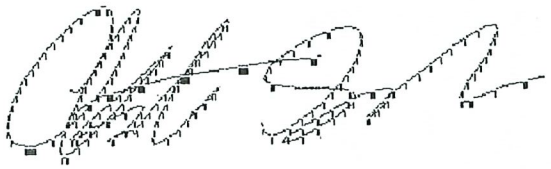
3% 3% CONVENIENCE FEE 10.50
3% 10.50

Paid By:SULLIVAN, CHRISTINA
CC MC/VISA 360.50

APPLIED 360.50
TENDERED 360.50

CHANGE 0.00

Cardmember acknowledges receipt of goods and/or services in the amount of the total shown hereon and agrees to perform the obligations set forth by the cardmember's agreement with the user.



XXXXXXXXXXXX0004
Entry Mode: CHIP READ
CVM:

EMV Details:
AC: BB5F84CFA950D762
ATC: 0019
AID: A0000000031010
TVR: 0000000000

Pd
5/16/24

Attachment: Application Package (4563 : Variance Request - 217 Walker Street)

INVOICE (INV-00001414)
FOR CITY OF HOLLY HILL, FL

BILLING CONTACT
CHRISTINA SULLIVAN
217 WALKER ST ST
HOLLY HILL, FL 32117

HOLLY HILL
FLORIDA

INVOICE NUMBER	INVOICE DATE	INVOICE DUE DATE	INVOICE STATUS	INVOICE DESCRIPTION
INV-00001414	05/06/2024	06/05/2024	Due	NONE

REFERENCE NUMBER	FEE NAME	TOTAL
VAR-2024-000054-	Variance (Residential)	$350.00
217 Walker St St Holly Hill, FL 32117	**SUBTOTAL**	$350.00

REMITTANCE INFORMATION
City of Holly Hill 1065 Ridgewood Ave Holly Hill, FL 32117

TOTAL **$350.00**

Attachment: Application Package (4563 : Variance Request - 217 Walker Street)

Example of type of shed proposed. It is an 8 X 10 shed with a window and shingle roof.



Attachment: Example of type of shed proposed (4563 : Variance Request - 217 Walker Street)

South end (rear) of house showing area behind the house



Aerial of the house.



Front of the house



R-3 Zoning – Medium Density Single-Family Residential

