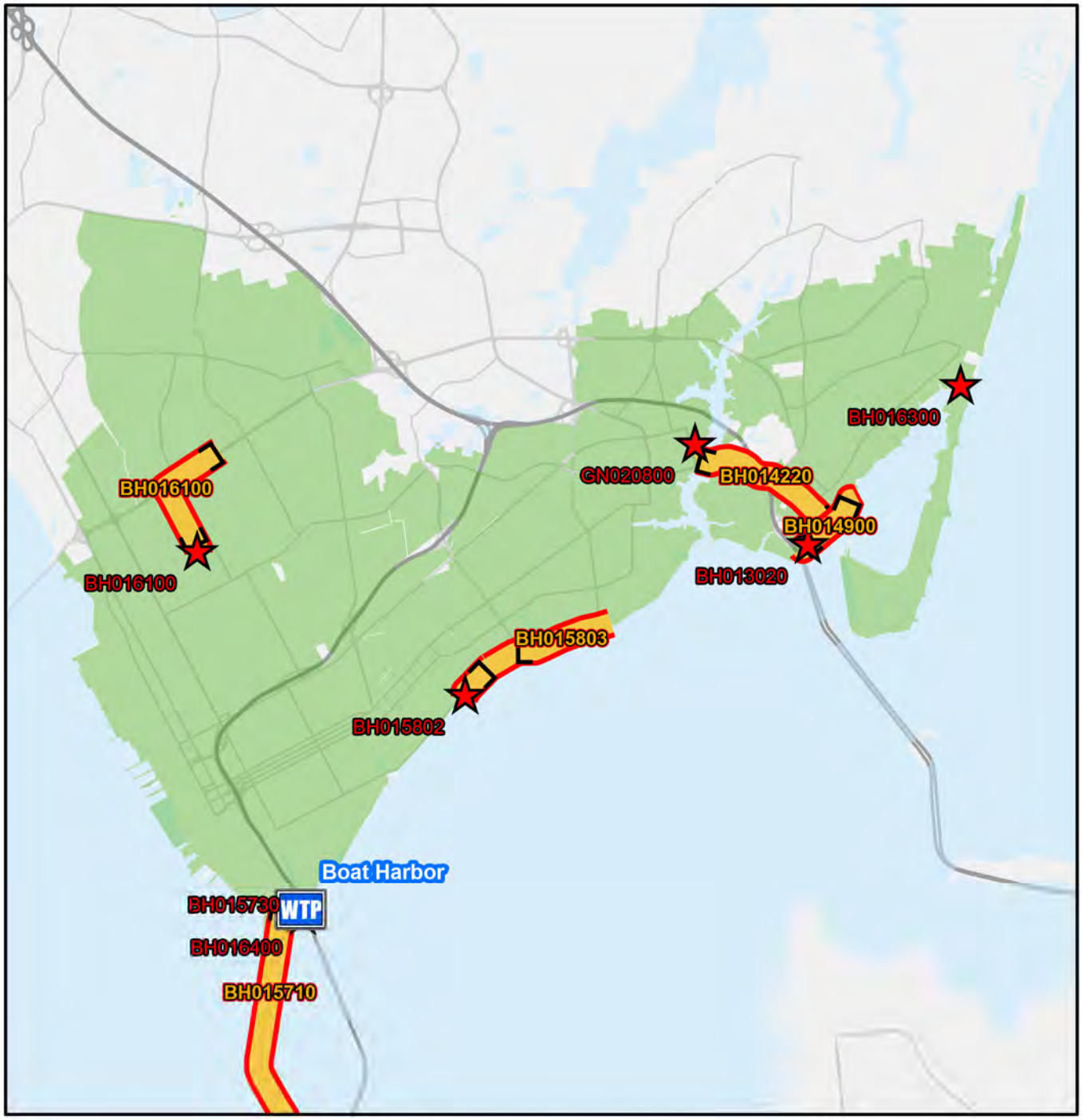
# Boat Harbor Treatment Plant

Photo Credit: VDOT




Legend

WTP Boat Harbor Treatment Plant

CIP Interceptor Point

CIP Pump Station Point

CIP Interceptor Line

CIP Abandonment

Treatment Plant Service Area

HRSD Interceptor Force Main

HRSD Interceptor Gravity Main

WTP HRSD Treatment Plant

PRS HRSD Pressure Reducing Station

PS HRSD Pump Station

0 2,000 4,000 8,000 12,000 16,000 Feet

# Boat Harbor Treatment Plant Service Area CIP Projects

## Treatment Plant Projects

BH015700
GN016346

HRSD

N

CIP Location

Service Area


BH013020

- Project Interceptor Line
- Project Interceptor Point
- Project Location Point
- Project Area

**Legend**

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- WTP HRSD Treatment Plant
- PRS HRSD Pressure Reducing Station
- PS HRSD Pump Station

0 25 50 100 150 200 Feet

N
W E
S

**CIP Location**

# BH013020

**Willard Avenue Pump Station Replacement**

HRSD

# Willard Avenue Pump Station Replacement

**PR_BH013020**

System: Boat Harbor
Type: Pump Stations

Driver Category: Capacity Improvements
Project Phase: Construction
Regulatory: None

## PROGRAM CASH FLOW PROJECTION ($,000)

| Prog Cost | Exp to Previous Year | FY26 | FY27 | FY28 | FY29 | FY30 | FY31 | FY32 | FY33 | FY34 | FY35 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $17,135 | $16,289 | $845 | $1 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |

## PROJECT DESCRIPTION

This project includes the replacement of the Willard Avenue Pump Station (PS) to address conditional issues. The proposed replacement will include a relocated pump station and new gravity and force main connections to the existing systems.

## PROJECT JUSTIFICATION

This project will improve pump station capacity for the service area and reduce operation and maintenance demands. The existing Willard Avenue Pump Station is located at 219 National Avenue in Hampton, Virginia. The Station serves portions of Buckroe, Woodland and Phoebus including Fort Monroe and receives flow from multiple City Pump Stations and the HRSD Bay Shore Lane Pump Station. Flows can be diverted from the York River WWTP collection system to the Willard Avenue Pump Station through a valved connection at the HRSD Woodland Road Pump Station. The station discharges flows through a 30-inch force main to a gravity sewer manhole in downtown Hampton. A new force main is planned to realign the Hampton Trunk Sewer Extension Divisions I & J Phase II to remove the pipeline from the Hampton University campus. A new pump station will accommodate a wide range of wet weather flows as well as offer operational flexibility during dry weather periods. The following items are justification for completing this project: The existing pump station was constructed in 1944 and is nearing the end of its anticipated useful life. The existing pump station parcel is only 0.14 acres, which does not allow for any expansion and does not meet our current parcel size standards for a new pump stations site. Furthermore, building a new pump station at this location will be challenging given the close proximity to residents. HRSD will need to acquire a new parcel in the vicinity of the existing PS to build a new one. Upon completion of the new PS, the existing PS will be demolished and the parcel transferred or sold.

## FUNDING TYPE

Funding Type: VCWRLF

## CONTACTS

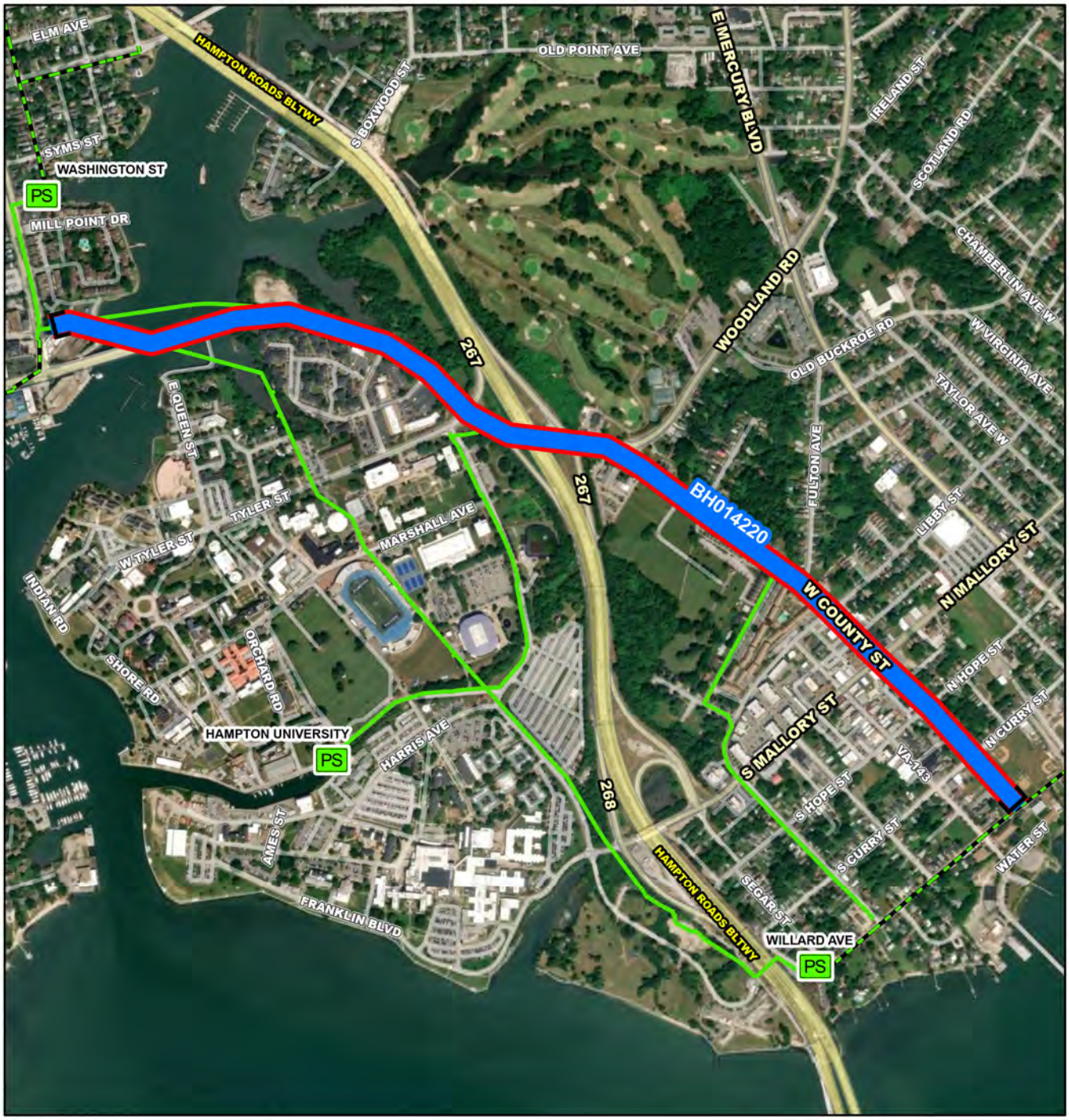
Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Ted Denny
Contacts-Managing Dept: Engineering

## PROPOSED SCHEDULE START DATE

| | |
|---|---|
| PrePlanning | 01/01/2019 |
| PER | 05/01/2019 |
| Design Delay | 09/16/2019 |
| Design | 09/16/2019 |
| Bid Delay | 02/25/2022 |
| PreConstruction | 02/25/2022 |
| Construction | 07/01/2022 |
| Closeout | 08/01/2025 |

## COST ESTIMATE

| **Cost Estimate Class:** | **Class 1 (-3% to +15%)** |
|---|---|
| PrePlanning | $2,030 |
| PER | $102,410 |
| Design | $1,341,931 |
| PreConstruction | $13,390 |
| Construction | $15,660,000 |
| Closeout | $15,000 |
| **Est. Program Cost** | **$17,134,762** |
| Contingency Budget | $800,000 |
| **Est. Project Costs** | **$17,934,762** |




BH014220

- Project Interceptor Line
- Project Interceptor Point
- Project Location Point
- Project Area

Legend

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- WTP HRSD Treatment Plant
- PRS HRSD Pressure Reducing Station
- PS HRSD Pump Station

0 360 720 1,440 2,160 2,880 Feet

N
W E
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CIP Location

# BH014220

**Hampton Trunk Sewer Extension Divisions I and J Relocation Phase II**

HRSD

# Hampton Trunk Sewer Extension Divisions I and J Relocation Phase II

**PR_BH014220**

System: Boat Harbor
Type: Pipelines

Driver Category: Relocation
Project Phase: Construction
Regulatory: None

## PROGRAM CASH FLOW PROJECTION ($,000)

| Prog Cost | Exp to Previous Year | FY26 | FY27 | FY28 | FY29 | FY30 | FY31 | FY32 | FY33 | FY34 | FY35 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $17,238 | $16,526 | $707 | $5 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |

## PROJECT DESCRIPTION

This project includes the replacement of 7,500 linear feet (LF) of 30-inch force main (FM) from the new Willard Avenue Pump Station (PS) with 6,800 LF of new 24-inch FM. The new force main will originate from the new Willard Avenue PS to the connection at E. Queen Street and Eaton Street. The location of the new Willard Avenue PS is still pending and may impact the alignment of the FM. The following ancillary work will be required as part of this project: A 600 LF extension of the 10-inch FM from City of Hampton PS 003; A 1,000 LF relocation of the 4-inch FM from the privately owned Hampton Harbor PS; Conveyance of Hampton University PS (Sta. #211) to Hampton University or the Veteran Affairs Medical Center.

## PROJECT JUSTIFICATION

In combination with CIP BH014210, this project will address critical areas within the City of Hampton with significant wet weather capacity issues as identified in the Hampton Study completed by Brown and Caldwell (BC). The Hampton Study was a collaborative effort between BC, the City of Hampton and HRSD to identify, evaluate, and select the preferred alternatives to address the identified capacity issues. The existing Willard Avenue PS 30-inch discharge FM was originally installed in the 1945-46 timeframe, with a portion of the main relocated in 1956 as part of the Interstate-64 (I-64) project. Given the age of this line, the documented failure near the I-64 sound wall, limited diversion options, its depth in the vicinity of the interstate off ramp, and Hampton Universitys request for HRSD to abandon this pipe, replacement is necessary.

## FUNDING TYPE

Funding Type: VCWRLF

## CONTACTS

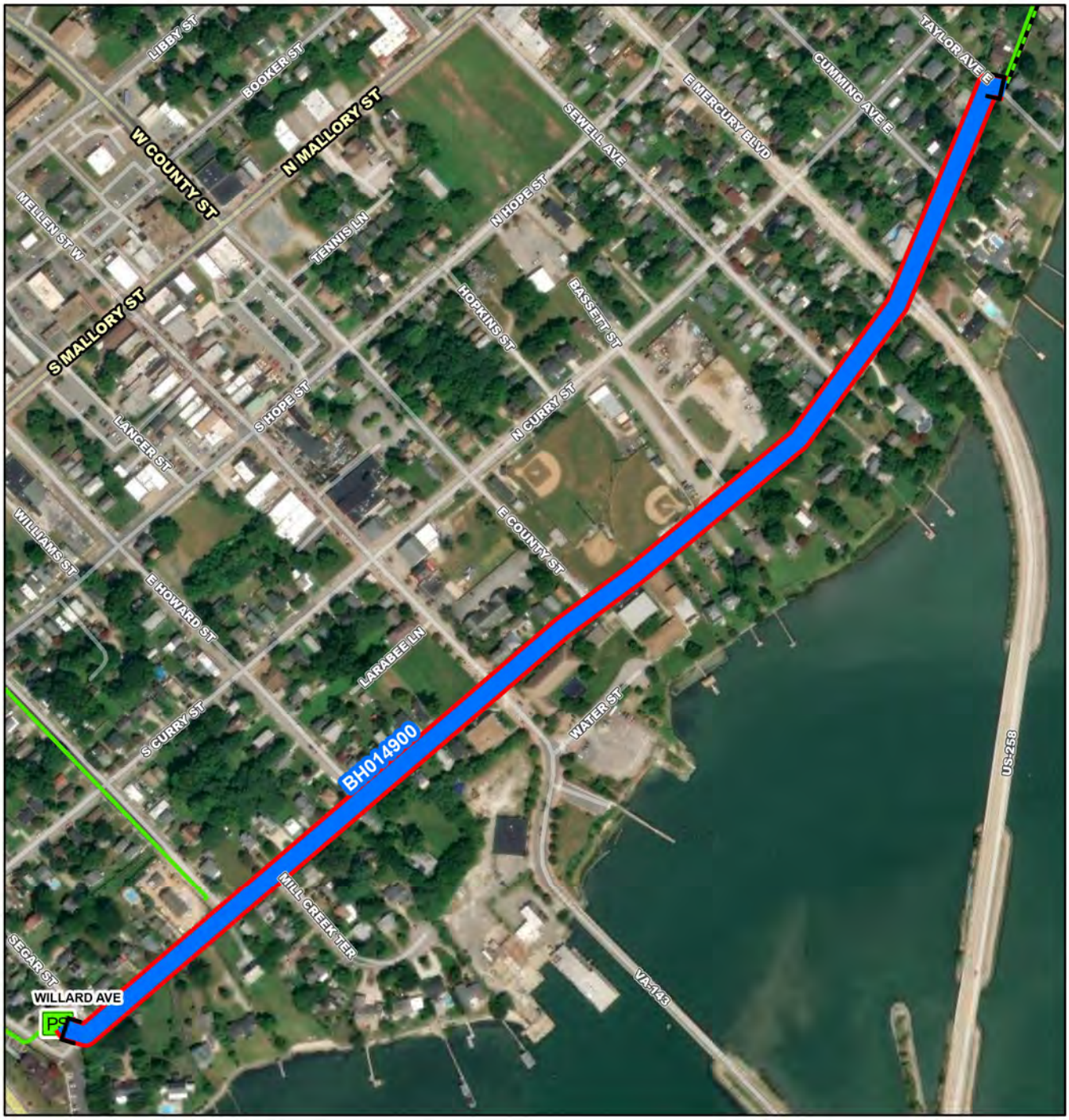
Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Ted Denny
Contacts-Managing Dept: Engineering

## PROPOSED SCHEDULE START DATE

| | |
|---|---|
| PrePlanning | 05/01/2015 |
| PER | 01/11/2016 |
| Design Delay | 05/31/2018 |
| Design | 06/26/2018 |
| Bid Delay | 11/05/2021 |
| PreConstruction | 11/12/2021 |
| Construction | 01/01/2022 |
| Closeout | 11/01/2025 |

## COST ESTIMATE

| **Cost Estimate Class:** | **Class 1 (-3% to +15%)** |
|---|---|
| PrePlanning | $1,462 |
| PER | $85,020 |
| Design | $1,000,131 |
| PreConstruction | $29,242 |
| Construction | $15,864,583 |
| Closeout | $15,000 |
| **Est. Program Cost** | **$16,995,438** |
| Contingency Budget | $400,000 |
| **Est. Project Costs** | **$17,395,438** |




BH014900

- Project Interceptor Line
- Project Interceptor Point
- Project Location Point
- Project Area

**Legend**

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- WTP HRSD Treatment Plant
- PRS HRSD Pressure Reducing Station
- PS HRSD Pump Station

0 137.5 275 550 825 1,100 Feet

# BH014900

**Hampton Trunk Sewer Extension Division K Gravity Improvements**

HRSD

N
W E
S

**CIP Location**

# Hampton Trunk Sewer Extension Division K Gravity Improvements

**PR_BH014900**

System: Boat Harbor
Type: Pipelines

Driver Category: I&I Abatement-Rehabilitation Plan
Project Phase: Construction
Regulatory: Rehab Plan Phase Two

## PROGRAM CASH FLOW PROJECTION ($,000)

| Prog Cost | Exp to Previous Year | FY26 | FY27 | FY28 | FY29 | FY30 | FY31 | FY32 | FY33 | FY34 | FY35 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $3,507 | $3,495 | $13 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |

## PROJECT DESCRIPTION

This project is to rehabilitate and/or replace 3,700 linear feet of 30-inch diameter gravity pipeline with associated manholes. Project extends from MH-NG-160-25773 to NS-PS-225-1. In addition, a point repair is required between MH-NG-160-26350 and MH-NG-160-26040.

## PROJECT JUSTIFICATION

Condition assessment activities indicate that these assets present a material risk of failure due to I/I.

## FUNDING TYPE

Funding Type: VCWRLF

## CONTACTS

Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Ted Denny
Contacts-Managing Dept: Engineering

## PROPOSED SCHEDULE START DATE

| | |
|---|---|
| PrePlanning | 04/01/2019 |
| PER | 04/29/2019 |
| Design Delay | 05/01/2020 |
| Design | 05/01/2020 |
| Bid Delay | 02/25/2022 |
| PreConstruction | 02/25/2022 |
| Construction | 05/01/2022 |
| Closeout | 05/01/2025 |

## COST ESTIMATE

| **Cost Estimate Class:** | **Class 1 (-3% to +15%)** |
|---|---|
| PrePlanning | $0 |
| PER | $106,419 |
| Design | $285,731 |
| PreConstruction | $0 |
| Construction | $3,100,000 |
| Closeout | $15,000 |
| **Est. Program Cost** | **$3,507,150** |
| Contingency Budget | $100,000 |
| **Est. Project Costs** | **$3,607,150** |


BH015700

- Project Interceptor Line
- Project Interceptor Point
- Project Location Point
- Project Area

**Legend**

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- WTP HRSD Treatment Plant
- PRS HRSD Pressure Reducing Station
- PS HRSD Pump Station

0 55 110 220 330 440 Feet

# BH015700

**Boat Harbor Treatment Plant Pump Station Conversion**

HRSD

N
W E
S

**CIP Location**

# Boat Harbor Treatment Plant Pump Station Conversion

**PR_BH015700**

System: Boat Harbor
Type: SWIFT

Driver Category: Nutrient Reduction
Project Phase: Construction
Regulatory: Integrated Plan-SWIFT

## PROGRAM CASH FLOW PROJECTION ($,000)

| Prog Cost | Exp to Previous Year | FY26 | FY27 | FY28 | FY29 | FY30 | FY31 | FY32 | FY33 | FY34 | FY35 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $194,418 | $133,807 | $54,001 | $6,611 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |

## PROJECT DESCRIPTION

The Boat Harbor Treatment Plant will be converted to a pumping station, including equalization and headworks facilities while remaining in operation for wastewater treatment during conversion. The new infrastructure will be designed to meet HRSDs resiliency standards and consider remote operation and access in future conditions including sea level rise.

## PROJECT JUSTIFICATION

The James River Waste Load Allocation (WLA) requires HRSD to continue reducing the mass of nutrients discharged from associated treatment plant outfalls. The planned reduction of nutrients is largely completed through implementation of the SWIFT program. The SWIFT master planning effort has determined that advanced water treatment and injection at Boat Harbor has significant physical limitations including site availability and resiliency to sea level rise. In addition, a financial analysis indicates there is significant long term cost savings associated with consolidating wastewater treatment and SWIFT facilities at Nansemond Treatment Plant. This project will allow HRSD to further reduce the amount of nutrients contributed to the James River basin. Upgrades to Nansemond Treatment Plant to accommodate the additional flow will be completed under a separate capital project.

## FUNDING TYPE

Funding Type: WIFIA

## CONTACTS

Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: David Steele
Contacts-Managing Dept: Engineering

## PROPOSED SCHEDULE START DATE

| | |
|---|---|
| PrePlanning | 08/05/2020 |
| PER | 10/27/2020 |
| Design Delay | |
| Design | 08/05/2021 |
| Bid Delay | |
| PreConstruction | 12/21/2022 |
| Construction | 05/24/2023 |
| Closeout | 12/31/2026 |

## COST ESTIMATE

| **Cost Estimate Class:** | **Class 1 (-3% to +15%)** |
|---|---|
| PrePlanning | $874,598 |
| PER | $1,134,658 |
| Design | $4,673,915 |
| PreConstruction | $139,568 |
| Construction | $187,560,000 |
| Closeout | $35,594 |
| **Est. Program Cost** | **$194,418,334** |
| Contingency Budget | $4,774,264 |
| **Est. Project Costs** | **$199,192,598** |


BH015710

- Project Interceptor Line
- Project Interceptor Point
- Project Location Point
- Project Area

**Legend**

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- WTP HRSD Treatment Plant
- PRS HRSD Pressure Reducing Station
- PS HRSD Pump Station

0 1,000 2,000 4,000 6,000 8,000 Feet

N
W E
S

CIP Location

# BH015710

**Boat Harbor Treatment Plant Transmission Force Main Section 1 (Subaqueous)**

HRSD

# Boat Harbor Treatment Plant Transmission Force Main Section 1 (Subaqueous)

**PR_BH015710**

System: Boat Harbor
Type: SWIFT

Driver Category: Nutrient Reduction
Project Phase: Construction
Regulatory: Integrated Plan-SWIFT

## PROGRAM CASH FLOW PROJECTION ($,000)

| Prog Cost | Exp to Previous Year | FY26 | FY27 | FY28 | FY29 | FY30 | FY31 | FY32 | FY33 | FY34 | FY35 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $149,143 | $132,816 | $16,327 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |

## PROJECT DESCRIPTION

The project consists of the subaqueous crossing of the James River to convey flow to the Nansemond Treatment Plant. This project is anticipated to be delivered by the design-build procurement method due to the unique construction techniques required and coordination of construction schedule and permit requirements.

## PROJECT JUSTIFICATION

The James River Waste Load Allocation (WLA) requires HRSD to continue reducing the mass of nutrients discharged from associated treatment plant outfalls. The planned reduction of nutrients is largely completed through implementation of the SWIFT program. The SWIFT master planning effort has determined that advanced water treatment and injection at Boat Harbor has significant physical limitations including site availability and resiliency to sea level rise. In addition, a financial analysis indicates there is significant long term cost savings associated with consolidating wastewater treatment and SWIFT facilities at Nansemond Treatment Plant. This project will allow HRSD to further reduce the amount of nutrients contributed to the James River basin. Upgrades to Nansemond Treatment Plant to accommodate the additional flow will be completed under a separate capital project.

## FUNDING TYPE

Funding Type: WIFIA

## CONTACTS

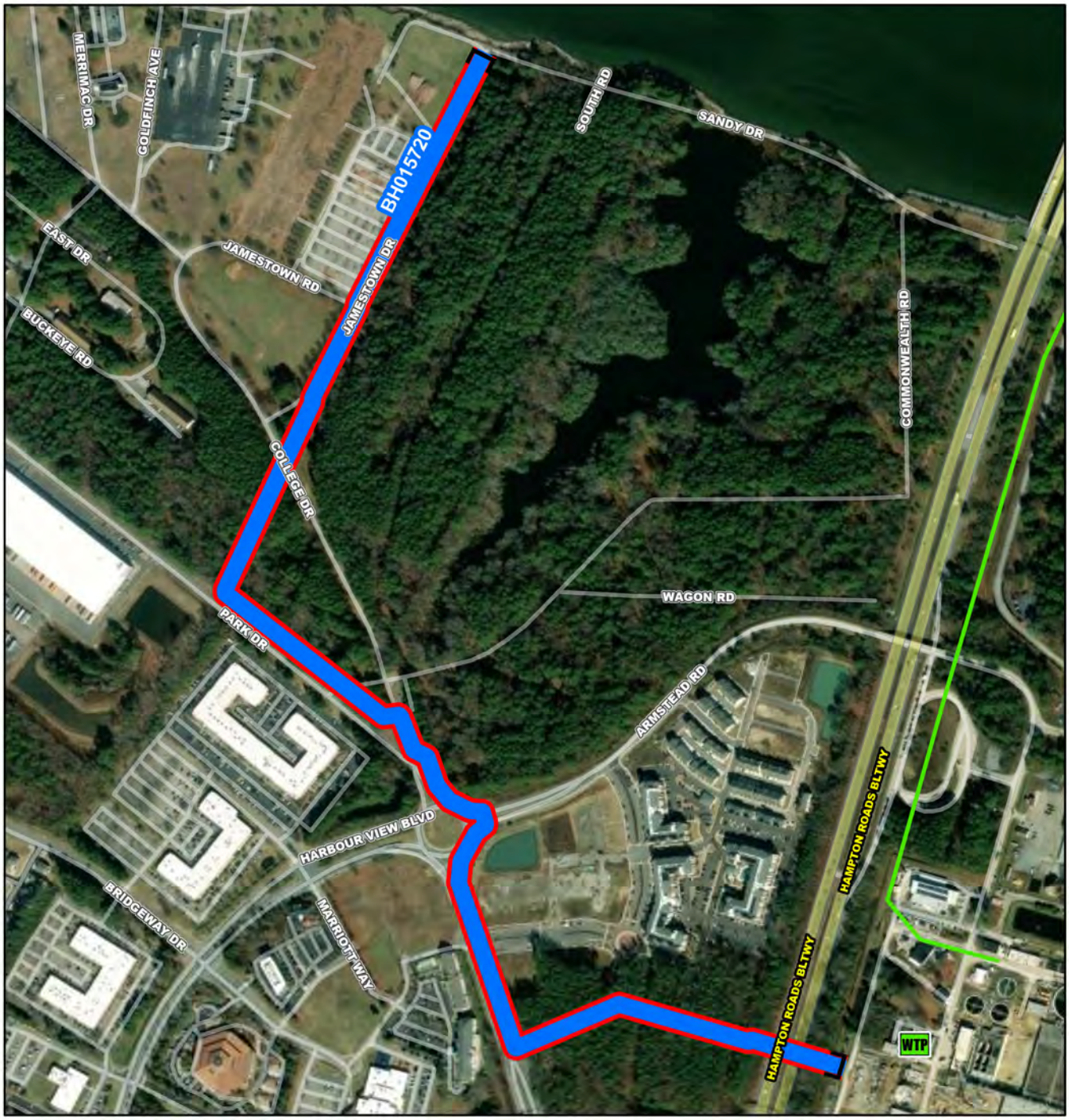
Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: David Steele
Contacts-Managing Dept: Engineering

## PROPOSED SCHEDULE START DATE

| | |
|---|---|
| PrePlanning | 05/01/2020 |
| PER | 10/26/2020 |
| Design Delay | 05/05/2022 |
| Design | 05/05/2022 |
| Bid Delay | 08/10/2021 |
| PreConstruction | 05/03/2021 |
| Construction | 05/23/2023 |
| Closeout | 08/01/2025 |

## COST ESTIMATE

| **Cost Estimate Class:** | **Class 1 (-3% to +15%)** |
|---|---|
| PrePlanning | $0 |
| PER | $1,237,536 |
| Design | $8,215,283 |
| PreConstruction | $467,931 |
| Construction | $139,222,000 |
| Closeout | $0 |
| **Est. Program Cost** | **$149,142,751** |
| Contingency Budget | $19,580,178 |
| **Est. Project Costs** | **$168,722,928** |




BH015720

- Project Interceptor Line
- Project Interceptor Point
- Project Location Point
- Project Area

Legend

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- WTP HRSD Treatment Plant
- PRS HRSD Pressure Reducing Station
- PS HRSD Pump Station

0 220 440 880 1,320 1,760 Feet

N
W E
S

CIP Location

# BH015720

**Boat Harbor Treatment Plant Transmission Force Main Section 2 (Land)**

HRSD

# Boat Harbor Treatment Plant Transmission Force Main Section 2 (Land)

**PR_BH015720**

System: Boat Harbor
Type: SWIFT

Driver Category: Nutrient Reduction
Project Phase: Construction
Regulatory: Integrated Plan-SWIFT

## PROGRAM CASH FLOW PROJECTION ($,000)

| Prog Cost | Exp to Previous Year | FY26 | FY27 | FY28 | FY29 | FY30 | FY31 | FY32 | FY33 | FY34 | FY35 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $55,301 | $23,569 | $29,807 | $1,925 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |

## PROJECT DESCRIPTION

This project consists of the on-land transmission force main section connecting the subaqueous force main Section 1 (separate project under BH015710) to the Nansemond Treatment Plant. This project will provide an interceptor force main to be installed using both open cut methods and a trenchless crossing of I-664. HRSD desires to construct this section of force main separate from Section 1 to accommodate coordination with on-going and proposed development of the multiple privately-owned properties that will be traversed. This project includes the SWIFT Water and backflush piping from the future Nansemond SWIFT Facility to each of the proposed well sites located west of I-664.

## PROJECT JUSTIFICATION

The James River Waste Load Allocation (WLA) requires HRSD to continue reducing the mass of nutrients discharged from associated treatment plant outfalls. The planned reduction of nutrients is largely completed through implementation of the SWIFT program. The SWIFT master planning effort has determined that advanced water treatment and injection at Boat Harbor has significant physical limitations including site availability and resiliency to sea level rise. In addition, a financial analysis indicates there is significant long term cost savings associated with consolidating wastewater treatment and SWIFT facilities at Nansemond Treatment Plant. This project will allow HRSD to further reduce the amount of nutrients contributed to the James River basin. Upgrades to Nansemond Treatment Plant to accommodate the additional flow will be completed under a separate capital project.

## FUNDING TYPE

Funding Type: WIFIA

## CONTACTS

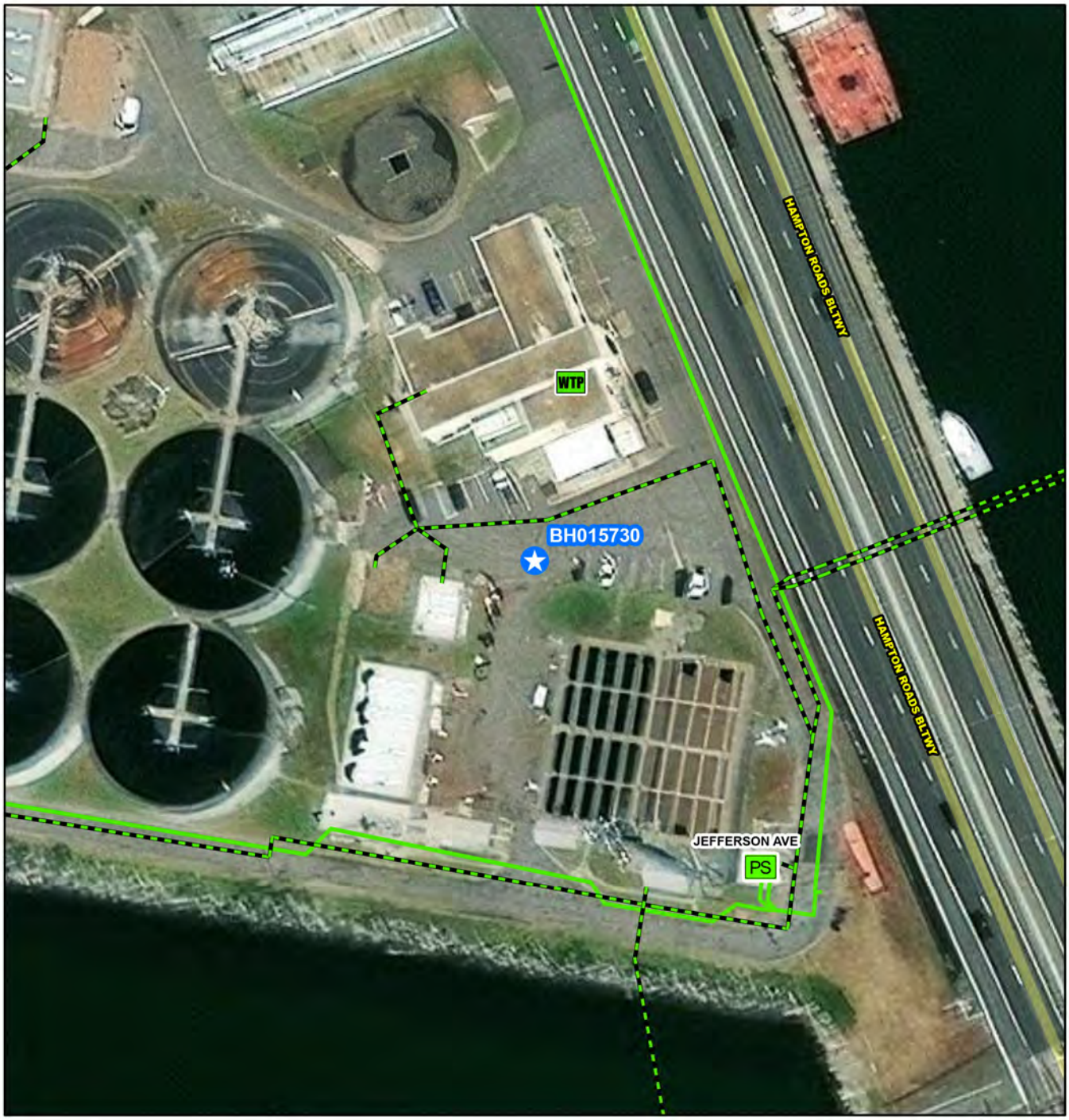
Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: David Steele
Contacts-Managing Dept: Engineering

## PROPOSED SCHEDULE START DATE

| | |
|---|---|
| PrePlanning | 05/01/2020 |
| PER | 09/29/2021 |
| Design Delay | 09/29/2021 |
| Design | 12/15/2021 |
| Bid Delay | 06/10/2024 |
| PreConstruction | 02/29/2024 |
| Construction | 05/07/2024 |
| Closeout | 08/06/2026 |

## COST ESTIMATE

| **Cost Estimate Class:** | **Class 1 (-3% to +15%)** |
|---|---|
| PrePlanning | $1,438 |
| PER | $442,502 |
| Design | $2,441,657 |
| PreConstruction | $38,284 |
| Construction | $52,377,000 |
| Closeout | $0 |
| **Est. Program Cost** | **$55,300,882** |
| Contingency Budget | $2,585,260 |
| **Est. Project Costs** | **$57,886,142** |




BH015730

- Project Interceptor Line
- Project Interceptor Point
- Project Location Point
- Project Area

**Legend**

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- WTP HRSD Treatment Plant
- PRS HRSD Pressure Reducing Station
- PS HRSD Pump Station

0 25 50 100 150 200 Feet

# BH015730

**Boat Harbor Treatment Plant Decommission and Demolition**

HRSD

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W E
S

**CIP Location**

# Boat Harbor Treatment Plant Decommission and Demolition

**PR_BH015730**

System: Boat Harbor
Type: SWIFT

Driver Category: I&I Abatement-IP/RWWMP
Project Phase: Proposed
Regulatory: Integrated Plan-SWIFT

## PROGRAM CASH FLOW PROJECTION ($,000)

| Prog Cost | Exp to Previous Year | FY26 | FY27 | FY28 | FY29 | FY30 | FY31 | FY32 | FY33 | FY34 | FY35 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $43,001 | $1,049 | $2,894 | $11,125 | $27,932 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |

## PROJECT DESCRIPTION

Boat Harbor Treatment Plant will be converted to a pumping station under a separate capital project. Once wastewater collected from the Boat Harbor service area is diverted to the new Boat Harbor pump station, the treatment plant will be shut down, decommissioned, and demolished, as needed for a potential future land use.

## PROJECT JUSTIFICATION

Continued operation of the Boat Harbor Treatment Plant presents challenges to HRSD, including vulnerability to flooding and limited site availability for required wastewater nutrient reduction improvements and SWIFT facilities. HRSD evaluated multiple options to overcome these challenges and found diversion to the Nansemond Treatment Plant provides the most resilient and economical solution to meet HRSD's goals.

## FUNDING TYPE

Funding Type: WIFIA

## CONTACTS

Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: David Steele
Contacts-Managing Dept: Engineering

## PROPOSED SCHEDULE START DATE

| | |
|---|---|
| PrePlanning | 01/02/2025 |
| PER | 01/02/2025 |
| Design Delay | |
| Design | 06/03/2025 |
| Bid Delay | 06/15/2026 |
| PreConstruction | 06/15/2026 |
| Construction | 01/06/2027 |
| Closeout | 01/20/2028 |

## COST ESTIMATE

| **Cost Estimate Class:** | **Class 5 (-20% to +100%)** |
|---|---|
| PrePlanning | $0 |
| PER | $787,000 |
| Design | $3,147,000 |
| PreConstruction | $67,000 |
| Construction | $39,000,000 |
| Closeout | $0 |
| **Est. Program Cost** | **$43,001,000** |
| Contingency Budget | $8,600,000 |
| **Est. Project Costs** | **$51,601,000** |


BH015802

- Project Interceptor Line
- Project Interceptor Point
- Project Location Point
- Project Area

**Legend**

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- WTP HRSD Treatment Plant
- PRS HRSD Pressure Reducing Station
- PS HRSD Pump Station

0 25 50 100 150 200 Feet

# BH015802

**Claremont Pump Station Upgrade (BH-HPP-01B)**

HRSD

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W E
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**CIP Location**

# Claremont Pump Station Upgrade (BH-HPP-01B)

**PR_BH015802**

System: Boat Harbor
Type: Pump Stations

Driver Category: I&I Abatement-IP/RWWMP
Project Phase: Proposed
Regulatory: Integrated Plan-HPP 2

## PROGRAM CASH FLOW PROJECTION ($,000)

| Prog Cost | Exp to Previous Year | FY26 | FY27 | FY28 | FY29 | FY30 | FY31 | FY32 | FY33 | FY34 | FY35 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $1,295 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $236 | $495 | $565 |

## PROJECT DESCRIPTION

Claremont Pump Station Upgrade (NS-PS-208).

## PROJECT JUSTIFICATION

As part of the RWWMP submitted to the DEQ and EPA, HRSD developed an approach to recognize the highest-priority system improvements with the greatest relative environmental benefit. The result being the identification of High-Priority Projects (HPPs).
Rounds 1 and 2 of High-Priority Projects were scheduled with consecutive 10-year implementation periods starting with Round 1 being completed between plan approval and 2030. Prior to commencement, HRSD will review the Round 2 projects to confirm that they are still expected to meet the desired result and confirm this in a check in with the EPA/DEQ. To modify the list of specific Round 2 HPP projects, HRSD will show that the revised set of projects will attain a minimum of the same percent reduction, or better.

## FUNDING TYPE

Funding Type: Revenue Bond

## CONTACTS

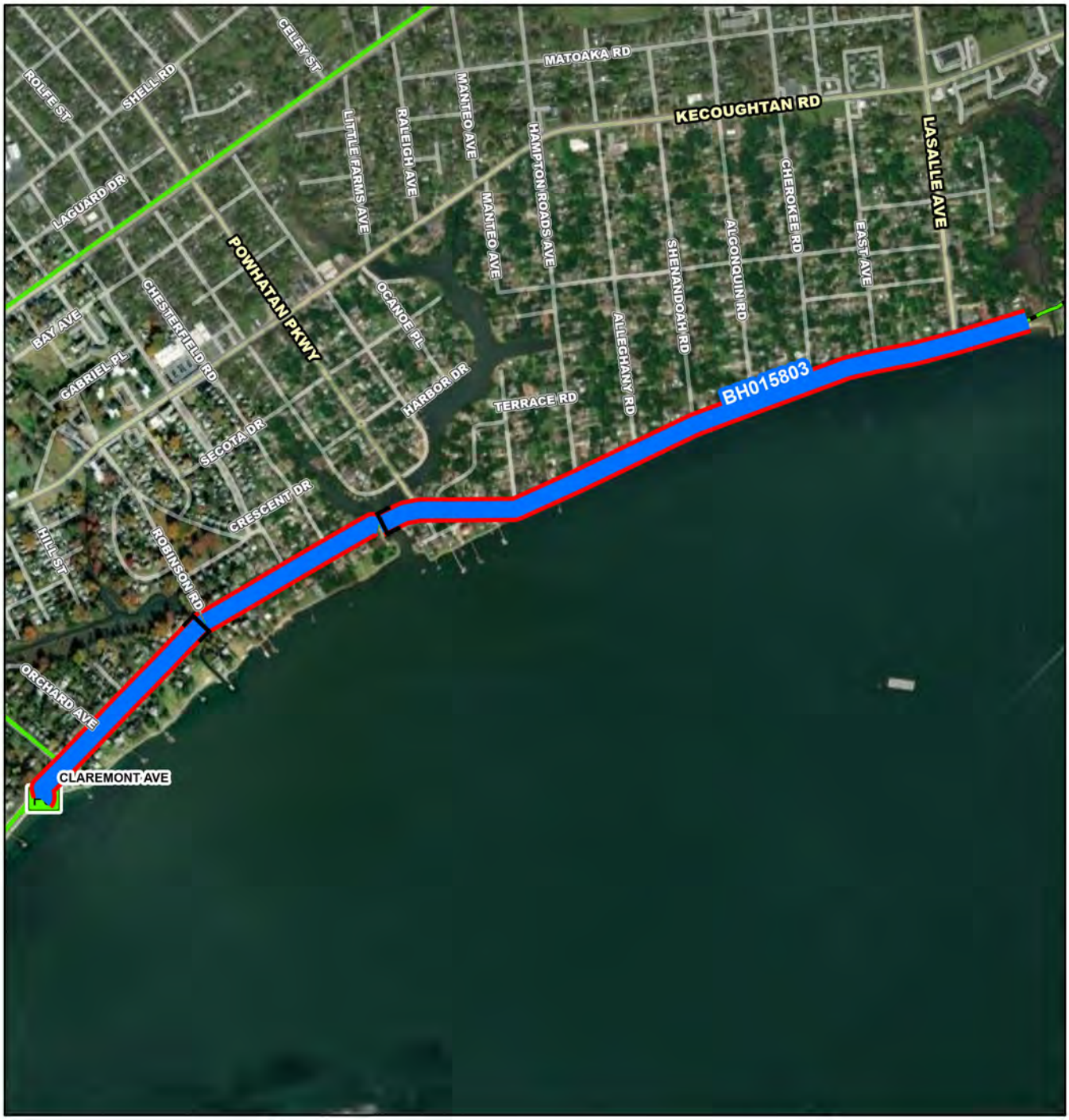
Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: John Dano
Contacts-Managing Dept: Engineering

## PROPOSED SCHEDULE START DATE

| | |
|---|---|
| PrePlanning | 01/03/2028 |
| PER | 11/01/2032 |
| Design Delay | 11/01/2033 |
| Design | 11/01/2033 |
| Bid Delay | 11/01/2035 |
| PreConstruction | 11/01/2035 |
| Construction | 01/02/2036 |
| Closeout | 01/03/2039 |

## COST ESTIMATE

| | |
|---|---|
| **Cost Estimate Class:** | **Class 10** |
| PrePlanning | $0 |
| PER | $353,313 |
| Design | $1,130,528 |
| PreConstruction | $212,013 |
| Construction | $12,118,622 |
| Closeout | $0 |
| **Est. Program Cost** | **$13,814,477** |
| Contingency Budget | $3,029,655 |
| **Est. Project Costs** | **$16,844,131** |




BH015803

- Project Interceptor Line
- Project Interceptor Point
- Project Location Point
- Project Area

Legend

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- WTP HRSD Treatment Plant
- PRS HRSD Pressure Reducing Station
- PS HRSD Pump Station

0 387.5 775 1,550 2,325 3,100 Feet

N W E S

CIP Location

# BH015803

**Chesapeake Avenue Interceptor Improvements (BH-HPP-01C)**

HRSD

# Chesapeake Avenue Interceptor Improvements (BH-HPP-01C)

**PR_BH015803**

System: Boat Harbor
Type: Pipelines

Driver Category: I&I Abatement-IP/RWWMP
Project Phase: Proposed
Regulatory: Integrated Plan-HPP 2

## PROGRAM CASH FLOW PROJECTION ($,000)

| Prog Cost | Exp to Previous Year | FY26 | FY27 | FY28 | FY29 | FY30 | FY31 | FY32 | FY33 | FY34 | FY35 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $1,739 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $371 | $658 | $710 |

## PROJECT DESCRIPTION

Upgrade 6,490 linear feet (LF) to 42-inch gravity main (GM); Upgrade 2,180 LF of 24-inch GM to 36-inch GM; Upgrade 70 LF of 42-inch inverted siphon along Chesapeake Avenue upstream of NS-PS-208; Upgrade 70 LF of 42-inch inverted siphon along Chesapeake Avenue upstream of NS-PS-208.

## PROJECT JUSTIFICATION

As part of the RWWMP submitted to the DEQ and EPA, HRSD developed an approach to recognize the highest-priority system improvements with the greatest relative environmental benefit. The result being the identification of High-Priority Projects (HPPs).
Rounds 1 and 2 of High-Priority Projects were scheduled with consecutive 10-year implementation periods starting with Round 1 being completed between plan approval and 2030. Prior to commencement, HRSD will review the Round 2 projects to confirm that they are still expected to meet the desired result and confirm this in a check in with the EPA/DEQ. To modify the list of specific Round 2 HPP projects, HRSD will show that the revised set of projects will attain a minimum of the same percent reduction, or better.

## FUNDING TYPE

Funding Type: Revenue Bond

## CONTACTS

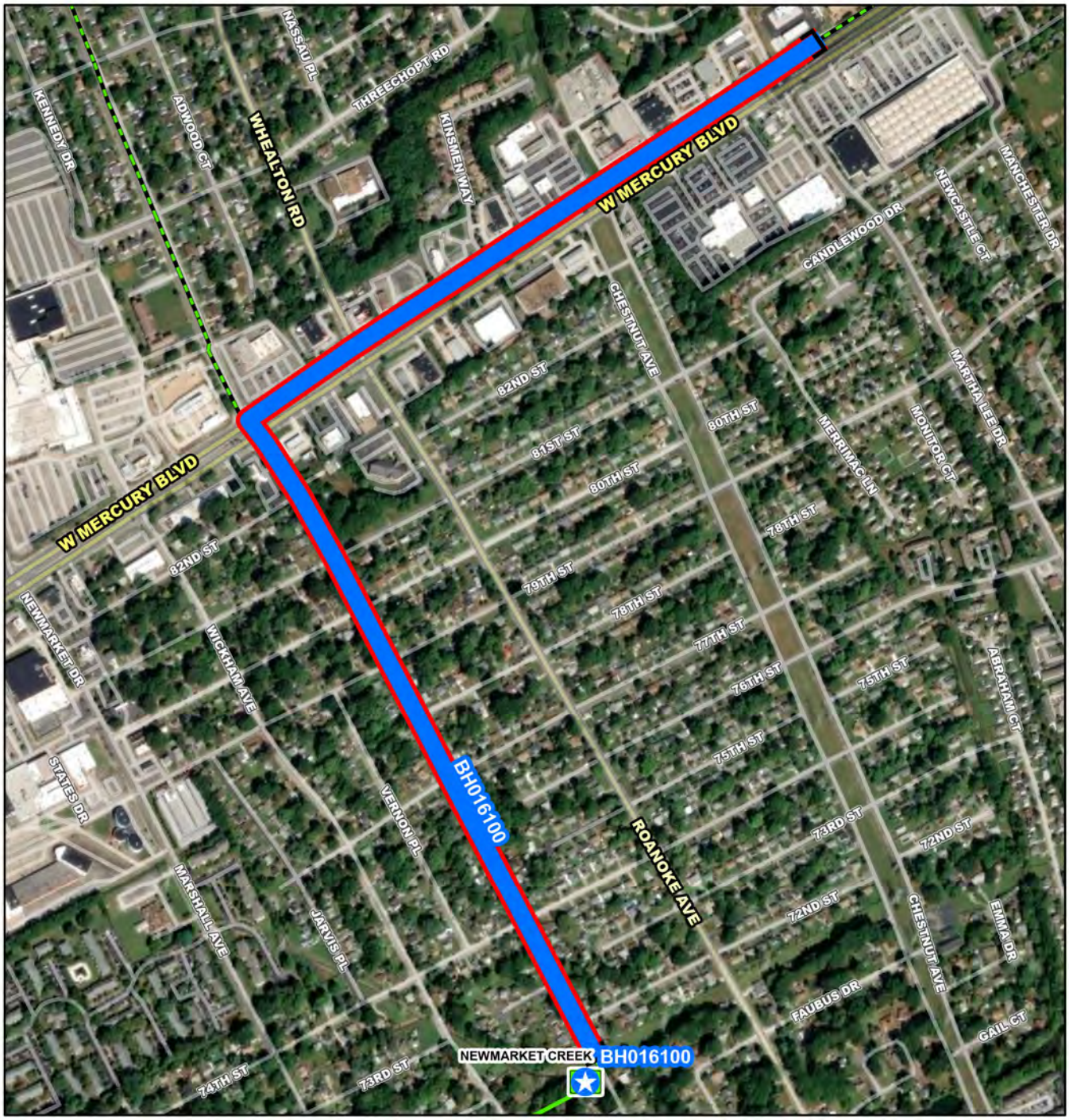
Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: John Dano
Contacts-Managing Dept: Engineering

## PROPOSED SCHEDULE START DATE

| | |
|---|---|
| PrePlanning | 01/03/2028 |
| PER | 11/01/2032 |
| Design Delay | 11/01/2033 |
| Design | 11/01/2033 |
| Bid Delay | 11/01/2035 |
| PreConstruction | 11/01/2035 |
| Construction | 01/02/2036 |
| Closeout | 01/03/2039 |

## COST ESTIMATE

| | |
|---|---|
| **Cost Estimate Class:** | **Class 10** |
| PrePlanning | $0 |
| PER | $556,071 |
| Design | $1,419,427 |
| PreConstruction | $314,357 |
| Construction | $16,371,763 |
| Closeout | $0 |
| **Est. Program Cost** | **$18,661,619** |
| Contingency Budget | $4,092,940 |
| **Est. Project Costs** | **$22,754,559** |




BH016100

- Project Interceptor Line
- Project Interceptor Point
- Project Location Point
- Project Area

**Legend**

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- WTP HRSD Treatment Plant
- PRS HRSD Pressure Reducing Station
- PS HRSD Pump Station

0 250 500 1,000 1,500 2,000 Feet

N W E S

CIP Location

# BH016100

**High Priority Projects Round 2 Project 3**

HRSD

# High Priority Projects Round 2 Project 3

**PR_BH016100**

System: Boat Harbor
Type: Pipelines

Driver Category: I&I Abatement-IP/RWWMP
Project Phase: Proposed
Regulatory: Integrated Plan-HPP 2

## PROGRAM CASH FLOW PROJECTION ($,000)

| Prog Cost | Exp to Previous Year | FY26 | FY27 | FY28 | FY29 | FY30 | FY31 | FY32 | FY33 | FY34 | FY35 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $18,455 | $0 | $0 | $0 | $0 | $0 | $0 | $436 | $1,307 | $1,851 | $5,607 | $9,255 |

## PROJECT DESCRIPTION

High Priority Project (HPP) Round 2 Project 3 consists of the following Regional Wet Weather Management Plan (RWWMP) Project IDs and general descriptions:
BH-RWWMP-04 58th Street Storage Tank
BH-RWWMP-07 Newmarket Creek Pump Station Upgrade
BH-RWWMP-08 Mercury Boulevard and Newmarket Gravity Main Improvements

## PROJECT JUSTIFICATION

As part of the RWWMP submitted to the DEQ and EPA, HRSD developed an approach to recognize the highest-priority system improvements with the greatest relative environmental benefit. The result being the identification of High-Priority Projects (HPPs). Rounds 1 and 2 of High-Priority Projects were scheduled with consecutive 10-year implementation periods starting with Round 1 being completed between plan approval and 2030. Prior to commencement, HRSD will review the Round 2 projects to confirm that they are still expected to meet the desired result and confirm this in a check in with the EPA/DEQ. To modify the list of specific Round 2 HPP projects, HRSD will show that the revised set of projects will attain a minimum of the same percent reduction, or better.

## FUNDING TYPE

Funding Type: Revenue Bond

## CONTACTS

Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: John Dano
Contacts-Managing Dept: Engineering

## PROPOSED SCHEDULE START DATE

| | |
|---|---|
| PrePlanning | 11/01/2030 |
| PER | 11/04/2031 |
| Design Delay | 11/03/2032 |
| Design | 11/03/2032 |
| Bid Delay | 11/02/2033 |
| PreConstruction | 11/02/2033 |
| Construction | 01/02/2034 |
| Closeout | 01/02/2037 |

## COST ESTIMATE

| **Cost Estimate Class:** | **Class 10** |
|---|---|
| PrePlanning | $653,282 |
| PER | $1,633,206 |
| Design | $1,959,848 |
| PreConstruction | $326,641 |
| Construction | $27,764,510 |
| Closeout | $326,641 |
| **Est. Program Cost** | **$32,664,129** |
| Contingency Budget | $0 |
| **Est. Project Costs** | **$32,664,129** |

# Inflow Reduction Program-Phase II

**PR_BH016200**

System: Boat Harbor
Type: Locality and Private Property

Driver Category: I&I Abatement-IP/RWWMP
Project Phase: PER
Regulatory: None

## PROGRAM CASH FLOW PROJECTION ($,000)

| Prog Cost | Exp to Previous Year | FY26 | FY27 | FY28 | FY29 | FY30 | FY31 | FY32 | FY33 | FY34 | FY35 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $10,380 | $983 | $2,290 | $2,919 | $2,919 | $1,247 | $22 | $0 | $0 | $0 | $0 | $0 |

## PROJECT DESCRIPTION

This project includes the identification and reduction of points of inflow into locality and HRSD owned sanitary sewer systems within the Boat Harbor service area. Identification may include data analysis, smoke testing, flow and conductivity monitoring and other field investigations. Inflow reduction strategies may include sealing of manholes, elimination of direct connections, as well as, sealing and replacement of laterals and cleanouts. The Regional Wet Weather Management Plan (RWWMP) has identified basins in current need of inflow reductions and areas of saltwater inflow have been identified through data analysis. Areas to implement inflow reduction strategies will be targeted based on susceptibility to saltwater inflow and through further data analysis of the basins identified in RWWMP. HRSD will coordinate identification and reduction of inflow with locality partners. This project will benefit from the piloted strategies and analysis performed in Phase I.

## PROJECT JUSTIFICATION

Hydrographs, flow monitoring, and conductivity monitoring indicate that rapid increases in flow occur during wet weather and high tide events. The rapid inflow of water into the system increases the risk of overflows due to limited hydraulic capacity and increases the risk of force main failures due to increased force main operating pressures. Peak flow reduction in the Boat Harbor service area is desirable to mitigate sanitary sewer overflow (SSO) risk. In addition, reduction of saltwater inflow will protect downstream SWIFT operations.

## FUNDING TYPE

Funding Type: Cash

## CONTACTS

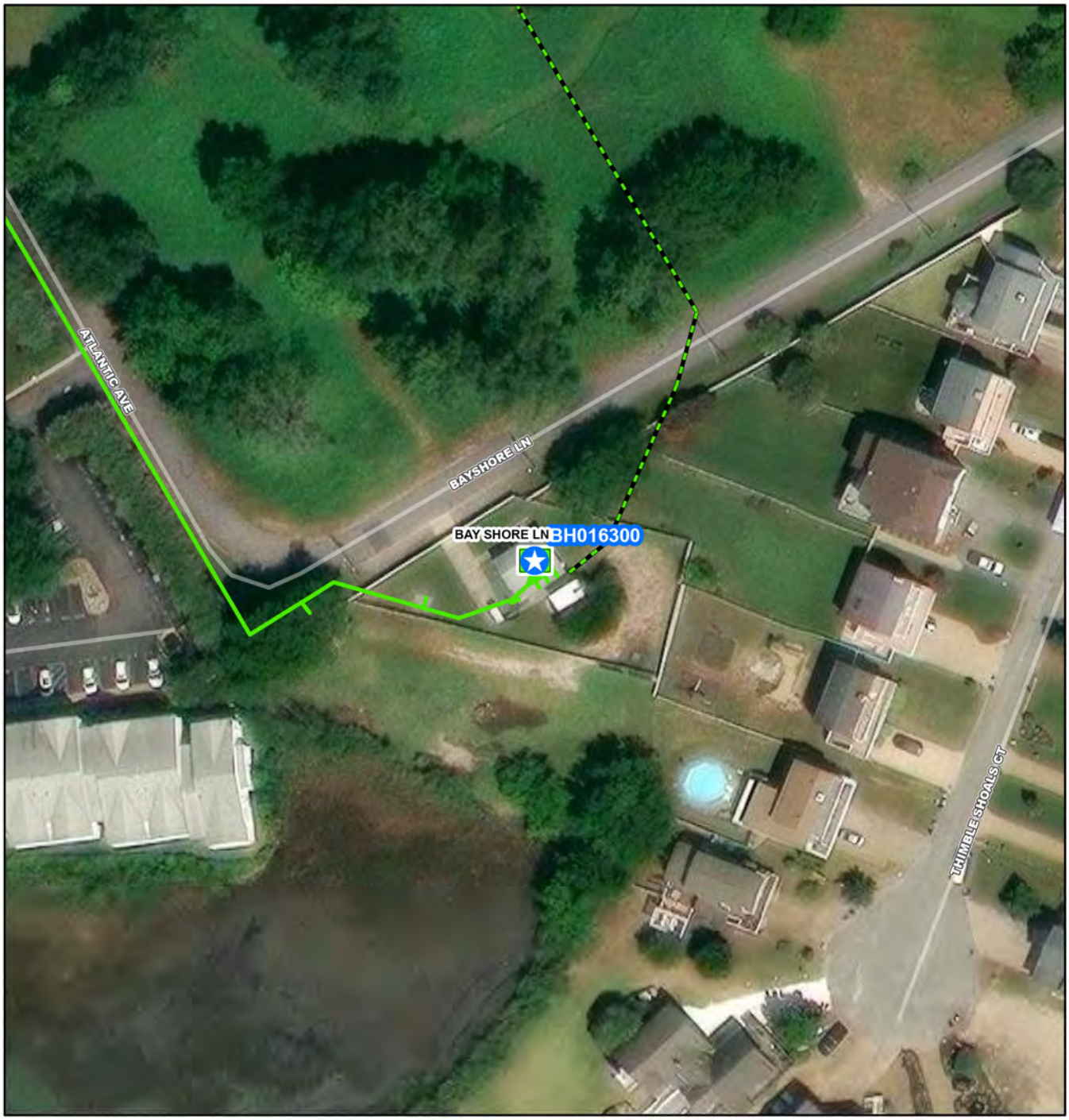
Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Shirley Smith
Contacts-Managing Dept: Engineering

## PROPOSED SCHEDULE START DATE

| | |
|---|---|
| PrePlanning | 04/03/2023 |
| PER | 12/01/2023 |
| Design Delay | 04/01/2025 |
| Design | 04/01/2025 |
| Bid Delay | 08/01/2025 |
| PreConstruction | 08/01/2025 |
| Construction | 11/01/2025 |
| Closeout | 12/01/2028 |

## COST ESTIMATE

| **Cost Estimate Class:** | **Class 5 (-20% to +100%)** |
|---|---|
| PrePlanning | $3,201 |
| PER | $582,000 |
| Design | $530,000 |
| PreConstruction | $212,000 |
| Construction | $9,000,000 |
| Closeout | $53,000 |
| **Est. Program Cost** | **$10,380,201** |
| Contingency Budget | $223,000 |
| **Est. Project Costs** | **$10,603,201** |




BH016300

- Project Interceptor Line
- Project Interceptor Point
- Project Location Point
- Project Area

**Legend**

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- CIP Project Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- WTP HRSD Treatment Plant
- PRS HRSD Pressure Reducing Station
- PS HRSD Pump Station

0 25 50 100 150 200 Feet

# BH016300

## Bayshore Pump Station Replacement

HRSD

N
W E
S

**CIP Location**

# Bayshore Pump Station Replacement

**PR_BH016300**

System: Boat Harbor
Type: Pump Stations

Driver Category: Capacity Improvements
Project Phase: Proposed
Regulatory: None

## PROGRAM CASH FLOW PROJECTION ($,000)

| Prog Cost | Exp to Previous Year | FY26 | FY27 | FY28 | FY29 | FY30 | FY31 | FY32 | FY33 | FY34 | FY35 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $14,206 | $0 | $0 | $0 | $0 | $0 | $0 | $322 | $874 | $6,505 | $6,505 | $0 |

## PROJECT DESCRIPTION

This project includes the replacement of the Bayshore Pump Station (PS) to address hydraulic and age-related conditional issues. The proposed replacement will include a relocated pump station and new gravity and force main connections to the existing systems.

## PROJECT JUSTIFICATION

Bayshore Pump Station was constructed in 1944. During moderate wet weather events, the station has experienced capacity issues resulting in numerous Sanitary Sewer Overflows (SSO). Over the past decade, this pump station has averaged one SSO per calendar year. In 2021, North Shore Interceptors installed an interim pump to provide additional hydraulic capacity for the station but SSOs still occur as this is not a permanent solution. The pumping configuration of this pump station is also limiting. With only one small pump and two larger pumps, the smaller pump is in operation the vast majority of the time for dry weather flows with no redundancy, and the two larger pumps only run during wet weather events. Due to this configuration, the firm capacity of this station is limited to just one of the larger pumps and is not sufficient for influent flows. In almost all wet weather events, both pumps run at full speed and again have no redundancy. In 2013, an electrical upgrade moved the generator to the exterior of the building. The elevated platform for this generator, combined with the permanently mounted external interim pump, has created an eye sore for the community. The station is near the City of Hampton's Buckroe Beach, and the densely populated neighboring parcels and adjacent community are adversely affected by these structures. Historically, there have been other age-related issues, including an electrical fire in 2008 where one of the internal breaker panels was completely lost.

## FUNDING TYPE

Funding Type: Revenue Bond

## CONTACTS

Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Michael Johnson
Contacts-Managing Dept: Operations-Interceptors

## PROPOSED SCHEDULE START DATE

| | |
|---|---|
| PrePlanning | 07/01/2030 |
| PER | 11/04/2030 |
| Design Delay | 07/02/2031 |
| Design | 07/02/2031 |
| Bid Delay | 07/02/2032 |
| PreConstruction | 07/02/2032 |
| Construction | 09/02/2032 |
| Closeout | 05/02/2034 |

## COST ESTIMATE

| **Cost Estimate Class:** | **Class 5 (-20% to +100%)** |
|---|---|
| PrePlanning | $0 |
| PER | $322,400 |
| Design | $873,600 |
| PreConstruction | $5,200 |
| Construction | $13,000,000 |
| Closeout | $5,200 |
| **Est. Program Cost** | **$14,206,400** |
| Contingency Budget | $2,433,600 |
| **Est. Project Costs** | **$16,640,000** |


BH016400

Project Interceptor Line
Project Interceptor Point
Project Location Point
Project Area

**Legend**

CIP Interceptor Point
CIP Pump Station Point
CIP Interceptor Line
CIP Abandonment
CIP Project Area
HRSD Interceptor Force Main
HRSD Interceptor Gravity Main
WTP HRSD Treatment Plant
PRS HRSD Pressure Reducing Station
PS HRSD Pump Station

0 25 50 100 150 200 Feet

# BH016400

**Jefferson Avenue Pump Station Electrical Improvements**

HRSD

N
W E
S

**CIP Location**

# Jefferson Avenue Pump Station Improvements

**PR_BH016400**

System: Boat Harbor
Type: Electrical

Driver Category: I&I Abatement-IP/RWWMP
Project Phase: Proposed
Regulatory: None

## PROGRAM CASH FLOW PROJECTION ($,000)

| Prog Cost | Exp to Previous Year | FY26 | FY27 | FY28 | FY29 | FY30 | FY31 | FY32 | FY33 | FY34 | FY35 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $920 | $0 | $200 | $720 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |

## PROJECT DESCRIPTION

This project will design and install a new standby generator, automatic transfer switch (ATS), independent utility service, and motor control center (MCC) at the Jefferson Avenue Pump Station. This equipment is required to ensure continuity of service at the pump station due to the planned decommissioning of the Boat Harbor Treatment Plant.

## PROJECT JUSTIFICATION

This project will ensure continuity of service at Jefferson Avenue Pump Station, prior to the decommissioning of Boat Harbor Treatment Plant. The pump station currently receives utility and emergency back-up power from the 13.8 kV Medium Voltage utility switchgear (i.e. electrical distribution system) at Boat Harbor Treatment Plant, which will be disconnected in December 2026 and reconfigured for the full-scale SWIFT facility at Nansemond Treatment Plant. This project will include the installation of underground cabling, conduit, and transformer for the new Dominion Energy utility service. In addition, the project will also include installation of a new standby generator, automatic transfer switch (ATS), motor control center (MCC), and associated electrical equipment.

## FUNDING TYPE

Funding Type: Revenue Bond

## CONTACTS

Contacts-Requesting Dept: Operations-E&I
Contacts-Dept Contacts: Charles Wright
Contacts-Managing Dept: Engineering

## PROPOSED SCHEDULE START DATE

| | |
|---|---|
| PrePlanning | 06/01/2025 |
| PER | 06/01/2025 |
| Design Delay | 06/01/2025 |
| Design | 07/01/2025 |
| Bid Delay | 06/01/2026 |
| PreConstruction | 06/01/2026 |
| Construction | 09/01/2026 |
| Closeout | 10/01/2026 |

## COST ESTIMATE

| **Cost Estimate Class:** | **Class 5 (-20% to +100%)** |
|---|---|
| PrePlanning | $0 |
| PER | $0 |
| Design | $200,000 |
| PreConstruction | $0 |
| Construction | $720,000 |
| Closeout | $0 |
| **Est. Program Cost** | **$920,000** |
| Contingency Budget | $46,000 |
| **Est. Project Costs** | **$966,000** |