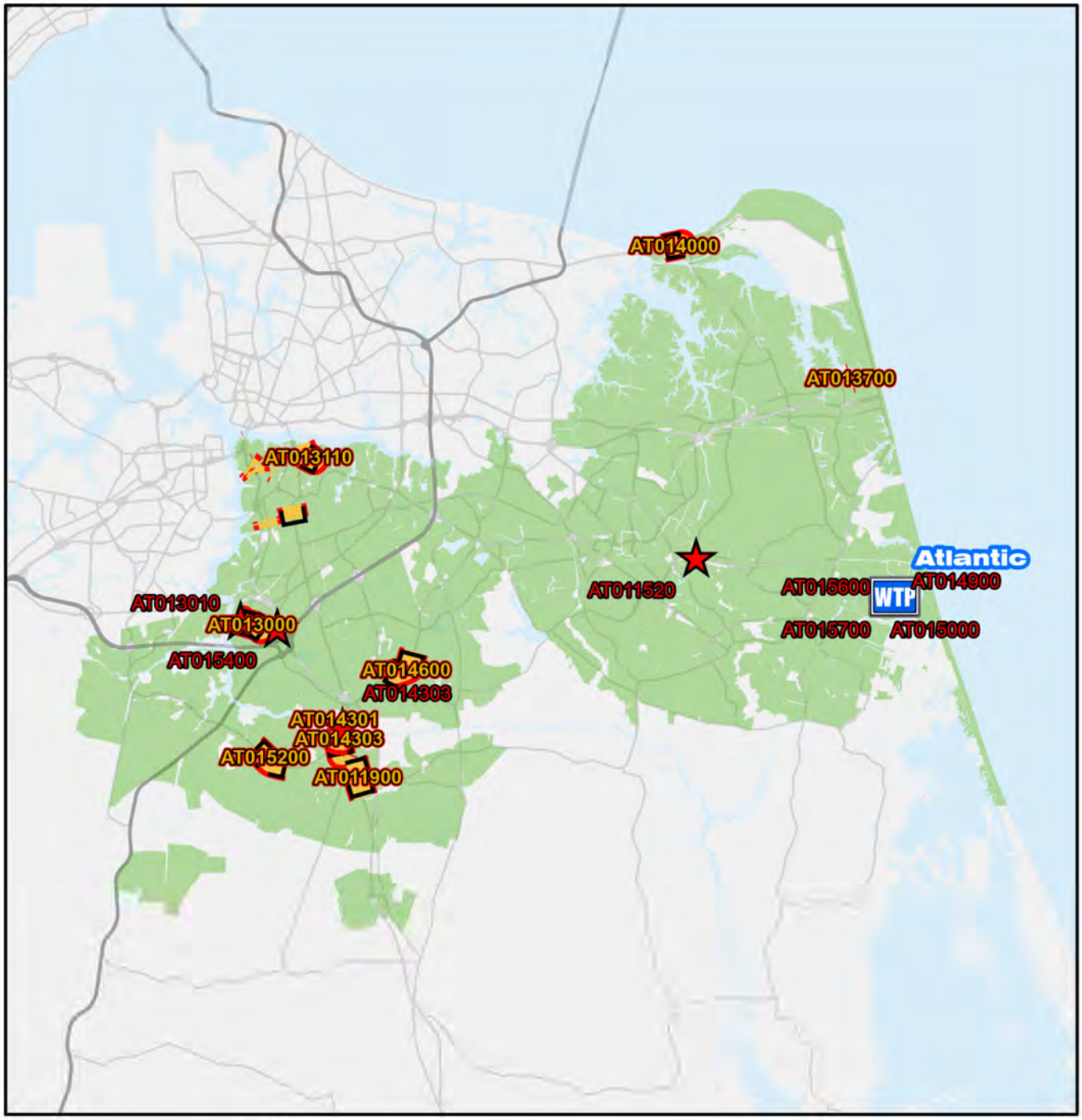
Atlantic Treatment Plant



Legend

- Atlantic 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
- HRSD Treatment Plant
- HRSD Pressure Reducing Station
- HRSD Pump Station

0 5,000 10,000 20,000 30,000 40,000 Feet

Atlantic Treatment Plant Service Area CIP Projects

Treatment Plant Projects

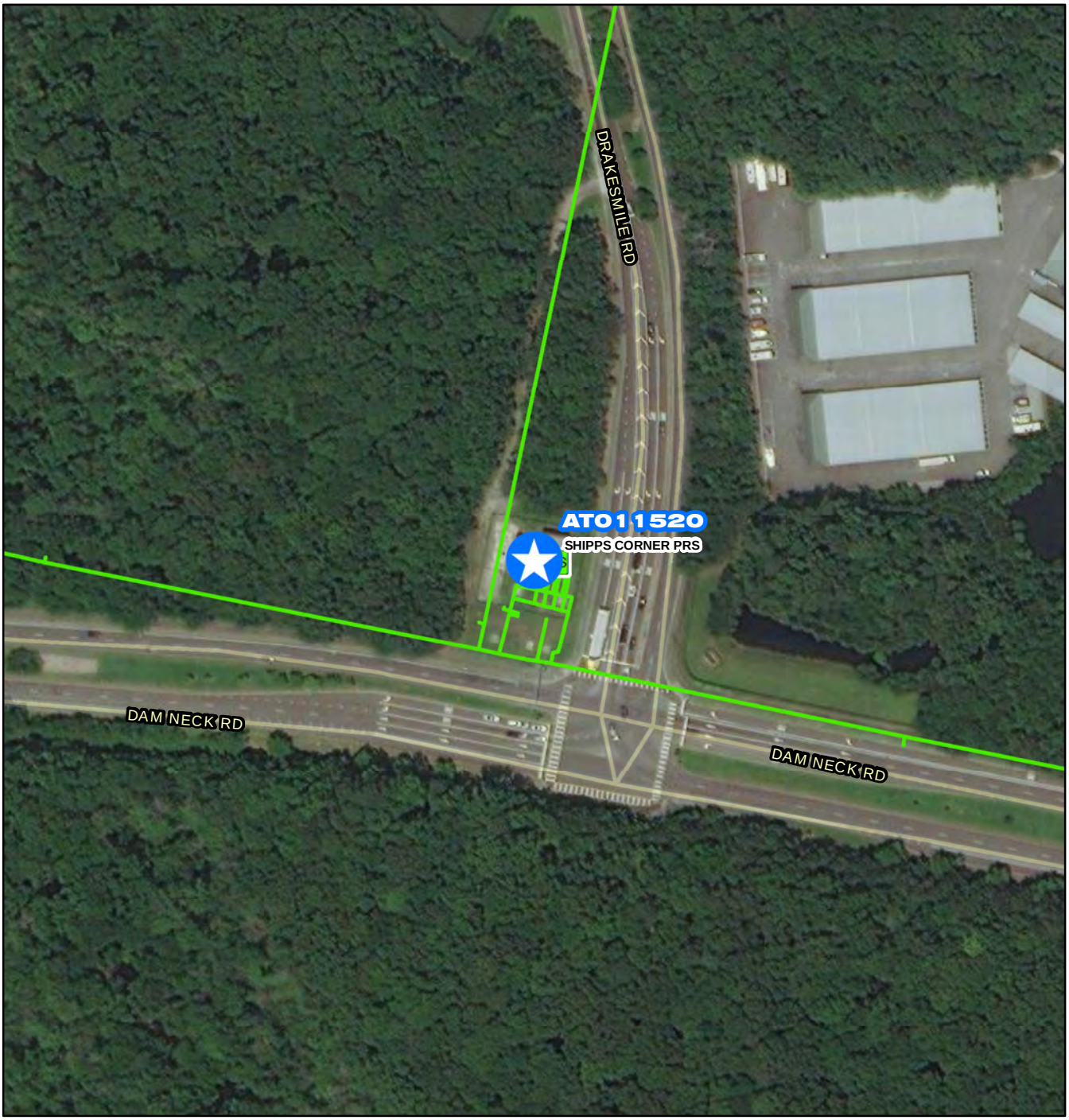
AT012920
AT014301
AT014302
AT014800
AT015100
AT015500
GN017900

HRSD

N

CIP Location

Service Area



AT01 1520

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station 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

AT01 1520

Shipps Corner Pressure Reducing Station Modifications

HRSD

N
W E
S

CIP Location

Shipps Corner Pressure Reducing Station Modifications

PR_AT011520

System: Atlantic
Type: Pump Stations

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$1,503	$68	$913	$523	$0	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project will replace the emergency generator at Shipps Corner Pressure Reducing Station (PRS). The underground fuel storage tank for the generator was replaced in 1994 which means the tank is nearing the end of it's useful life. Condition assessment will be performed during this project to determine if the tank needs to be replaced.

PROJECT JUSTIFICATION

This Shipps Corner PRS will be addressed in two separate phases and projects. This project (Phase II) will provide the reliability required by the Rehabilitation Action Plan and the Virginia SCAT regulations.
Phase I was addressed in AT011510 Shipps Corner Interim Pressure Reducing Station.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

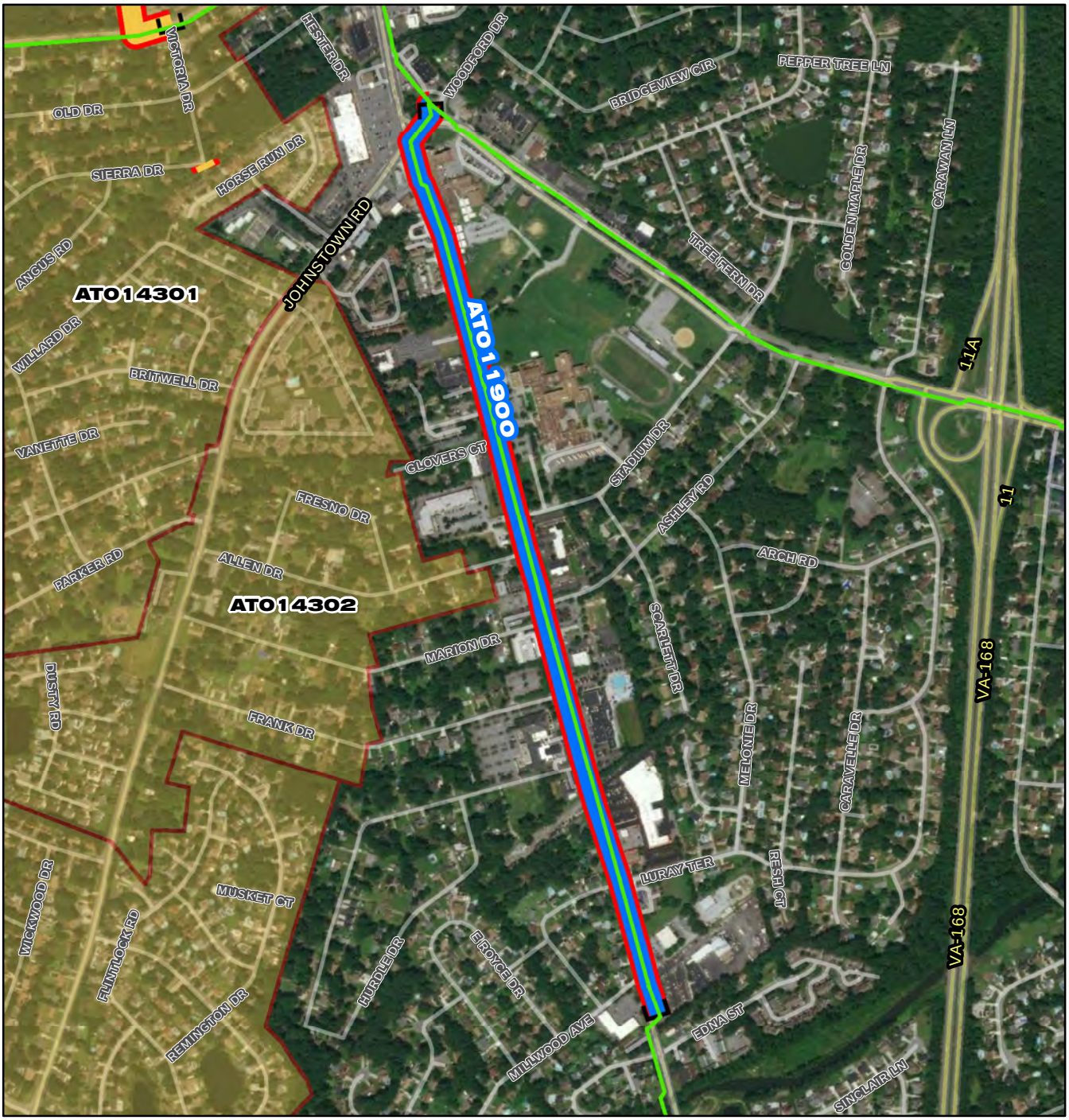
Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Jeff Scarano
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	01/01/2020
PER	02/01/2021
Design Delay	05/01/2022
Design	05/01/2022
Bid Delay	09/01/2022
PreConstruction	09/01/2022
Construction	02/01/2023
Closeout	10/01/2023

COST ESTIMATE

Cost Estimate Class:	**Class 4**
PrePlanning	$0
PER	$26,214
Design	$82,887
PreConstruction	$0
Construction	$1,394,107
Closeout	$0
Est. Program Cost	**$1,503,208**
Contingency Budget	$348,527
Est. Project Costs	**$1,851,735**



ATO11900

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station 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

0 312.5 625 1,250 1,875 2,500 Feet

N W E S

CIP Location

ATO11900

Great Bridge Interceptor Extension
16-Inch Replacement

HRSD

Great Bridge Interceptor Extension 16-Inch Replacement

PR_AT011900

System: Atlantic
Type: Pipelines

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$8,680	$319	$400	$3,118	$4,798	$46	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project will address eleven (11) full circle clamps and approximately 5,585 linear feet of pipe on the 16-inch asbestos concrete Great Bridge Interceptor Extension Force Main (SF-184) along Battlefield Boulevard in Chesapeake. The 16-inch pipe will be replaced with 24-inch pipe.

PROJECT JUSTIFICATION

This project will address stress cracks and coupling failures. There are eleven (11) documented full circle clamps used in the initial installation instead of standard adapters and couplings. The clamp hardware poses a material risk of failure. The main line valve, AT-1161-2, needs to be replaced due to inability to get spare parts. Since 1989, there have been six (6) documented failures along this force main. The most recent was in September of 2016. Condition assessment activities completed in early 2017 indicated that only the full circle clamps and the southernmost portion of this force main are a material risk of failure. However, the pipe also requires upsizing to allow industrial flows to be shifted to the Atlantic Treatment Plant in order to protect the Nansemond Treatment Plant's SWIFT facility.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Holly Anne Matel
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	03/01/2021
PER	07/01/2021
Design Delay	04/01/2022
Design	04/01/2022
Bid Delay	10/01/2023
PreConstruction	11/01/2023
Construction	02/01/2024
Closeout	03/01/2025

COST ESTIMATE

Cost Estimate Class:	
PrePlanning	$0
PER	$218,740
Design	$599,300
PreConstruction	$34,340
Construction	$7,758,910
Closeout	$68,700
Est. Program Cost	**$8,679,990**
Contingency Budget	$1,551,782
Est. Project Costs	**$10,231,772**

AT01 2920

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station 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

0 265 530 1,060 1,590 2,120 Feet

AT01 2920

Atlantic Treatment Plant Access Road Extension

HRSD

N
W E
S

CIP Location

Atlantic Treatment Plant Access Road Extension

PR_AT012920

System: Atlantic
Type: Facilities, Buildings and Capital Equipment

Driver Category: Performance Upgrades
Project Phase: PER
Regulatory: None

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$10,470	$483	$1,456	$2,931	$4,200	$1,400	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project is to provide a second vehicle access road into the Atlantic Treatment Plant. The new private two lane road will connect Firefall Drive to Dam Neck Road.

PROJECT JUSTIFICATION

The rerouting of flow from the Chesapeake Elizabeth Treatment Plant (CETP) to the Atlantic Treatment Plant will increase bio-solids production; consequently, truck traffic will increase. In addition, the new Fats, Oils, and Grease (FOG) Receiving Facility will result in an increase of truck traffic. Rerouting operations and construction related truck traffic from the residential streets adjacent to the Atlantic Treatment Plant will improve public safety and HRSD's public image. A new access road would also facilitate construction and operation of an expansion to the thermal hydrolysis process.

FUNDING TYPE

Funding Type: VCWRLF

CONTACTS

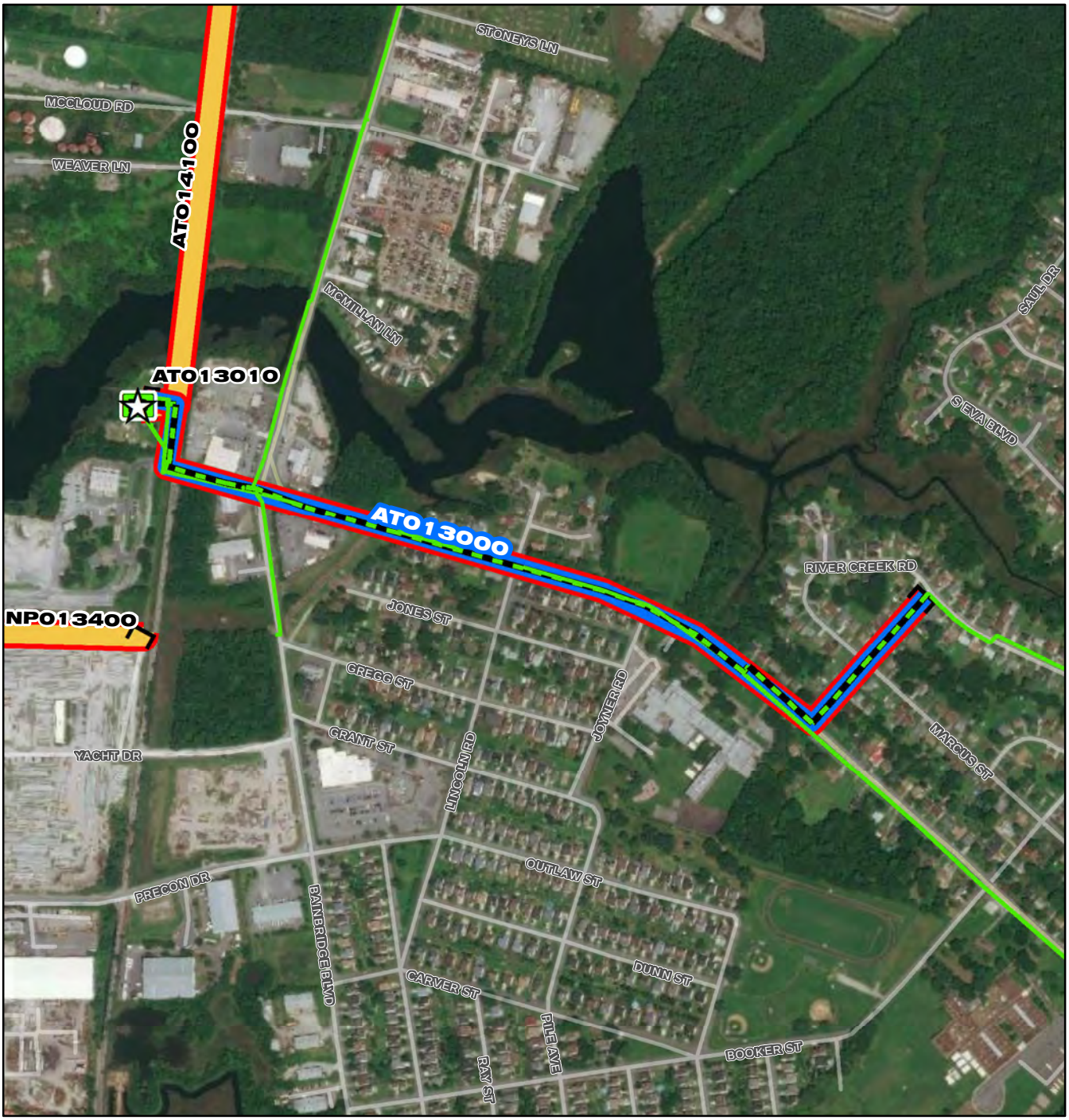
Contacts-Requesting Dept: Operations-Treatment
Contacts-Dept Contacts: Jeff Layne
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	07/02/2018
PER	08/01/2018
Design Delay	02/01/2019
Design	05/01/2022
Bid Delay	05/01/2023
PreConstruction	07/01/2023
Construction	11/01/2023
Closeout	11/01/2025

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$0
PER	$192,276
Design	$1,746,888
PreConstruction	$131,068
Construction	$8,400,000
Closeout	$0
Est. Program Cost	**$10,470,232**
Contingency Budget	$2,100,000
Est. Project Costs	**$12,570,232**



AT013000

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station 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

0 225 450 900 1,350 1,800 Feet

N W E S

CIP Location

AT013000

Washington District Pump Station Area Sanitary Sewer Improvements

HRSD

Washington District Pump Station Area Sanitary Sewer Improvements

PR_AT013000

System: Atlantic
Type: Pipelines

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$6,476	$539	$1,626	$1,771	$1,771	$756	$15	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project is to rehabilitate and/or replace 4,300 linear feet of gravity pipeline with associated manholes. Pipe diameter is 18 inches. Project extends from MH-SG-162-3950 to SS-PS-131-1. This project will include the permanent abandonment of the inactive Washington District outfall. A bar screen will be installed for the proposed 24-inch influent into wet well. Approximately, 2,200 LF of force main from Dozier's Corner will be replaced due to being 1960 vintage Cast Iron piping.

PROJECT JUSTIFICATION

Condition assessment activities indicate that these assets present a material risk of failure due to physical condition defects.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

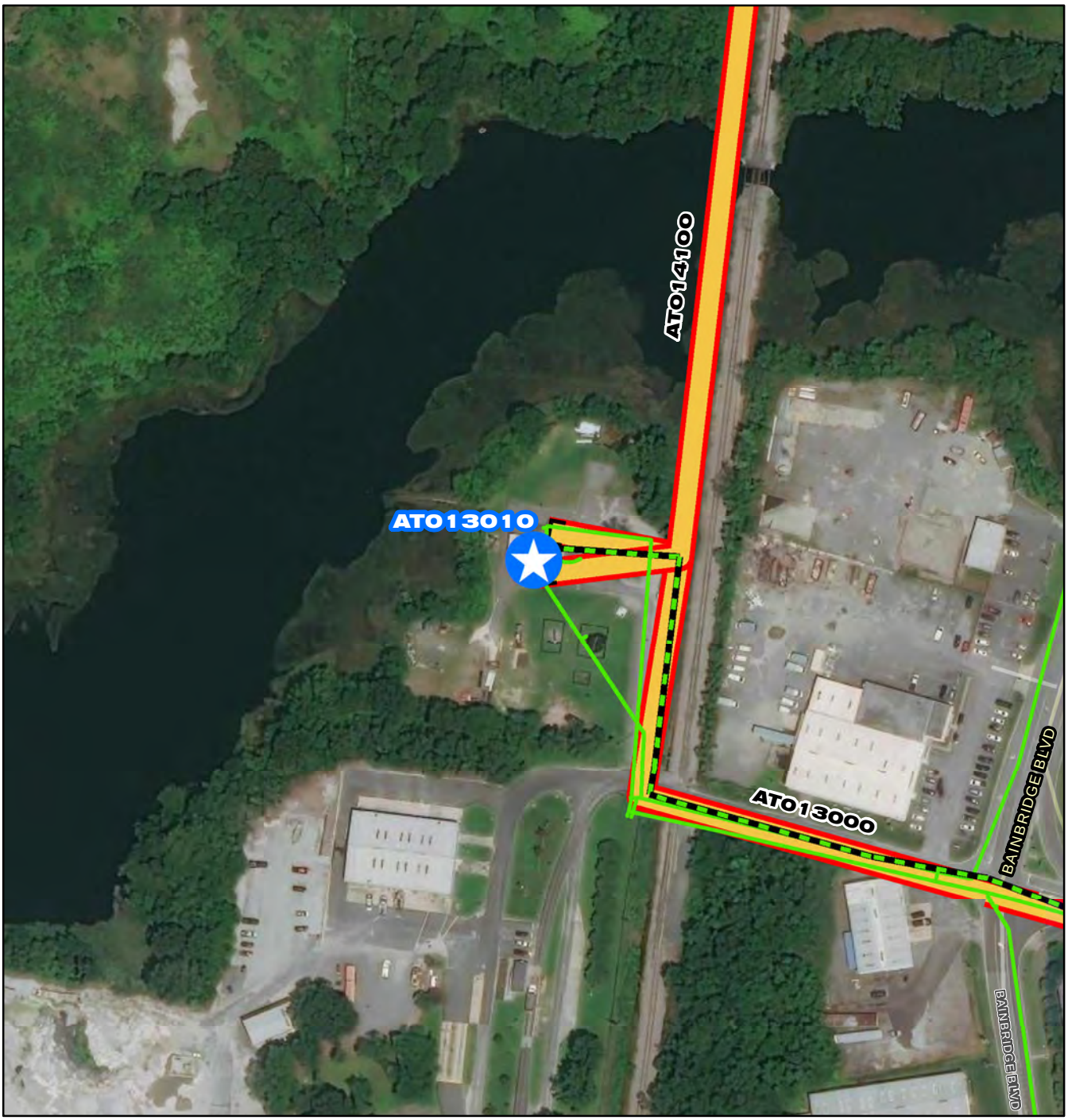
Contacts-Requesting Dept: Compliance Assurance
Contacts-Dept Contacts: Phil Hubbard
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	10/06/2021
PER	12/01/2018
Design Delay	
Design	05/02/2019
Bid Delay	03/02/2022
PreConstruction	04/01/2022
Construction	08/31/2022
Closeout	01/01/2026

COST ESTIMATE

Cost Estimate Class:	**Class 2**
PrePlanning	$0
PER	$94,850
Design	$421,139
PreConstruction	$10,000
Construction	$5,800,000
Closeout	$150,000
Est. Program Cost	**$6,475,989**
Contingency Budget	$700,000
Est. Project Costs	**$7,175,989**



AT013010

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station 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

AT013010

Washington District Pump Station Replacement

HRSD

N
W E
S

CIP Location

Washington District Pump Station Replacement

PR_AT013010

System: Atlantic
Type: Pipelines

Driver Category: Aging Infrastructure/Rehabilitation
Project Phase: Pre Planning
Regulatory: Rehab Plan Phase Two

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$9,971	$457	$1,269	$4,935	$3,296	$13	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project will replace the Washington District Pump Station in order to meet the 100 year flood plain and will need to raise the finished floor in order to meet this until 2070.

PROJECT JUSTIFICATION

This pump station is also part of the Environmental Protection Agency (EPA) Rehabilitation Action Plan Phase II and is due May 5, 2025.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

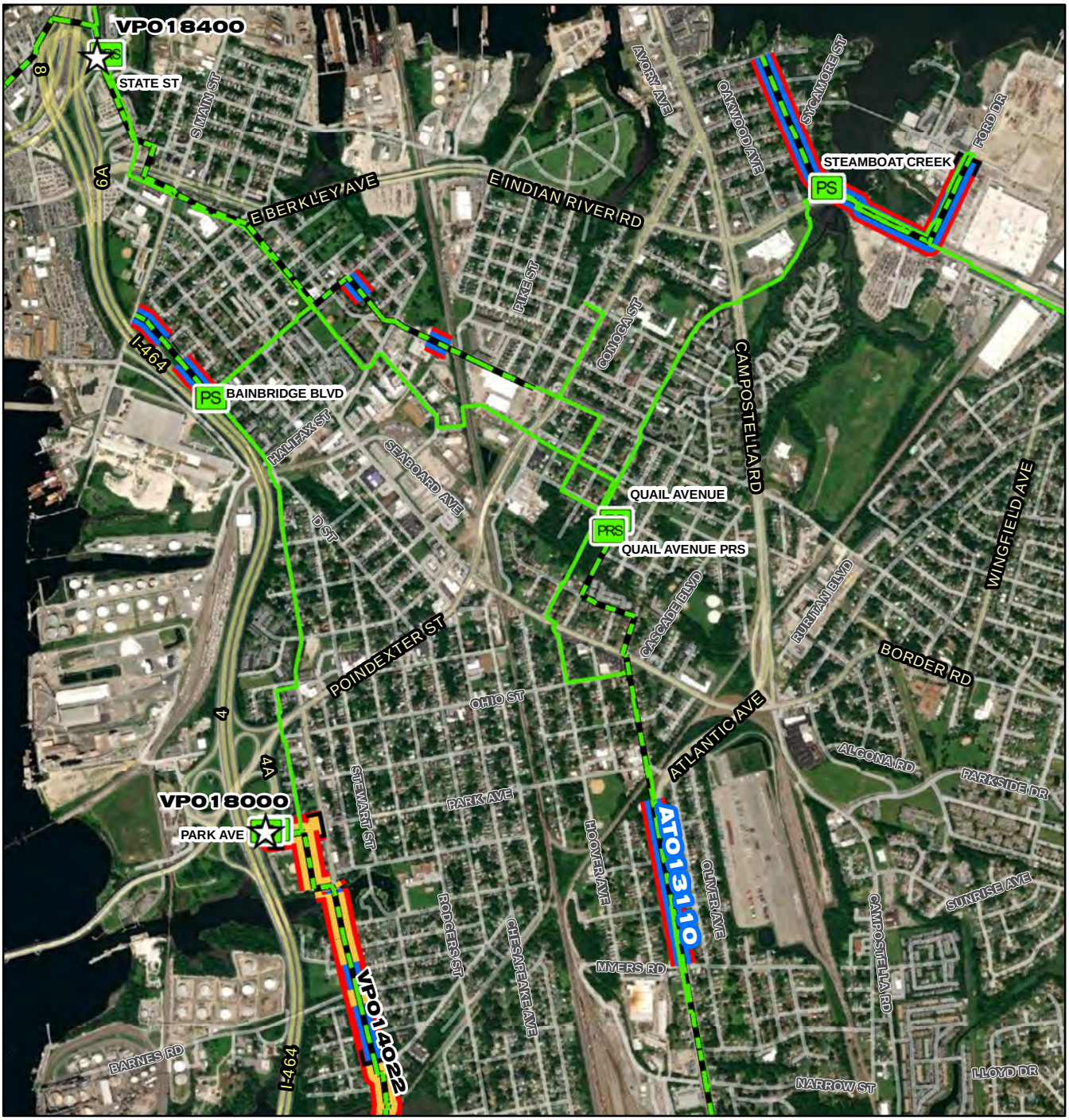
Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Phil Hubbard
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	
PER	08/01/2021
Design Delay	03/01/2022
Design	03/01/2022
Bid Delay	01/02/2023
PreConstruction	02/01/2023
Construction	05/02/2023
Closeout	03/02/2025

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$0
PER	$190,700
Design	$650,000
PreConstruction	$40,000
Construction	$9,010,000
Closeout	$80,000
Est. Program Cost	**$9,970,700**
Contingency Budget	$1,255,300
Est. Project Costs	**$11,226,000**



AT013110

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station 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

0 600 1,200 2,400 3,600 4,800 Feet

N
W E
S

CIP Location

AT013110

South Norfolk Area Gravity Sewer Improvements, Phase II

HRSD

South Norfolk Area Gravity Sewer Improvements, Phase II

PR_AT013110

System: Atlantic
Type: Pipelines

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$10,833	$614	$3,296	$6,923	$0	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project will rehabilitate and/or replace gravity sewer segments and manholes in the South Norfolk area of Chesapeake. Refer to the Rehab Plan for full listing of all affected assets. The pipeline under I-264 in South Norfolk adjacent to State Street Pump Station was addressed under a separate CIP project, AT013100 South Norfolk Area Gravity Sewer Improvements, Phase I (Interstate Crossing).

PROJECT JUSTIFICATION

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

FUNDING TYPE

Funding Type: VCWRLF

CONTACTS

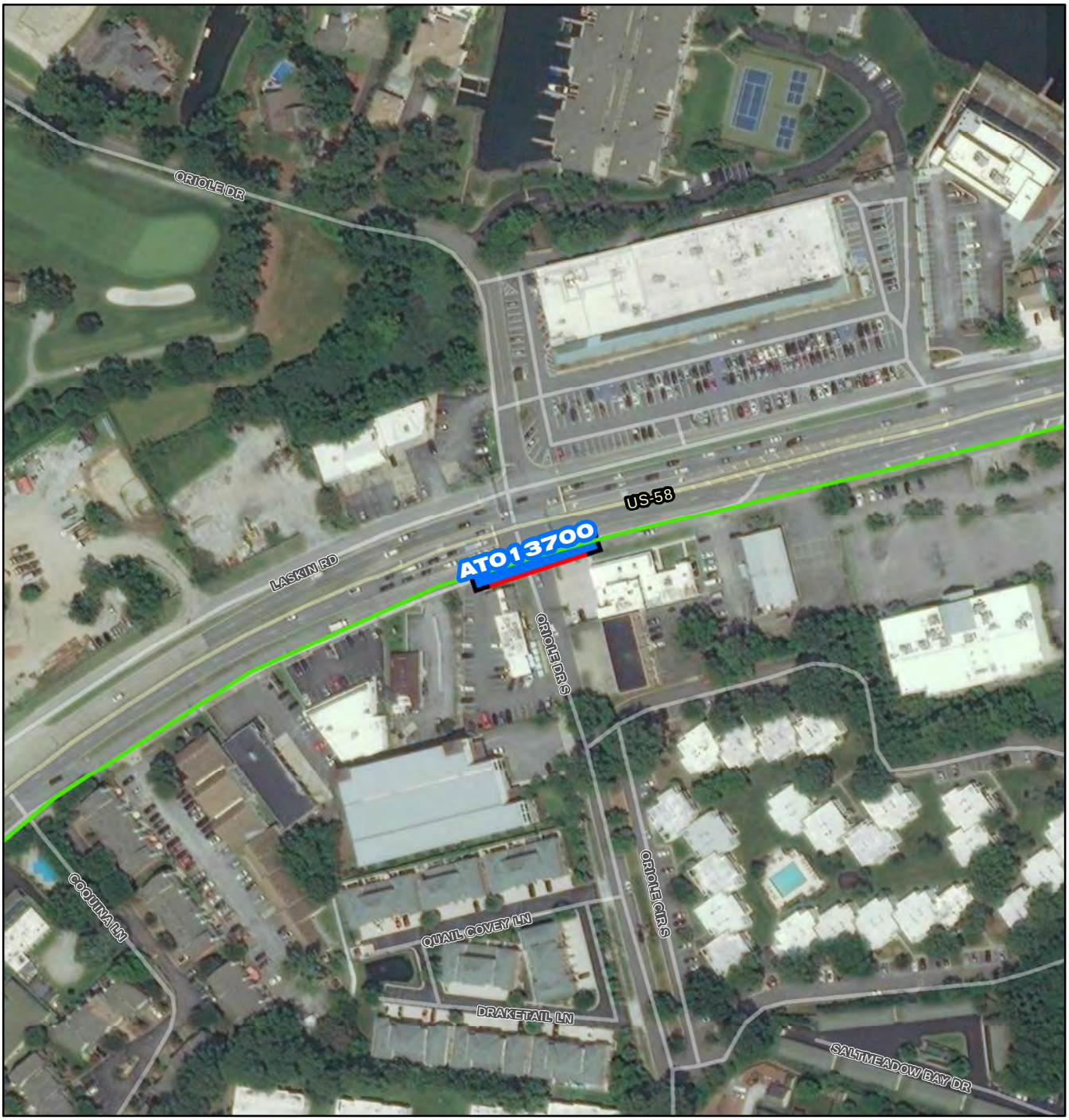
Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Laura Kirkwood
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	05/01/2020
PER	09/01/2020
Design Delay	10/01/2021
Design	11/01/2021
Bid Delay	11/01/2022
PreConstruction	11/01/2022
Construction	03/01/2023
Closeout	04/01/2024

COST ESTIMATE

Cost Estimate Class:	**Class 4**
PrePlanning	$0
PER	$185,360
Design	$628,000
PreConstruction	$20,000
Construction	$10,000,000
Closeout	$0
Est. Program Cost	**$10,833,360**
Contingency Budget	$2,130,000
Est. Project Costs	**$12,963,360**



AT013700

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station 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 65 130 260 390 520 Feet

N
W E
S

CIP Location

AT013700

Atlantic Trunk Interceptor Force Main Relocation (VDOT Laskin Road Betterment)

HRSD

Atlantic Trunk Interceptor Force Main Relocation-VDOT Laskin Road Betterment **PR_AT013700**

System: Atlantic
Type: Pipelines

Driver Category: Aging Infrastructure/Rehabilitation
Project Phase: Proposed
Regulatory: None

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$613	$329	$248	$36	$0	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project is to design and construct approximately 2000 linear feet (LF) of 30-inch ductile iron force main (SF-134) along Laskin Road in the City of Virginia Beach. This project will be coordinated with a VDOT Laskin Road Improvement project (No. 0058-134-F02) as a betterment.

PROJECT JUSTIFICATION

This project will replace a section of the 30-inch 1965 reinforced concrete pipe that has known repairs. The VDOT extent of relocation ends just west of S Oriole Drive in a section of force main with two known repairs. This project will extend the relocation 200 LF to the east of S Oriole Drive to a section of force main with no previous repairs. Extending the relocation span will minimize the risk of additional project costs, potential delays to the VDOT project, and traffic impacts.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Phil Hubbard
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	01/01/2014
PER	01/01/2014
Design Delay	01/01/2014
Design	01/01/2014
Bid Delay	11/01/2017
PreConstruction	11/01/2017
Construction	09/01/2020
Closeout	09/01/2022

COST ESTIMATE

Cost Estimate Class:	**Class 1**
PrePlanning	$0
PER	$0
Design	$28,149
PreConstruction	$0
Construction	$369,036
Closeout	$216,000
Est. Program Cost	**$613,185**
Contingency Budget	$12,960
Est. Project Costs	**$626,145**

ATO14000

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station 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

0 190 380 760 1,140 1,520 Feet

N W E S

CIP Location

ATO14000

Lynnhaven-Great Neck IFM (SF-021) Relocation

HRSD

Lynnhaven-Great Neck IFM (SF-021) Relocation

PR_AT014000

System: Atlantic
Type: Pipelines

Driver Category: Relocation
Project Phase: Design
Regulatory: None

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$1,924	$355	$0	$523	$1,046	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

The project will abandon the existing 16-inch HRSD Asbestos Cement (AC) Force Main (FM), SF-021, in E. Shore Drive and SF-022 to the north of Valve Guide CE5030. The total length to be abandoned is approximately 3,600 linear feet (LF). Service to City of Virginia Beach (City) Pump Station 200 will be provided by a new force main installed in the Shore Drive corridor as part of the City's Shore Drive Corridor Improvements. The City will manage the design and construction of the new force main and will assume ownership of this facility and all associated appurtenances. This project also includes the relocation of valve complex CE5030 due to a proposed physical conflict.

PROJECT JUSTIFICATION

During the Lesner Bridge replacement, HRSD abandoned the force main to the west leaving only a single City sewer pump station utilizing this line. Due to multiple physical conflicts with proposed storm drainage infrastructure, it is in the best interest of HRSD and the City to replace the existing force main with a new and appropriately sized pipe given the changed system conditions. The construction of this force main (~3,200 LF) would be at the discretion of the City. HRSD will enter a cost sharing agreement to fund the new sewer infrastructure under the condition that it will be dedicated to Virginia Beach Department of Public Utilities (DPU) for ownership, operation, and maintenance.

FUNDING TYPE

Funding Type: Cash

CONTACTS

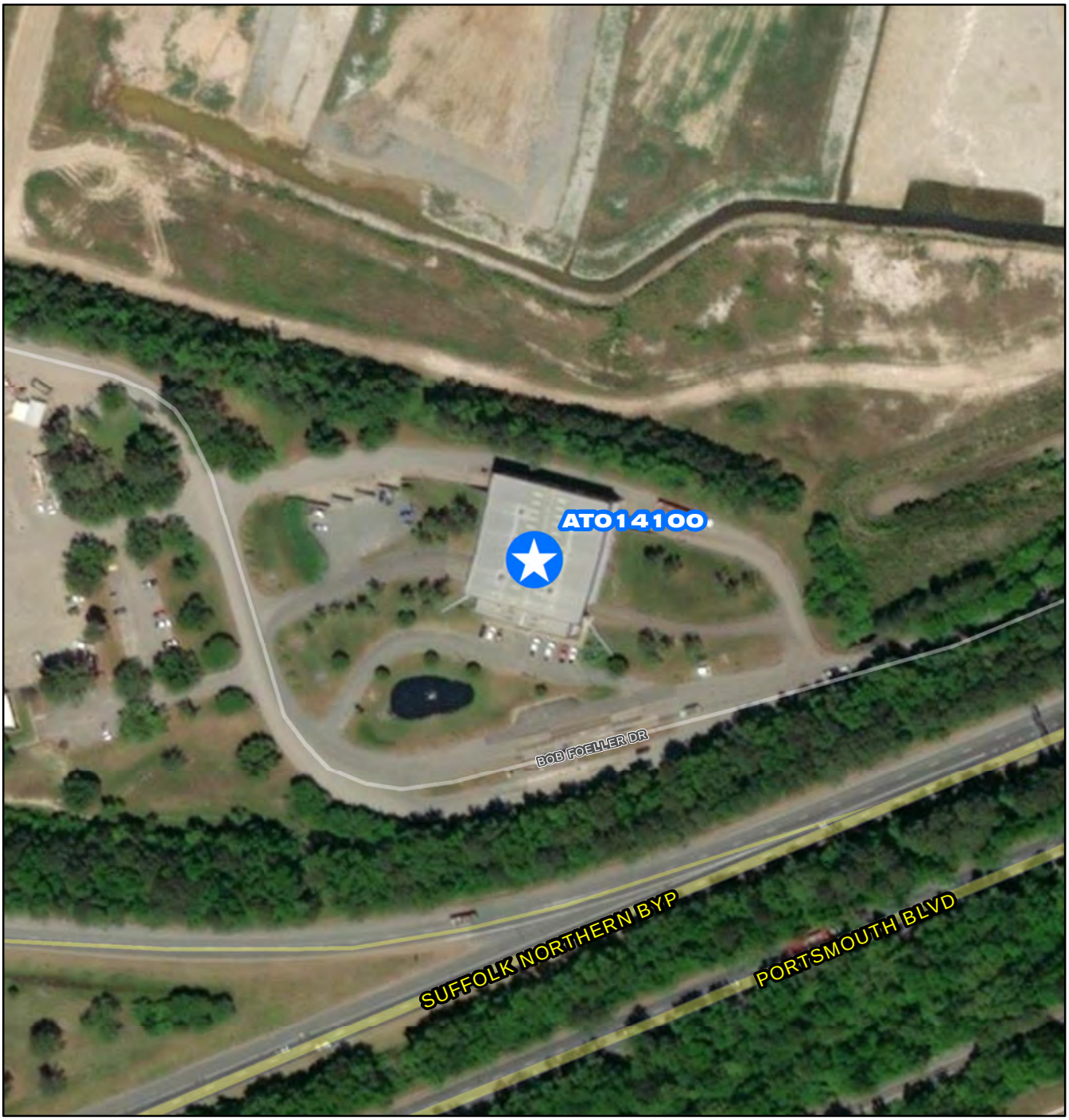
Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Ryan Radspinner
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	06/01/2017
PER	06/29/2017
Design Delay	08/18/2017
Design	04/27/2018
Bid Delay	07/31/2018
PreConstruction	04/09/2019
Construction	07/23/2019
Closeout	03/01/2024

COST ESTIMATE

Cost Estimate Class:	
PrePlanning	$0
PER	$0
Design	$27,063
PreConstruction	$0
Construction	$327,928
Closeout	$1,568,650
Est. Program Cost	**$1,923,641**
Contingency Budget	$156,865
Est. Project Costs	**$2,080,506**



AT014100

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station 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

AT014100

Suffolk Regional Landfill Transmission Force Main

HRSD

N
W E
S

CIP Location

Suffolk Regional Landfill Transmission Force Main

PR_AT014100

System: Atlantic
Type: Wastewater Treatment

Driver Category: Risk Mitigation
Project Phase: Design
Regulatory: None

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$5,641	$1,641	$4,000	$0	$0	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

The project will reimburse Southeastern Public Service Authority (SPSA) for the construction of a treatment plant they will operate to treat their leachate.

PROJECT JUSTIFICATION

SPSA has a permit allowing leachate discharge into the HRSD collection system. This leachate could have negative impacts on the SWIFT facility at the Nansemond Treatment Plant. The identified solution is to have SPSA construct and operate a privately owned treatment plant. HRSD will cost share with SPSA for a portion of the plant cost.

FUNDING TYPE

Funding Type: Cash

CONTACTS

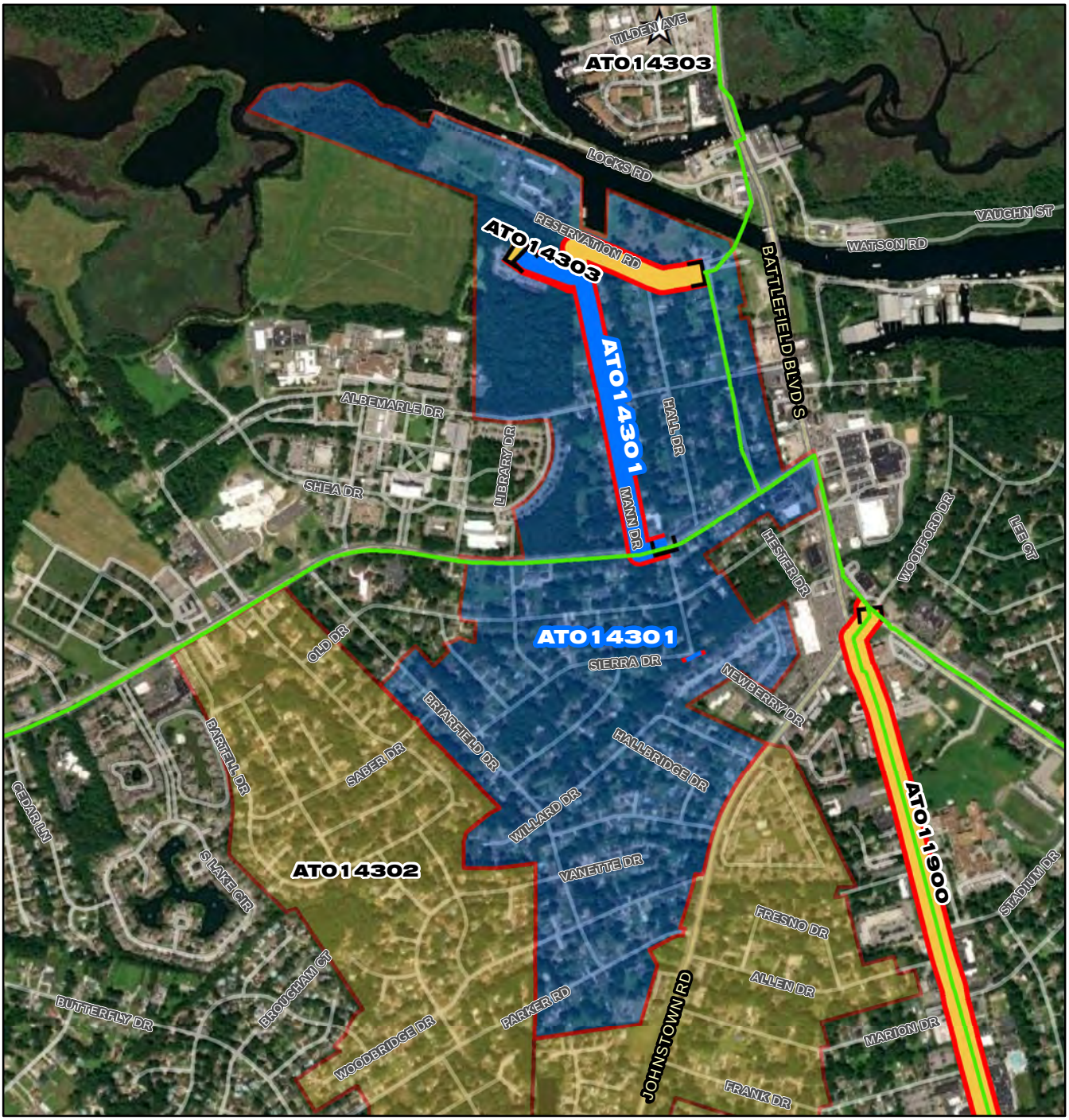
Contacts-Requesting Dept: General Manager
Contacts-Dept Contacts: Jay Bernas
Contacts-Managing Dept: General Manager

PROPOSED SCHEDULE START DATE

PrePlanning	03/01/2018
PER	07/01/2018
Design Delay	01/01/2019
Design	01/01/2019
Bid Delay	04/01/2020
PreConstruction	04/01/2020
Construction	07/01/2022
Closeout	05/01/2023

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$97,000
PER	$80,400
Design	$1,463,792
PreConstruction	$0
Construction	$0
Closeout	$4,000,000
Est. Program Cost	**$5,641,192**
Contingency Budget	$1,358,808
Est. Project Costs	**$7,000,000**



ATO14301

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station 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

0 400 800 1,600 2,400 3,200 Feet

N W E S

CIP Location

ATO14301

Atlantic Service Area I-I Reduction Phase I (CHES)

HRSD

Atlantic Service Area I/I Reduction Phase I (CHES) PR_AT014301

System: Atlantic
Type: Locality and Private Property

Driver Category: I&I Abatement-IP/RWWMP
Project Phase: Proposed
Regulatory: Integrated Plan-HPP 1

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$12,864	$519	$858	$865	$3,196	$7,405	$20	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

Install 280 linear feet (LF) of 12-inch gravity main (GM); Install 2,760 LF of 16-inch GM; CHES-067 Comprehensive I/I Reduction Plan.

PROJECT JUSTIFICATION

As part of HRSD's Integrated Plan, a program of High Priority RWWMP Projects (HPP) will be constructed through 2030. These projects were selected based on their ability to provide the greatest environmental and human health benefits. Further, this $200+ million investment will significantly reduce sanitary sewer overflow (SSO) volume at the 5-year level of service by 47 percent.

FUNDING TYPE

Funding Type: Cash

CONTACTS

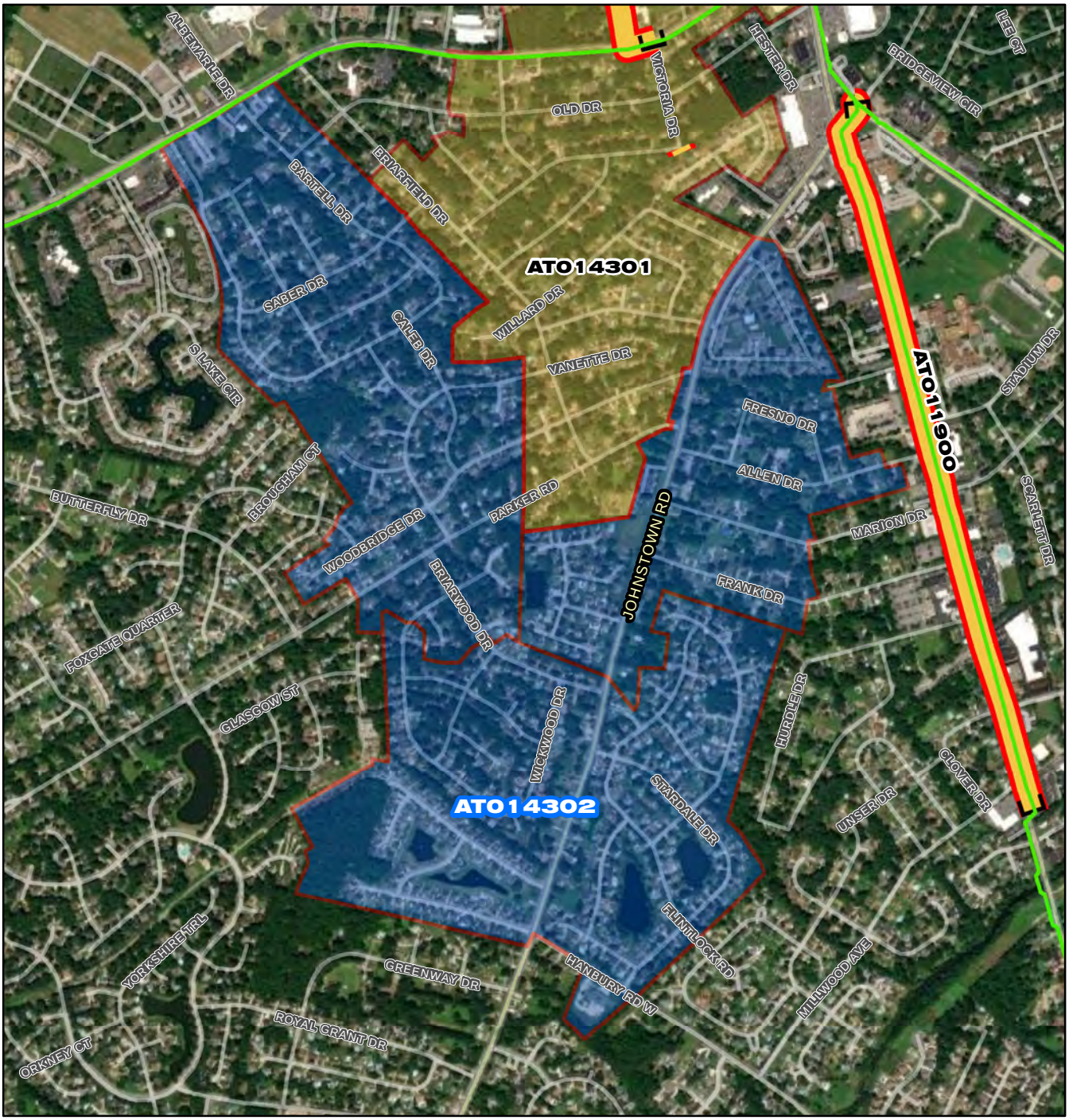
Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Jeff Scarano
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	02/01/2022
PER	09/01/2022
Design Delay	03/01/2024
Design	03/01/2024
Bid Delay	12/01/2024
PreConstruction	12/01/2024
Construction	03/01/2025
Closeout	06/01/2026

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$778,945
PER	$1,077,349
Design	$867,779
PreConstruction	$22,032
Construction	$10,095,537
Closeout	$22,032
Est. Program Cost	**$12,863,673**
Contingency Budget	$2,459,758
Est. Project Costs	**$15,323,431**



ATO14302

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station 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

0 400 800 1,600 2,400 3,200 Feet

N
W E
S

CIP Location

ATO14302

Atlantic Service Area I-I Reduction Phase II (CHES)

HRSD

Atlantic Service Area I/I Reduction Phase II (CHES) PR_AT014302

System: Atlantic
Type: Locality and Private Property

Driver Category: I&I Abatement-IP/RWWMP
Project Phase: Proposed
Regulatory: Integrated Plan-HPP 1

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$11,090	$231	$977	$702	$1,166	$6,850	$1,160	$4	$0	$0	$0	$0

PROJECT DESCRIPTION

CHES-032 General I/I Reduction Plan; CHES-047 Data-Driven I/I Reduction Plan; CHES-111 General I/I Reduction Plan.

PROJECT JUSTIFICATION

As part of HRSD's Integrated Plan, a program of High Priority RWWMP Projects (HPP) will be constructed through 2030. These projects were selected based on their ability to provide the greatest environmental and human health benefits. Further, this $200+ million investment will significantly reduce sanitary sewer overflows (SSO) volume at the 5-year level of service by 47 percent.

FUNDING TYPE

Funding Type: Cash

CONTACTS

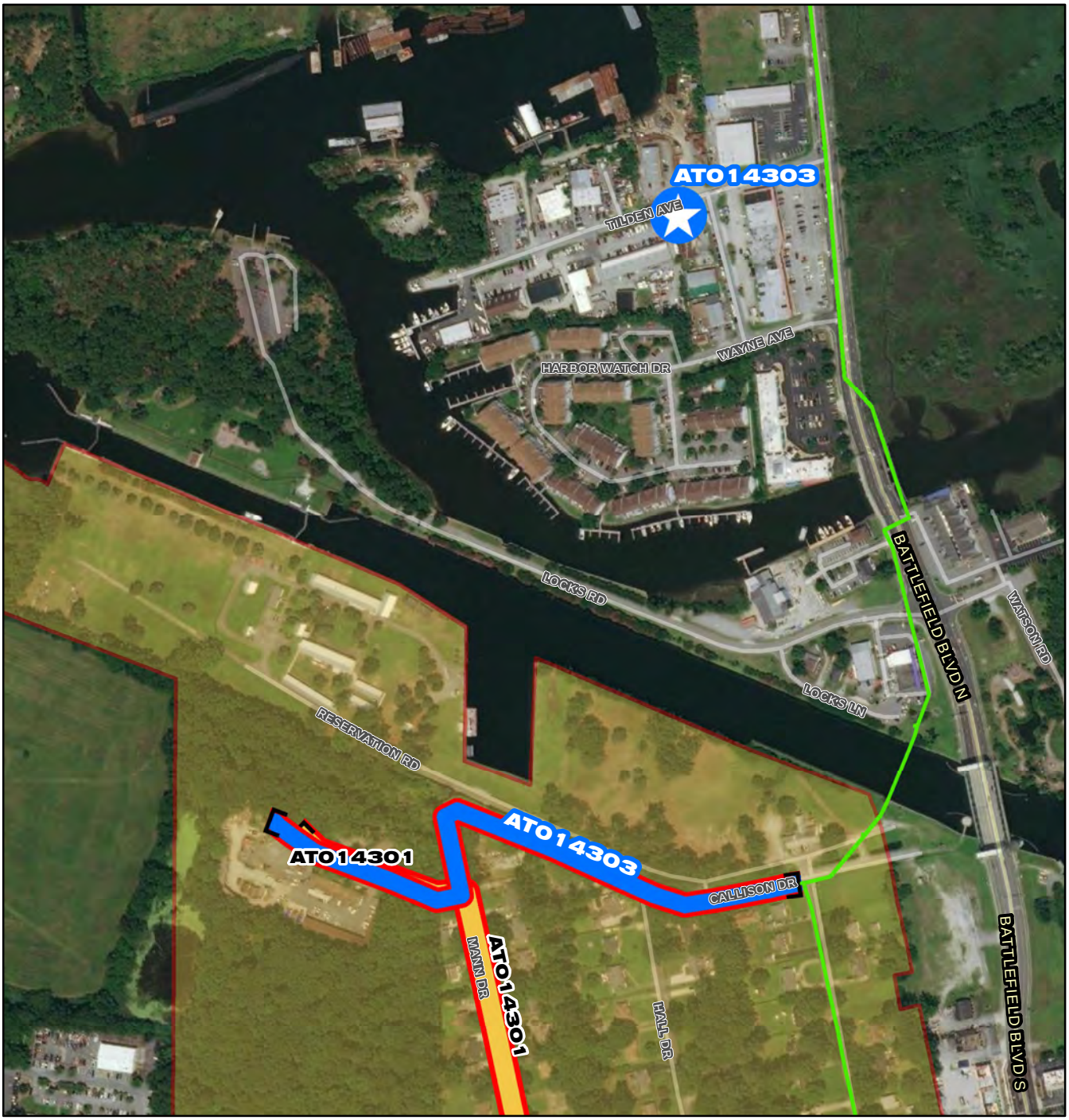
Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Jeff Scarano
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	05/01/2022
PER	12/01/2022
Design Delay	06/01/2024
Design	06/01/2024
Bid Delay	03/01/2025
PreConstruction	03/01/2025
Construction	06/01/2025
Closeout	09/01/2026

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$806,868
PER	$1,031,281
Design	$644,820
PreConstruction	$22,032
Construction	$8,562,595
Closeout	$22,032
Est. Program Cost	**$11,089,629**
Contingency Budget	$2,055,029
Est. Project Costs	**$13,144,658**



AT01 4303

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station 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

0 145 290 580 870 1,160 Feet

N W E S

CIP Location

AT01 4303

Chesapeake Pump Station Capacity Improvements (AT-HPP-01C)

HRSD

Chesapeake Pump Station Capacity Improvements (AT-HPP-01C)

PR_AT014303

System: Atlantic
Type: Locality and Private Property

Driver Category: I&I Abatement-IP/RWWMP
Project Phase: Proposed
Regulatory: Integrated Plan-HPP 1

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$935	$0	$0	$0	$0	$52	$187	$696	$0	$0	$0	$0

PROJECT DESCRIPTION

Chesapeake Pump Station Upgrade PS072; Install 1,930 linear feet (LF) of 10-inch discharge force main downstream of Chesapeake Pump Station 067 (114 Mann Drive).

PROJECT JUSTIFICATION

As part of HRSD's Integrated Plan, a program of High Priority RWWMP Projects (HPP) will be constructed through 2030. These projects were selected based on their ability to provide the greatest environmental and human health benefits. Further, this $200+ million investment will significantly reduce sanitary sewer overflows (SSO) volume at the 5-year level of service by 47 percent.

FUNDING TYPE

Funding Type: Cash

CONTACTS

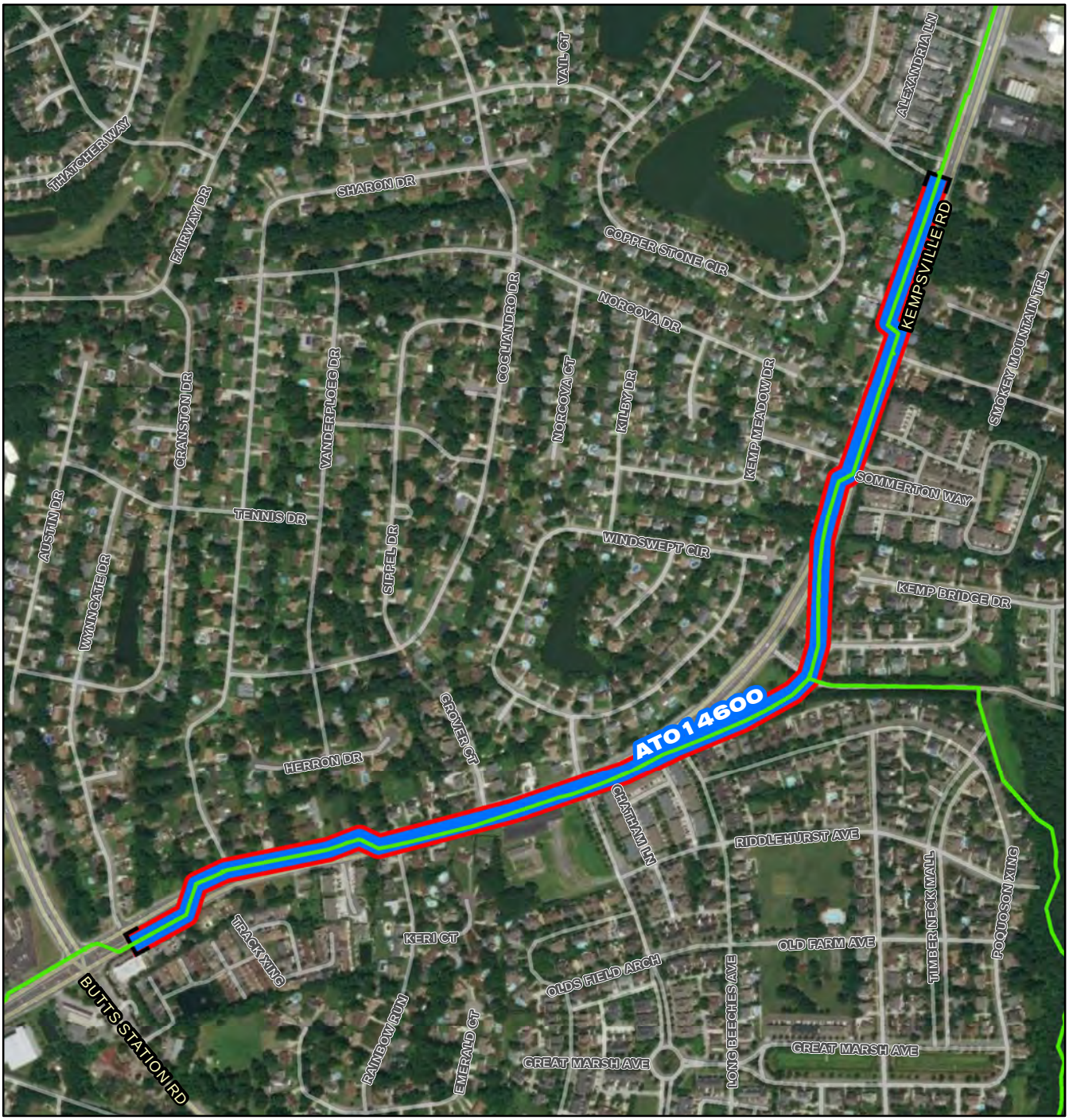
Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Jeff Scarano
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	02/01/2025
PER	08/01/2025
Design Delay	03/01/2026
Design	03/01/2026
Bid Delay	01/01/2027
PreConstruction	01/01/2027
Construction	05/01/2027
Closeout	06/01/2028

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$0
PER	$24,559
Design	$68,407
PreConstruction	$19,176
Construction	$822,680
Closeout	$0
Est. Program Cost	**$934,823**
Contingency Budget	$205,670
Est. Project Costs	**$1,140,493**



ATO 14600

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station 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

0 245 490 980 1,470 1,960 Feet

N W E S

CIP Location

ATO 14600

Kempsville Interceptor Force Main Replacement - Phase I

HRSD

Kempsville Interceptor Force Main Replacement - Phase I

PR_AT014600

System: Atlantic
Type: Pipelines

Driver Category: Risk Mitigation
Project Phase: Proposed
Regulatory: None

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$5,894	$30	$241	$389	$2,770	$2,456	$7	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project will replace 4,300 feet of 24 and 30-inch ductile iron pipe along Kempsville Road between Hunningdon Lakes Boulevard and Greenbriar Parkway.

PROJECT JUSTIFICATION

The interceptor force main (IFM) along Kempsville Road has experienced multiple failures due to internal and external corrosion. This 33,000 foot long IFM was installed between 1972 and 1999 and consists of prestressed concrete cylinder pipe (PCCP) and ductile iron pipe (DIP). Recent breaks near Hunningdon Lakes Boulevard have reconnected to ductile iron pipe that shows significant evidence of internal corrosion, which is why this section of the IFM is being addressed first. Approximately 1,700 feet of this alignment was replaced in 1997 with a VDOT Project and is not included in the replacement work. Recent failures along this corridor have been more than $400,000 each.

FUNDING TYPE

Funding Type: VCWRLF

CONTACTS

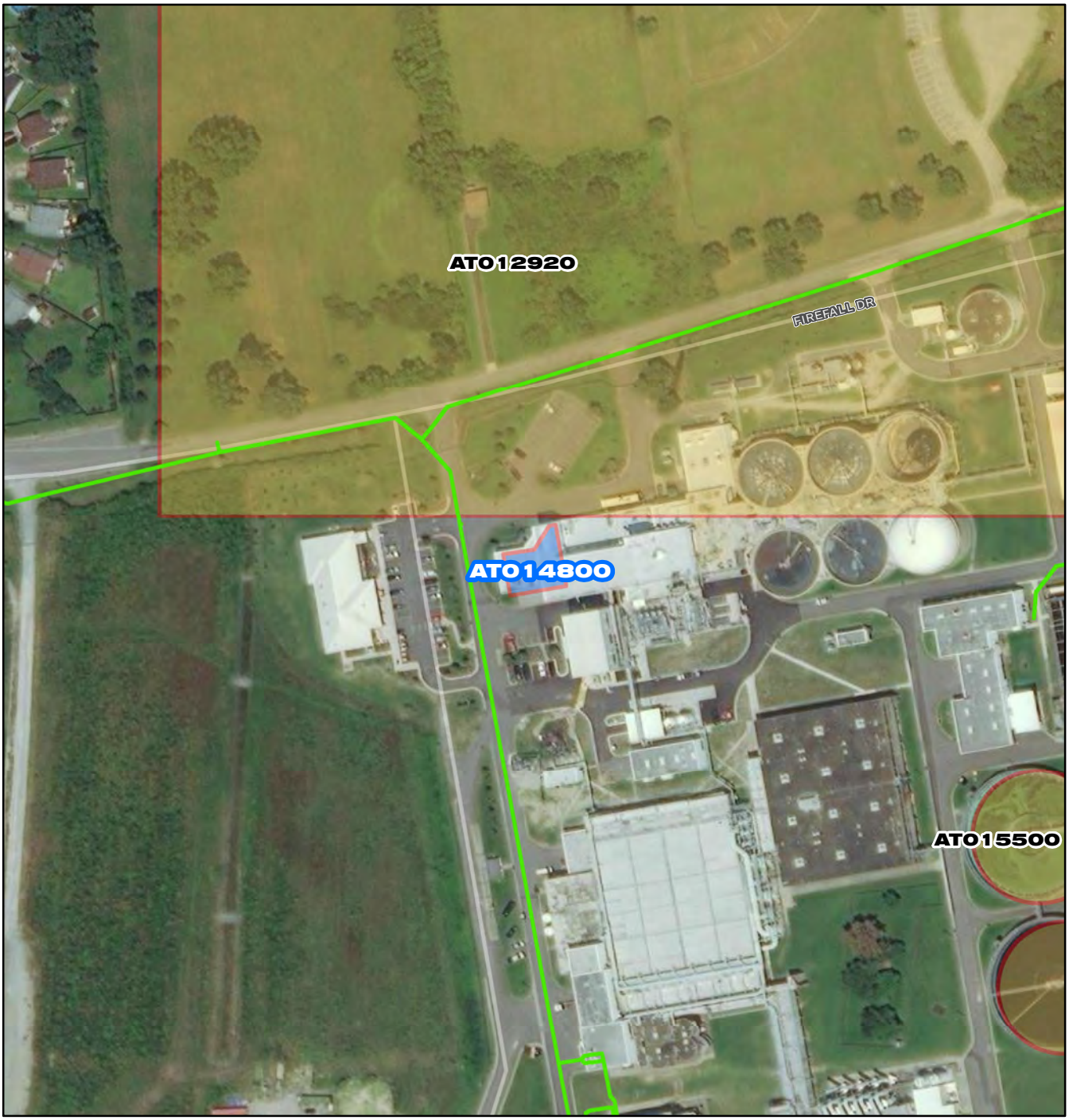
Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Holly Anne Matel
Contacts-Managing Dept: Operations-Interceptors

PROPOSED SCHEDULE START DATE

PrePlanning	09/01/2021
PER	05/16/2022
Design Delay	04/10/2023
Design	04/10/2023
Bid Delay	06/17/2024
PreConstruction	07/01/2024
Construction	10/14/2024
Closeout	03/16/2026

COST ESTIMATE

Cost Estimate Class:	
PrePlanning	$0
PER	$165,240
Design	$495,720
PreConstruction	$11,016
Construction	$5,210,568
Closeout	$11,016
Est. Program Cost	**$5,893,560**
Contingency Budget	$1,101,600
Est. Project Costs	**$6,995,160**



AT014800

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station 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
- HRSD Treatment Plant
- HRSD Pressure Reducing Station
- HRSD Pump Station

0 62.5 125 250 375 500 Feet

AT014800

Atlantic Treatment Plant Electrical Workspace Renovation

HRSD

N
W E
S

CIP Location

Atlantic Treatment Plant Electrical Workspace Renovation

PR_AT014800

System: Atlantic
Type: Facilities, Buildings and Capital Equipment

Driver Category: Aging Infrastructure/Rehabilitation
Project Phase: Proposed
Regulatory: None

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$555	$240	$315	$0	$0	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project will renovate the 1984 Atlantic Treatment Plant Administration building.

PROJECT JUSTIFICATION

The existing Electrical and Instrumentation (E&I) office space is currently located in a process area (Headworks Building pipe gallery), which is inadequate for office space. The space lacks a locker room, lunch room, and restroom facilities and will not accommodate renovations required to ensure consistency with similar office upgrade projects. The renovations will provide a shop area, locker room, men's restroom, women's restroom, lunch/meeting room, and offices. These renovations will provide an acceptable work space for five (5) permanent and two (2) transient E&I staff.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Operations-EEM
Contacts-Dept Contacts: Tom Morris
Contacts-Managing Dept: Operations-Support Systems

PROPOSED SCHEDULE START DATE

PrePlanning	
PER	
Design Delay	
Design	
Bid Delay	
PreConstruction	
Construction	04/01/2022
Closeout	01/01/2023

COST ESTIMATE

Cost Estimate Class:	
PrePlanning	$0
PER	$0
Design	$0
PreConstruction	$0
Construction	$528,066
Closeout	$27,000
Est. Program Cost	**$555,066**
Contingency Budget	$105,840
Est. Project Costs	**$660,906**

ATO14900

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station 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

N
W E
S

CIP Location

ATO14900

Atlantic Treatment Plant Gravity Belt Thickener Expansion

HRSD

Atlantic Treatment Plant Gravity Belt Thickener Expansion

PR_AT014900

System: Atlantic
Type: Biosolids

Driver Category: Capacity Improvements
Project Phase: Pre Planning
Regulatory: None

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$5,495	$415	$3,102	$1,963	$14	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project will include the addition of a fourth gravity belt thickener (GBT) at the Atlantic Treatment Plant (ATP). The installation shall include all associated pumps, piping, platforms, and ancillary equipment. The project shall also include all necessary electrical and instrumentation equipment to operate the GBT.

PROJECT JUSTIFICATION

The Chesapeake-Elizabeth Treatment Plant (CETP) was shut down in CY 2021 and influent flows were redirected to the ATP. At peak solids loadings with CETP flow, ATP requires four GBTs to maintain GBT redundancy.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Operations-Treatment
Contacts-Dept Contacts: Holly Anne Matel
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	
PER	07/01/2021
Design Delay	07/01/2021
Design	07/01/2021
Bid Delay	09/13/2022
PreConstruction	10/10/2022
Construction	01/01/2023
Closeout	11/01/2023

COST ESTIMATE

Cost Estimate Class:	**Class 4**
PrePlanning	$0
PER	$0
Design	$594,000
PreConstruction	$21,400
Construction	$4,836,400
Closeout	$42,800
Est. Program Cost	**$5,494,600**
Contingency Budget	$1,214,450
Est. Project Costs	**$6,709,050**

AT015000

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station 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

AT015000

Atlantic Treatment Plant Polymer System Replacement

HRSD

N
W E
S

CIP Location

Atlantic Treatment Plant Polymer System Replacement

PR_AT015000

System: Atlantic
Type: Biosolids

Driver Category: Performance Upgrades
Project Phase: Pre Planning
Regulatory: None

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$2,482	$193	$1,392	$890	$6	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project will upgrade the substandard polymer systems for thickening, pre-dewatering and final dewatering at the Atlantic Treatment Plant (ATP).

PROJECT JUSTIFICATION

The polymer systems at the ATP do not meet expected performance and are often the root-cause of failures in the pre-dewatering system. Upgrading the polymer system at pre-dewatering will minimize such failures, while upgrades at thickening and final dewatering will allow for standardization, operating cost minimization, additional automation, and full leveraging of thermally hydrolyzed solids by providing opportunity for drier cake.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Operations-Treatment
Contacts-Dept Contacts: Holly Anne Matel
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	
PER	07/01/2021
Design Delay	07/01/2021
Design	07/01/2021
Bid Delay	09/13/2022
PreConstruction	10/11/2022
Construction	01/01/2023
Closeout	11/02/2023

COST ESTIMATE

Cost Estimate Class:	**Class 4**
PrePlanning	$0
PER	$0
Design	$260,860
PreConstruction	$9,700
Construction	$2,192,200
Closeout	$19,400
Est. Program Cost	**$2,482,160**
Contingency Budget	$550,500
Est. Project Costs	**$3,032,660**

AT015100

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station 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

0 100 200 400 600 800 Feet

AT015100

Atlantic Treatment Plant Solids Storage Pad Improvements

HRSD

N
W E
S

CIP Location

Atlantic Treatment Plant Solids Storage Pad Improvements

PR_AT015100

System: Atlantic
Type: Biosolids

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$875	$362	$511	$2	$0	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project will extend the Atlantic Treatment Plant's biosolids storage walls to 7 feet on the south pad and replace the deteriorating walls on the north pad, while increasing the height to 7 feet. This project will also repair and provide corrosion protection for structural columns for the cover to the two pads.

PROJECT JUSTIFICATION

The Atlantic Treatment Plant (ATP) currently has a biosolids storage capacity of approximately 126,050 square feet, with a 6 foot depth. With the closure of the Chesapeake Elizabeth Treatment Plant (CETP), the ATP flows will increase to 54 MGD, also increasing the solids produced to 39,420 cy/year of solids (which includes the use of the Thermal Hydrolysis Process). The increase in wall height from 6 to 7 feet will allow for at least 10 months of storage at the treatment plant. Also, the wall conditions on the north pad require replacement, even without the need to increase the wall height, and there is noticeable corrosion on most of the interior structural columns on both pads.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

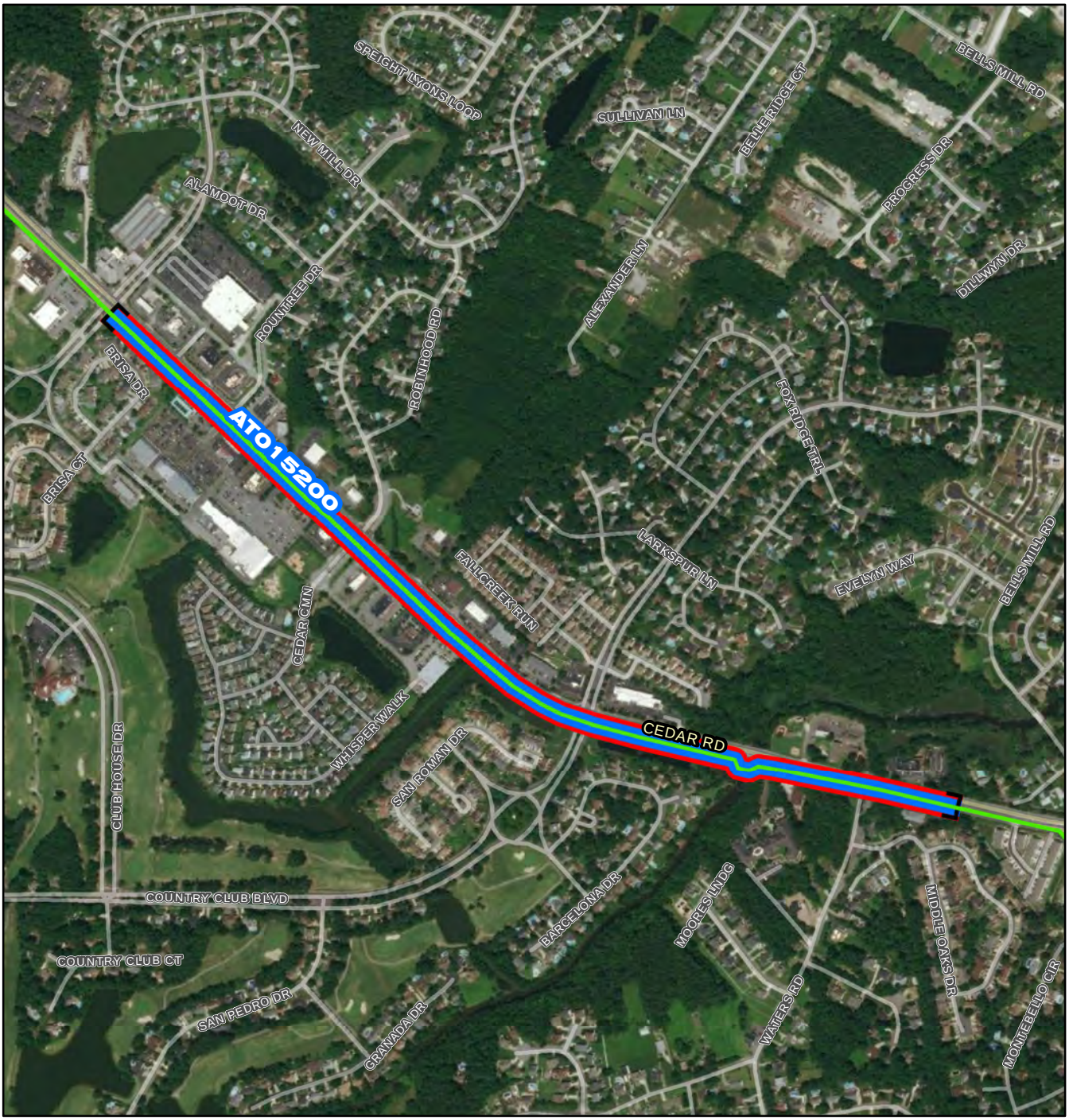
Contacts-Requesting Dept: Operations-Treatment
Contacts-Dept Contacts: Holly Anne Matel
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	
PER	05/03/2021
Design Delay	05/03/2021
Design	05/03/2021
Bid Delay	03/01/2022
PreConstruction	03/01/2022
Construction	05/02/2022
Closeout	10/01/2022

COST ESTIMATE

Cost Estimate Class:	
PrePlanning	$0
PER	$0
Design	$25,710
PreConstruction	$0
Construction	$840,840
Closeout	$8,000
Est. Program Cost	**$874,550**
Contingency Budget	$126,000
Est. Project Costs	**$1,000,550**



AT01 5200

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station 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

0 295 590 1,180 1,770 2,360 Feet

N W E S

CIP Location

AT01 5200

Cedar Road Interceptor Force Main Replacement Phase I

HRSD

Cedar Road Interceptor Force Main Replacement Phase I — PR_AT015200

System: Atlantic
Type: Pipelines

Driver Category: Aging Infrastructure/Rehabilitation
Project Phase: Proposed
Regulatory: None

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$6,084	$36	$235	$352	$2,912	$2,520	$29	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project will replace and upsize 5,800 feet of 16-inch ductile iron pipe along Cedar Road from valve AT-1159R-1 at Las Gaviotas Boulevard to valve AT-1159L-1 near Charleston Street. The existing pipeline will up upsized to 24-inch pipe.

PROJECT JUSTIFICATION

The interceptor force main (IFM) along Cedar Road was installed in 1983 and has experienced multiple failures due to internal and external corrosion. Several of these failures showed signs of graphitization of the pipe wall that have raised concerns over the integrity of this section of pipeline. The repairs performed on this pipeline have been full-circle clamps, thus only addressing the immediate leak and not the larger problem of pipeline integrity. The remaining pipe wall thickness on most of this pipe is not precisely known but is assumed to be very similar to that of the pieces that failed in 2019/2020.
More than half of this pipeline is "High" risk and nearly a third is "Extreme" risk, as described in the HRSD Risk Guidelines (February 2018). Thus, urgent action is needed to minimize the risk of this pipeline failing again. Proposed development in this area of Chesapeake necessitate the upsize from 16-inch to 24-inch pipe. In the future, the remainder of this pipeline to Battlefield Boulevard will also be upsized to 24-inch.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Holly Anne Matel
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	09/01/2021
PER	05/16/2022
Design Delay	04/10/2023
Design	04/10/2023
Bid Delay	06/17/2024
PreConstruction	07/01/2024
Construction	10/14/2024
Closeout	03/16/2026

COST ESTIMATE

Cost Estimate Class:	
PrePlanning	$5,400
PER	$169,560
Design	$448,200
PreConstruction	$92,880
Construction	$5,324,400
Closeout	$43,200
Est. Program Cost	**$6,083,640**
Contingency Budget	$1,220,400
Est. Project Costs	**$7,304,040**

High Priority Projects Round 2 Project 2

PR_AT015300

System: Atlantic
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	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$4,060	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,610	$1,450

PROJECT DESCRIPTION

High Priority Project (HPP) Round 2 Project 2 consists of the following Regional Wet Weather Management Plan (RWWMP) Project ID and general description:
AT-RWWMP-06 Birdneck-General Booth Boulevard Force 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). The initial HPPs (Round 1) were identified in the RWWMP, submitted to EPA in September of 2017, and are scheduled to be constructed between plan approval and 2030. Further review of RWWMP projects was conducted in 2019 to find beneficial solutions to implement as a second set of HPPs (identified as Round 2). A prioritization methodology was used to identify improvements to minimize sanitary sewer overflow (SSO) volume.
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

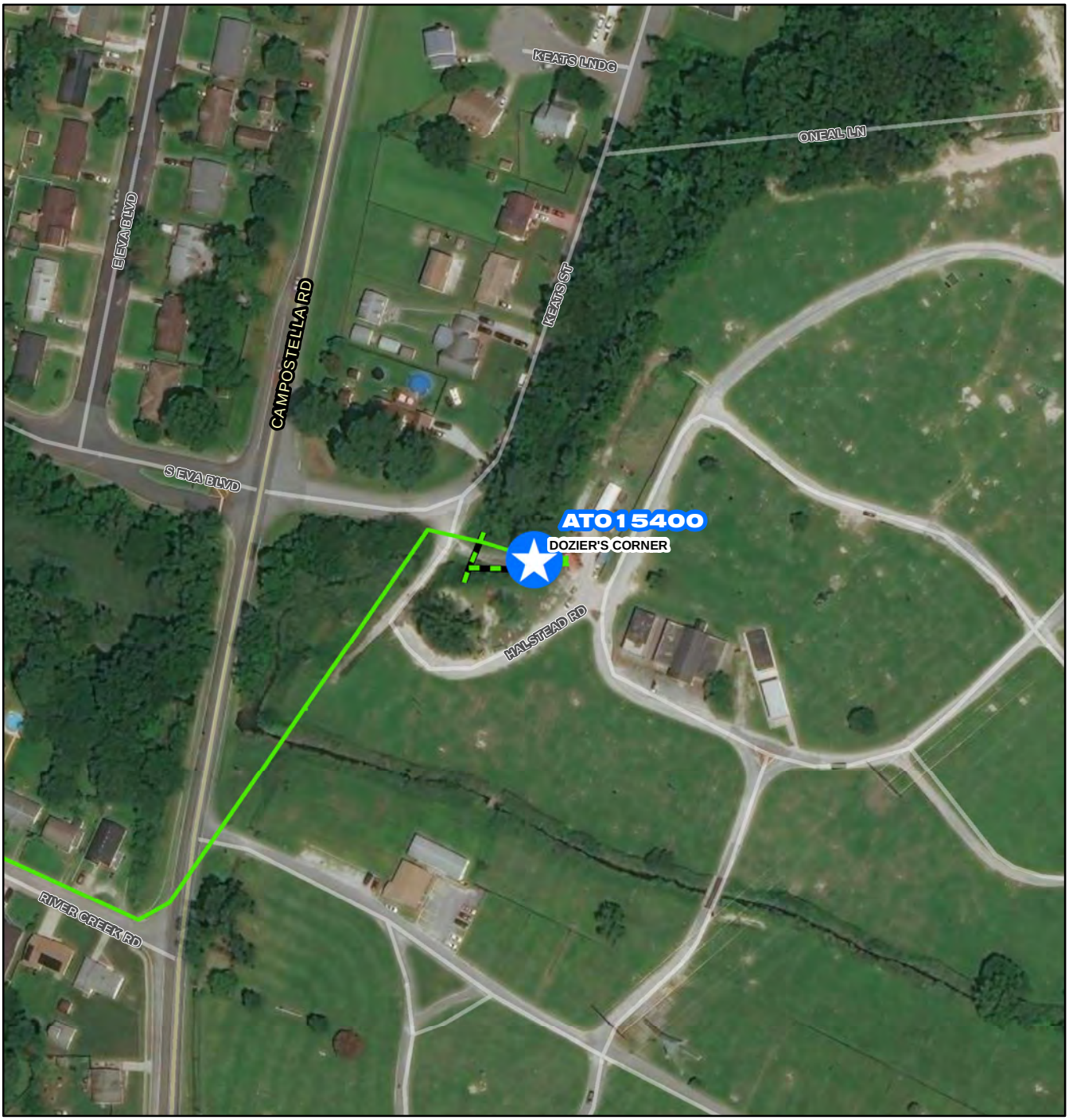
PROPOSED SCHEDULE START DATE

PrePlanning	07/01/2030
PER	08/01/2030
Design Delay	10/01/2030
Design	06/01/2031
Bid Delay	09/01/2031
PreConstruction	05/01/2032
Construction	07/01/2032
Closeout	04/01/2033

COST ESTIMATE

Cost Estimate Class:

PrePlanning	$579,960
PER	$1,449,900
Design	$1,739,880
PreConstruction	$289,980
Construction	$24,648,300
Closeout	$289,980
Est. Program Cost	**$28,998,000**
Contingency Budget	$0
Est. Project Costs	**$28,998,000**



AT01 5400

Project Interceptor Line
Project Interceptor Point
Project Pump Station 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

N
W E
S

CIP Location

AT01 5400

Doziers Corner Pump Station Replacement

HRSD

Doziers Corner Pump Station Replacement

PR_AT015400

System: Atlantic
Type: Pump Stations

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$7,871	$95	$745	$2,874	$3,818	$337	$2	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

The project is to install dry pit submersible pumps and raise, or otherwise protect, electrical equipment at both Dozier's Corner. In addition, all electrical assets such as electrical control panels, generator, disconnects, panelboards, etc. shall be located above the 100 year flood/wave action. Conduits located below the 100 year flood/wave action shall be adequately sealed per National Electrical Code (NEC) requirements for flood prone locations.

PROJECT JUSTIFICATION

This pump station may need to be relocated due to the flood plain, the ditches on two sides of the property, as well as, the cemetery next to the pump station.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Phil Hubbard
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	01/03/2022
PER	04/01/2022
Design Delay	10/01/2022
Design	10/01/2022
Bid Delay	07/01/2023
PreConstruction	07/02/2023
Construction	10/02/2023
Closeout	08/02/2025

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$0
PER	$190,800
Design	$650,000
PreConstruction	$10,000
Construction	$7,000,000
Closeout	$20,000
Est. Program Cost	**$7,870,800**
Contingency Budget	$180,000
Est. Project Costs	**$8,050,800**

AT015500

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station 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 75 150 300 450 600 Feet

AT015500

Atlantic Treatment Plant Secondary Clarifier Effluent Weir Replacement and Enhancements

HRSD

N
W E
S

CIP Location

Virginia Beach

ATP Secondary Clarifier Effluent Weir Replacement and Enhancements

PR_AT015500

System: Atlantic
Type: Wastewater Treatment

Driver Category: Aging Infrastructure/Rehabilitation
Project Phase: Proposed
Regulatory: None

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$1,648	$0	$824	$824	$0	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project will replace secondary clarifier effluent weirs, launders and add new covers to the weirs for Secondary Clarifiers 1 through 4.

PROJECT JUSTIFICATION

The effluent weirs are failing in all four of the secondary clarifiers due to age and sun exposure. This project will replace all weirs, to include the launders, and will include the purchase and installation of covers to prevent UV degradation on the fiberglass weirs.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Operations
Contacts-Dept Contacts: Christel Dyer
Contacts-Managing Dept: Operations-Treatment

PROPOSED SCHEDULE START DATE

PrePlanning
PER
Design Delay
Design
Bid Delay
PreConstruction
Construction 07/01/2022
Closeout

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$0
PER	$0
Design	$0
PreConstruction	$0
Construction	$1,648,000
Closeout	$0
Est. Program Cost	**$1,648,000**
Contingency Budget	$164,800
Est. Project Costs	**$1,812,800**

AT015600

Project Interceptor Line
Project Interceptor Point
Project Pump Station 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

AT015600

Atlantic Treatment Plant Solids Handling Improvements and Odor Control Upgrades Phase I

HRSD

N
W E
S

CIP Location

ATP Solids Handling Improvements and Odor Control Upgrades Phase I

PR_AT015600

System: Atlantic
Type: Wastewater Treatment

Driver Category: Performance Upgrades
Project Phase: Proposed
Regulatory: None

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$26,025	$0	$2,429	$8,430	$14,000	$1,167	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

The purpose of this project is to replace two of the aging and inefficient odor control units with one larger unit, that can also handle the additional capacity necessary for current and future upgrades. This Phase I project will also provide for two gravity thickeners for primary solids thickening. Two thickeners would be constructed in the location of the existing HPO tanks. The HPO tanks would be demolished. The thickeners would be covered and odorous air conveyed to the new odor control system, which would need to be installed prior to or concurrently with the gravity thickeners.

PROJECT JUSTIFICATION

Typically when rectangular clarifiers are constructed, gravity thickeners are include in the downstream process. With the addition of the Chesapeake-Elizabeth Treatment Plant flows, the Atlantic Treatment Plant is unable to appropriately thicken solids while also pumping continuously from the primaries. The addition of gravity thickeners allows for unrestricted pumping of primary solids from the rectangular clarifiers, which improves the reliability of the chain and flight mechanisms by avoiding thick blankets. It also reduces the hydraulic loading on the screening and pre-dewatering processes at CAMBI, and increases the available storage volume in the Solids Holding Tanks, therefore providing more operational flexibility. The Odor Control A and C systems are outdated and unable to provide capacity for solids handling upgrades at the Atlantic Plant. Installing one new, larger unit will allow for proper capacity and improve overall efficiency.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Operations-Treatment
Contacts-Dept Contacts: Christel Dyer
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	10/01/2022
PER	10/01/2022
Design Delay	04/01/2023
Design	04/10/2023
Bid Delay	11/01/2023
PreConstruction	11/01/2023
Construction	02/01/2024
Closeout	08/01/2025

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$0
PER	$500,000
Design	$4,500,000
PreConstruction	$25,000
Construction	$21,000,000
Closeout	$0
Est. Program Cost	**$26,025,000**
Contingency Budget	$5,200,000
Est. Project Costs	**$31,225,000**

AT015700

- Project Interceptor Line
- Project Interceptor Point
- Project Pump Station 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

N
W E
S

CIP Location

AT015700

Atlantic Plant Solids Handling Improvements Waste Gas Flare Replacement

HRSD

Atlantic Plant Solids Handling Improvements Waste Gas Flare Replacement

PR_AT015700

System: Atlantic
Type: Wastewater Treatment

Driver Category: Performance Upgrades
Project Phase: Proposed
Regulatory: None

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
$6,725	$0	$414	$1,977	$4,000	$333	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

HRSD proposes to replace the existing and inefficient open flares with an enclosed flare system, which has no visible flame.

PROJECT JUSTIFICATION

The replacement of the waste gas flare system would address the public concerns with the flames, reduces the risks of off-site odors associated with the flares, and the new flares are more efficient in combustion of green house gases.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Operations-Treatment
Contacts-Dept Contacts: Christel Dyer
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	10/01/2022
PER	10/01/2022
Design Delay	04/01/2023
Design	04/01/2023
Bid Delay	11/01/2023
PreConstruction	11/01/2023
Construction	02/01/2024
Closeout	08/01/2025

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$0
PER	$200,000
Design	$500,000
PreConstruction	$25,000
Construction	$6,000,000
Closeout	$0
Est. Program Cost	**$6,725,000**
Contingency Budget	$1,340,000
Est. Project Costs	**$8,065,000**