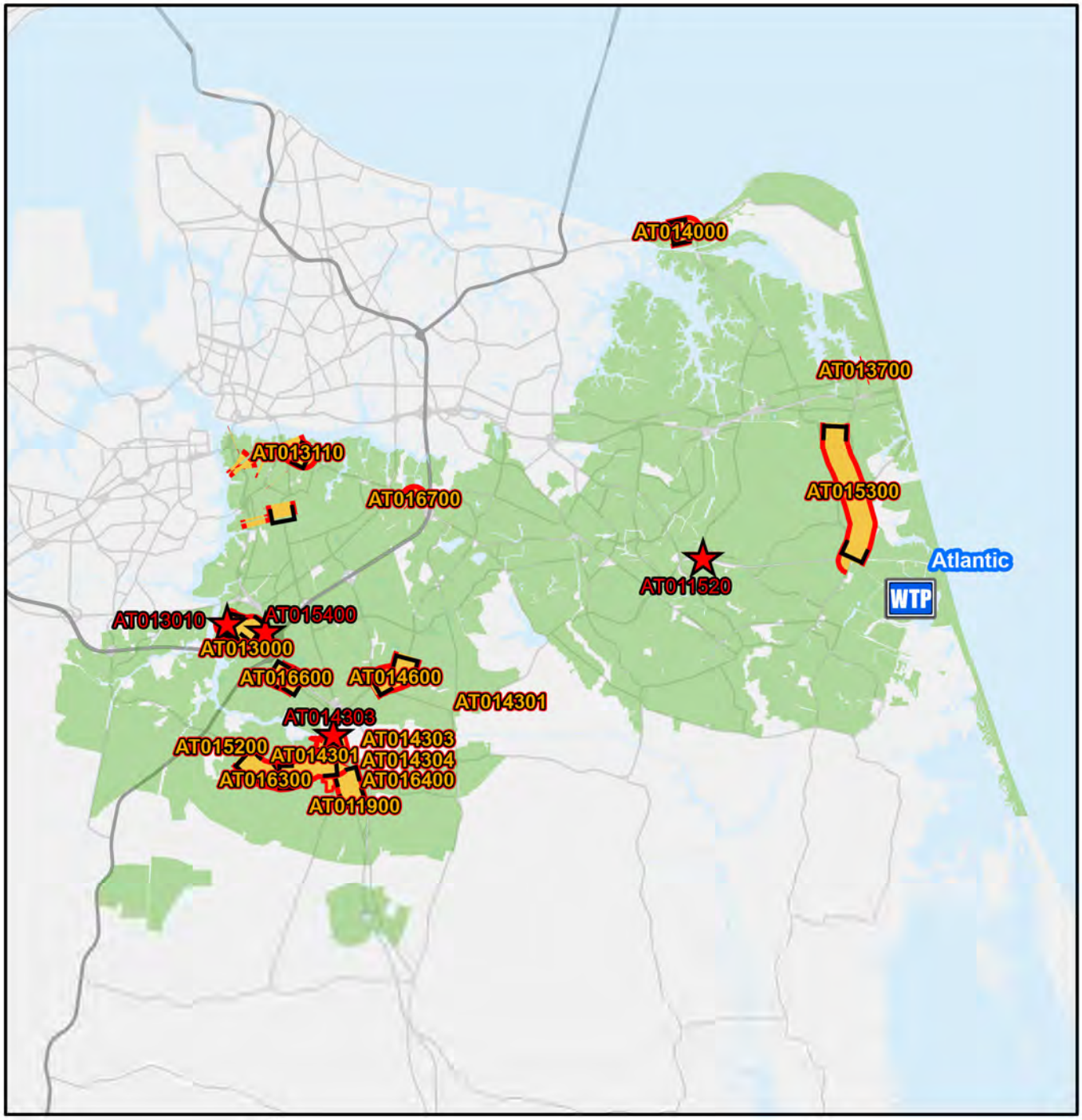
Atlantic Treatment Plant



Legend

- WTP — Atlantic Treatment PlantPoint TP
- 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 5,000 10,000 20,000 30,000 40,000 Feet

Atlantic Treatment Plant Service Area CIP Projects

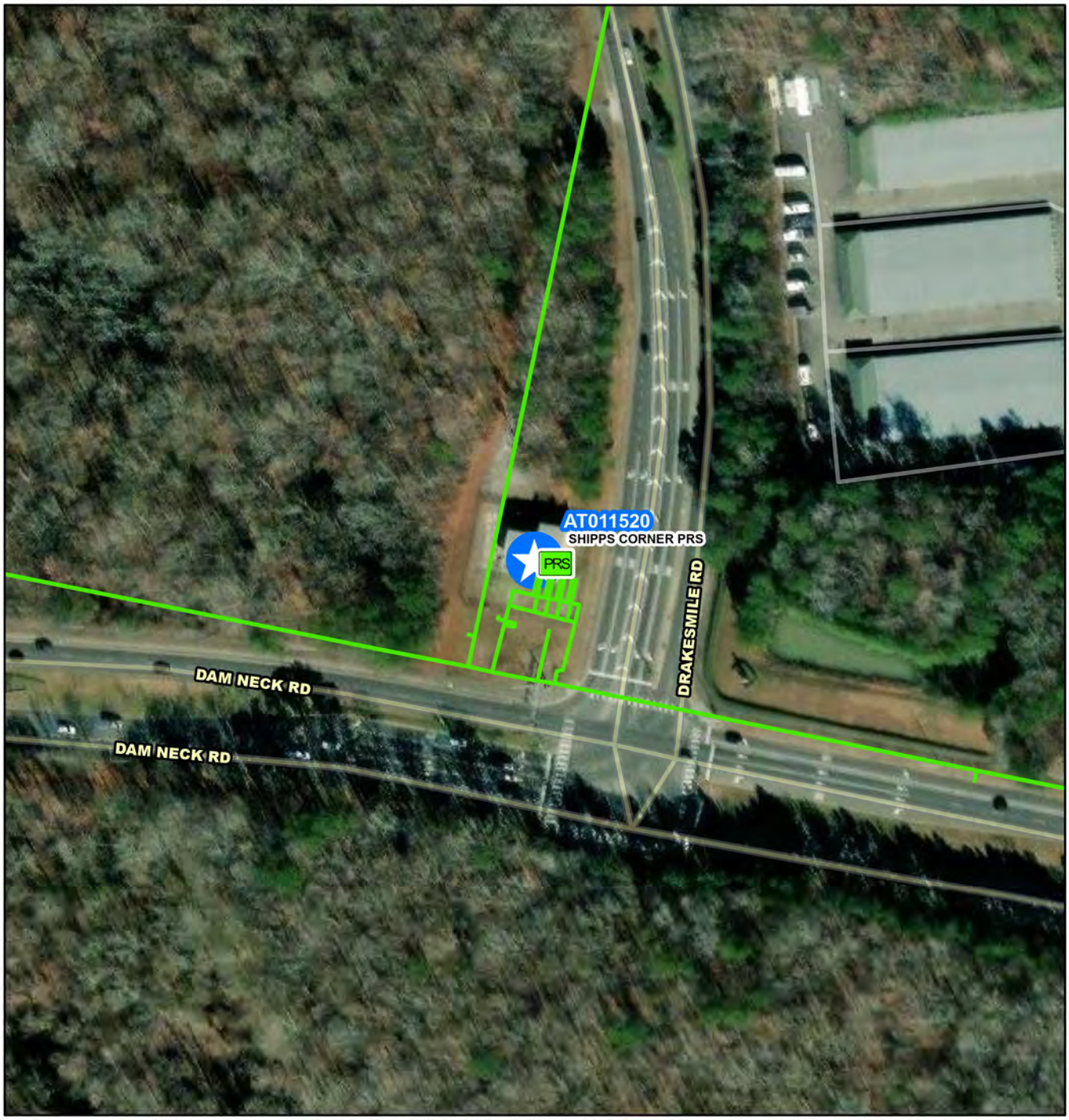
Treatment Plant Projects

AT012920	AT016100
AT015500	AT016500
AT015800	GN017900
AT015900	
AT016000	

N

CIP Location

Service Area



AT011520

- 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 45 90 180 270 360 Feet

AT011520

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: Construction
Regulatory: Rehab Plan Phase Two

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
$1,471	$1,252	$219	$0	$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

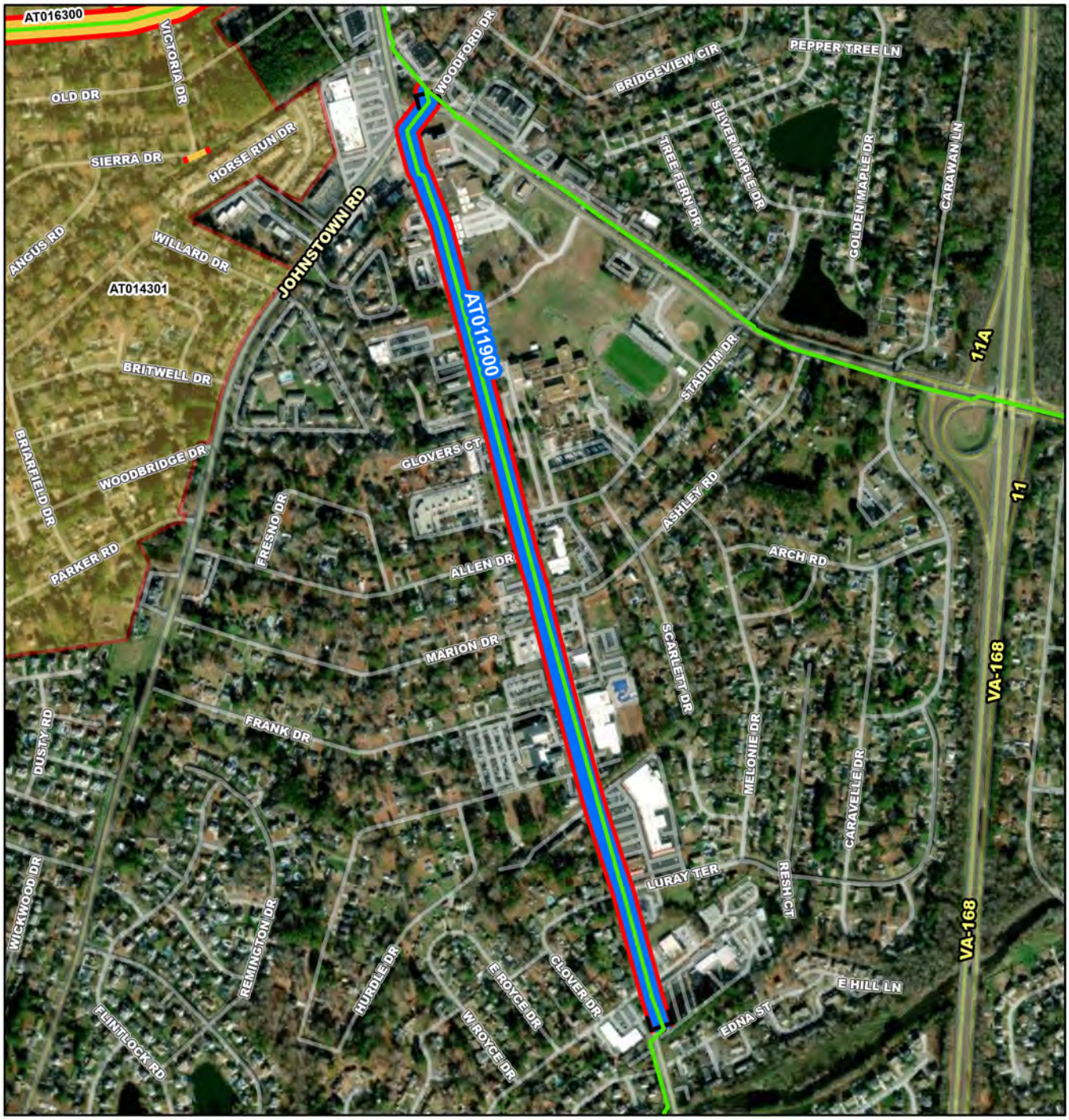
Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Virginia Opp
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	01/01/2020
PER	01/29/2020
Design Delay	05/28/2020
Design	01/01/2020
Bid Delay	01/02/2020
PreConstruction	01/03/2020
Construction	09/01/2023
Closeout	08/01/2024

COST ESTIMATE

Cost Estimate Class:	**Class 1**
PrePlanning	$0
PER	$30,614
Design	$58,831
PreConstruction	$14,421
Construction	$1,366,772
Closeout	$0
Est. Program Cost	**$1,470,638**
Contingency Budget	$459,654
Est. Project Costs	**$1,930,292**



AT011900

- 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

0 300 600 1,200 1,800 2,400 Feet

N
W E
S

CIP Location

AT011900

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	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
$13,230	$692	$5,550	$6,930	$57	$0	$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: Nick Taschner
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	03/01/2021
PER	06/23/2021
Design Delay	01/14/2022
Design	01/14/2022
Bid Delay	05/01/2024
PreConstruction	07/01/2024
Construction	11/01/2024
Closeout	05/01/2026

COST ESTIMATE

Cost Estimate Class:	**Class 4**
PrePlanning	$0
PER	$198,740
Design	$493,499
PreConstruction	$15,000
Construction	$12,453,886
Closeout	$68,700
Est. Program Cost	**$13,229,825**
Contingency Budget	$2,260,000
Est. Project Costs	**$15,489,825**

AT012920

- 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

0 255 510 1,020 1,530 2,040 Feet

N W E S

CIP Location

AT012920

Atlantic Treatment Plant Access Road Extension

HRSD

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	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
$12,275	$923	$1,300	$430	$5,865	$3,730	$28	$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 HRSDs public image. A new access road would also facilitate construction and operation of an expansion to the thermal hydrolysis process.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

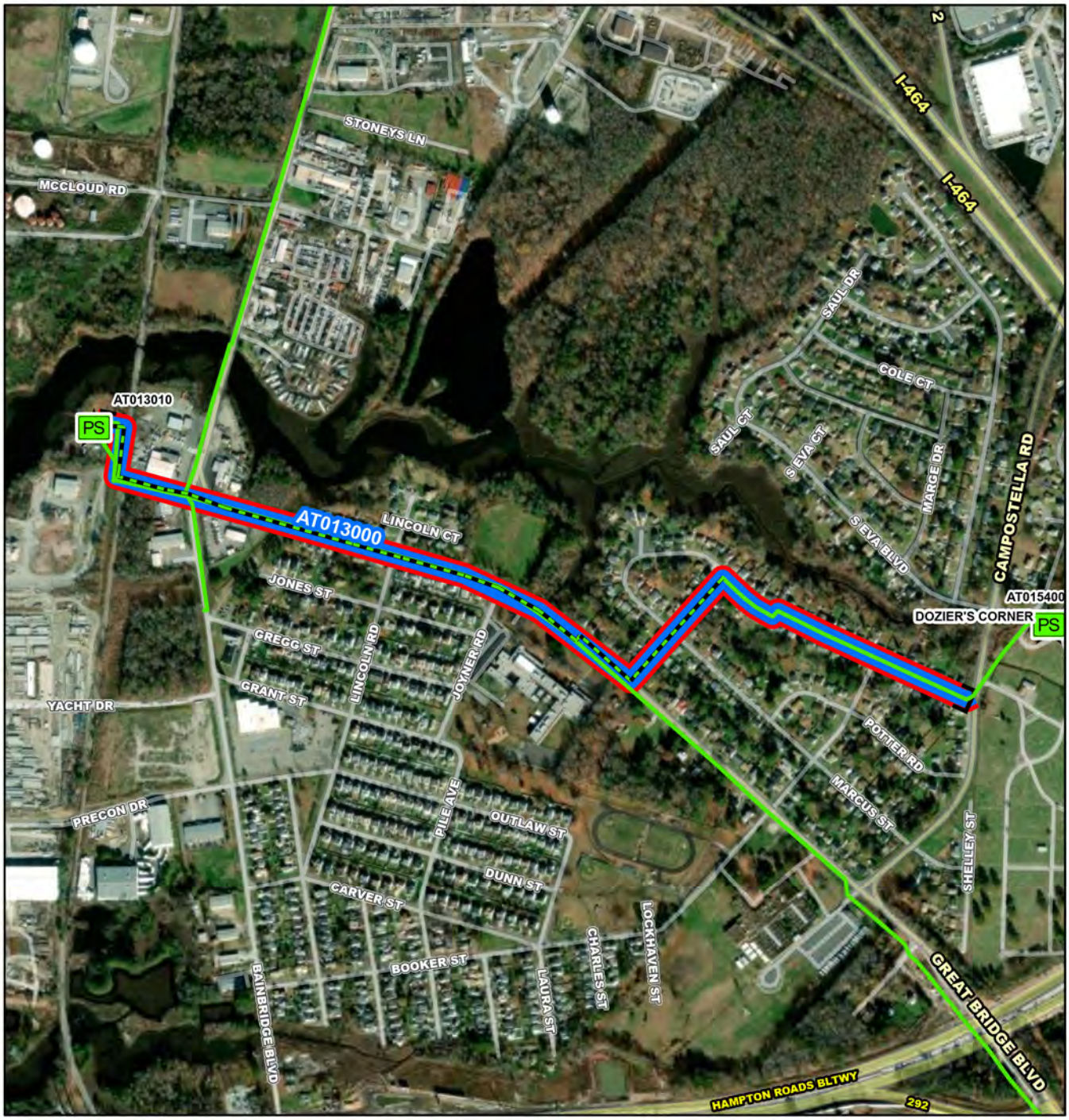
Contacts-Requesting Dept: Operations-Treatment
Contacts-Dept Contacts: Rebecca Currall
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	07/02/2018
PER	08/01/2018
Design Delay	02/01/2019
Design	11/01/2022
Bid Delay	10/01/2025
PreConstruction	04/01/2026
Construction	08/01/2026
Closeout	02/01/2028

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$0
PER	$202,014
Design	$2,345,589
PreConstruction	$140,000
Construction	$9,540,000
Closeout	$47,700
Est. Program Cost	**$12,275,303**
Contingency Budget	$2,415,000
Est. Project Costs	**$14,690,303**



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

0 275 550 1,100 1,650 2,200 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: Construction
Regulatory: Rehab Plan Phase Two

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
$9,798	$6,240	$3,525	$33	$0	$0	$0	$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. Approximately, 2,200 LF of force main from Doziers 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

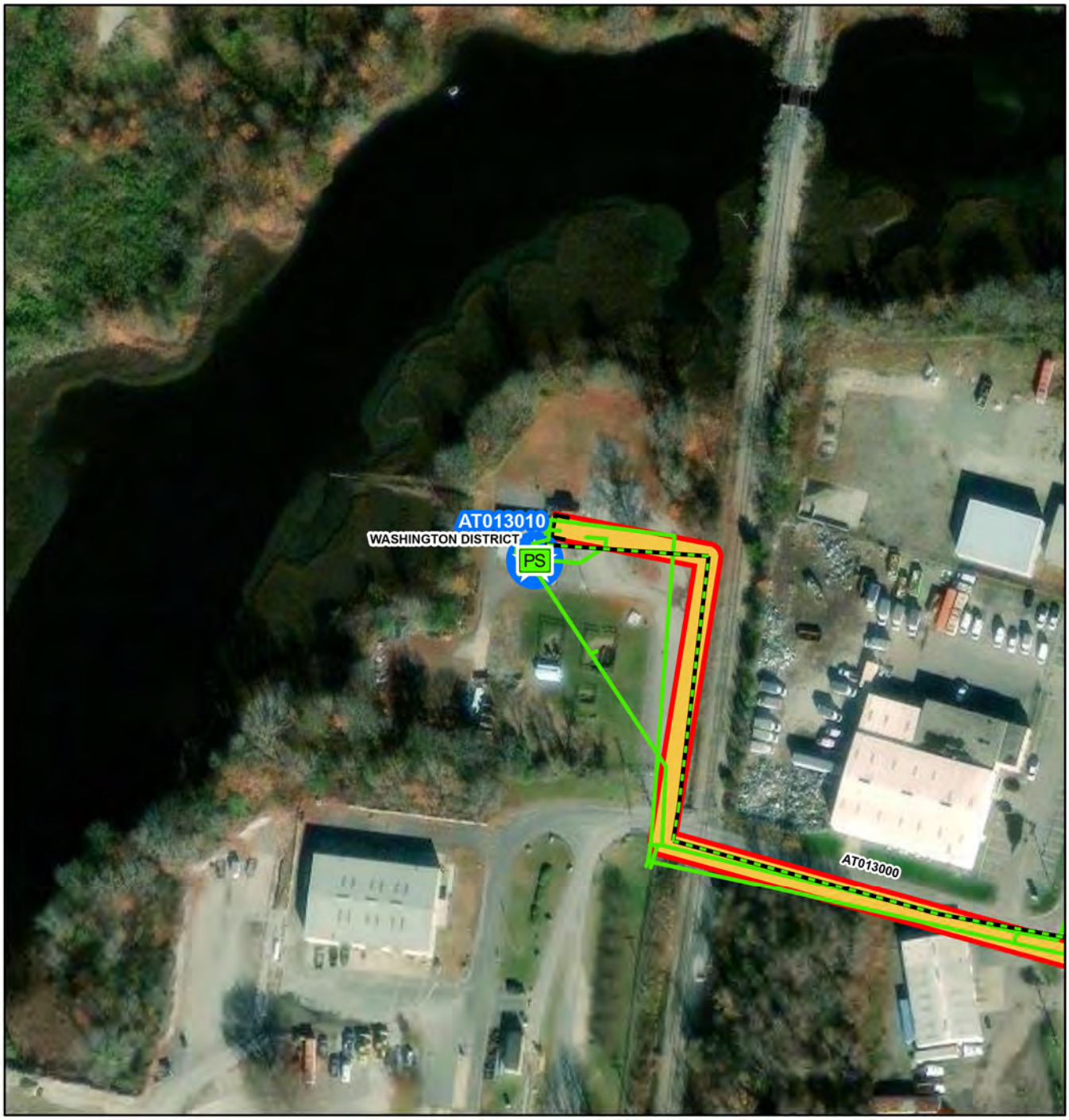
Contacts-Requesting Dept: Compliance Assurance
Contacts-Dept Contacts: Phil Hubbard
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	10/25/2019
PER	11/27/2018
Design Delay	
Design	07/30/2019
Bid Delay	10/06/2021
PreConstruction	06/24/2022
Construction	02/13/2023
Closeout	04/01/2025

COST ESTIMATE

Cost Estimate Class:	**Class 1**
PrePlanning	$0
PER	$94,850
Design	$480,386
PreConstruction	$0
Construction	$9,173,032
Closeout	$50,000
Est. Program Cost	**$9,798,268**
Contingency Budget	$1,505,800
Est. Project Costs	**$11,304,068**



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 45 90 180 270 360 Feet

N
W E
S

CIP Location

AT013010

Washington District Pump Station Replacement

HRSD

Washington District Pump Station Replacement

PR_AT013010

System: Atlantic
Type: Pipelines

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
$18,267	$1,247	$5,076	$5,076	$5,076	$1,746	$46	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project will rehabilitate the Washington District Pump Station (PS) in order to meet the 100 year flood plain and will need to raise the finished floor in order to meet this until 2070. The existing building will be removed and install water tight hatches over the dry pit submersible pumps. The intermediate wall between the existing dry well and wet well cannot be removed due to the wall being a bearing wall for the PS. A separate control building will be constructed to meet the flood plain.

PROJECT JUSTIFICATION

This pump station is part of the Environmental Protection Agency (EPA) Rehabilitation Action Plan Phase II and is due May 5, 2027.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

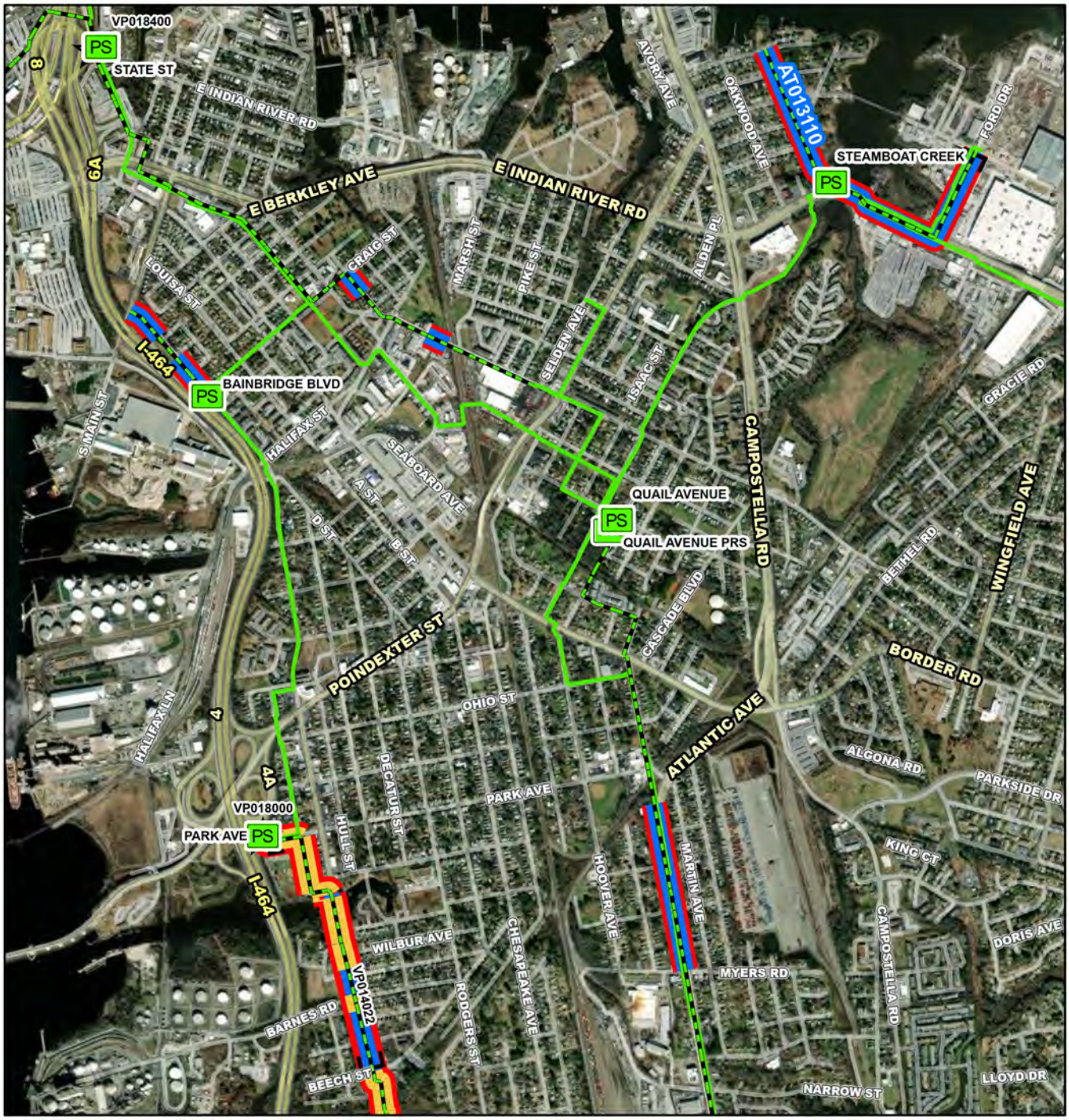
Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Phil Hubbard
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	
PER	08/02/2021
Design Delay	03/04/2022
Design	03/04/2022
Bid Delay	03/04/2024
PreConstruction	04/26/2024
Construction	06/28/2024
Closeout	12/01/2027

COST ESTIMATE

Cost Estimate Class:	**Class 3**
PrePlanning	$0
PER	$188,583
Design	$632,471
PreConstruction	$3,000
Construction	$17,343,000
Closeout	$100,000
Est. Program Cost	**$18,267,054**
Contingency Budget	$1,255,300
Est. Project Costs	**$19,522,354**



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

0 500 1,000 2,000 3,000 4,000 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: Design
Regulatory: Rehab Plan Phase Two

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
$7,294	$787	$4,593	$1,914	$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: Revenue Bond

CONTACTS

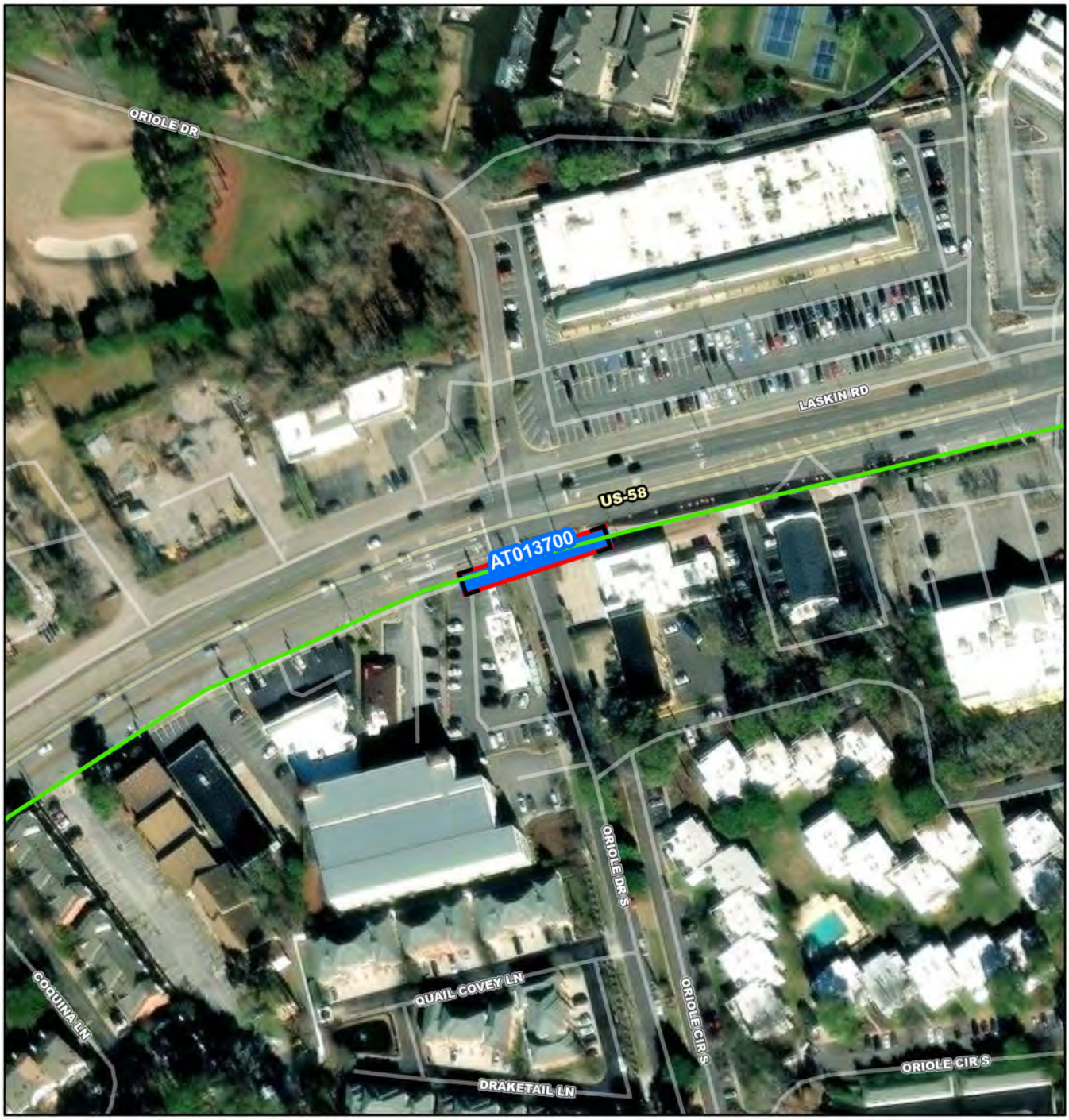
Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Nick Taschner
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	02/03/2020
PER	03/25/2021
Design Delay	07/29/2021
Design	07/30/2021
Bid Delay	04/01/2024
PreConstruction	05/31/2024
Construction	07/01/2024
Closeout	12/12/2025

COST ESTIMATE

Cost Estimate Class:	**Class 3**
PrePlanning	$0
PER	$185,360
Design	$582,730
PreConstruction	$19,270
Construction	$6,507,000
Closeout	$0
Est. Program Cost	**$7,294,360**
Contingency Budget	$738,000
Est. Project Costs	**$8,032,360**



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 55 110 220 330 440 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: Design
Regulatory: None

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
$422	$193	$0	$172	$57	$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 (RCP) that has known repairs. The VDOT extent of relocation ends just west of S Oriole Drive in a section of force main (FM) 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 to Fremac Drive west of the bridge across the creek. There will be four connections which will need to be accomplished. The first is at Oriole Drive, the second will be at the existing 24-inch pipe near the City of Virginia Beach Pump Station known as Laskin Road. The proposed 30-inch Ductile Iron (DI) FM has been stubbed out on both sides of the existing 24-inch RCP. The pump station (PS) at Laskin Road will also need to be connected. The last connection will be along Fremac Drive to connect the 30-inch DI pipe to the 42-inch prestressed concrete cylinder pipe (PCCP). The contractor Allan Meyers has contracted with Bridgeman Civil to accomplish the four connections. These connects will be accomplished in 2023. Extending traffic relocation will need to be accomplished in order to complete the connections.

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	07/01/2003
PER	08/26/2003
Design Delay	01/01/2004
Design	01/01/2004
Bid Delay	11/01/2017
PreConstruction	11/01/2017
Construction	10/06/2021
Closeout	10/31/2025

COST ESTIMATE

Cost Estimate Class:	**Class 2**
PrePlanning	$0
PER	$0
Design	$28,149
PreConstruction	$0
Construction	$165,000
Closeout	$228,960
Est. Program Cost	**$422,109**
Contingency Budget	$50,000
Est. Project Costs	**$472,109**

AT014000

- 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

0 180 360 720 1,080 1,440 Feet

N W E S

CIP Location

AT014000

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	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
$2,540	$355	$362	$1,818	$4	$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

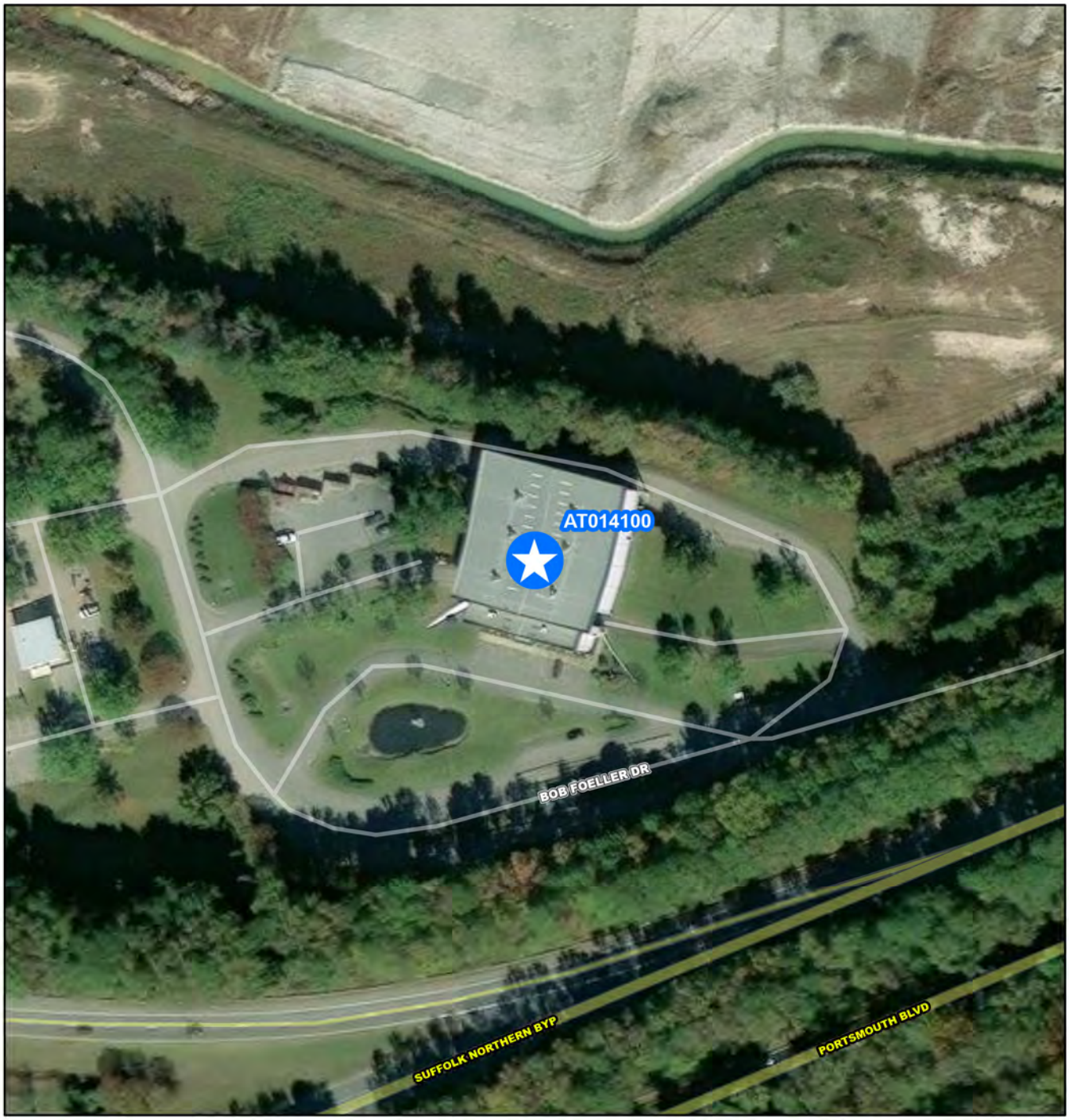
Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Shirley Smith
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	06/01/2017
PER	06/29/2017
Design Delay	08/18/2017
Design	04/27/2018
Bid Delay	01/01/2025
PreConstruction	01/01/2025
Construction	05/01/2025
Closeout	05/01/2026

COST ESTIMATE

Cost Estimate Class:	**Class 3**
PrePlanning	$0
PER	$0
Design	$27,063
PreConstruction	$0
Construction	$2,500,000
Closeout	$12,500
Est. Program Cost	**$2,539,563**
Contingency Budget	$625,000
Est. Project Costs	**$3,164,563**



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 45 90 180 270 360 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: Pre Planning
Regulatory: None

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
$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: Bruce Husselbee
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	10/06/2021
PER	10/06/2021
Design Delay	10/06/2021
Design	10/06/2021
Bid Delay	10/06/2021
PreConstruction	10/06/2021
Construction	10/06/2021
Closeout	10/06/2021

COST ESTIMATE

Cost Estimate Class:	**Class 1**
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**

AT014301

- 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

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

N
W E
S

CIP Location

AT014301

Chesapeake I-I Reduction Phase II

HRSD

Chesapeake I-I Reduction Phase II

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	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
$20,496	$0	$1,449	$5,317	$5,492	$5,492	$2,746	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

CHES-067 Comprehensive I/I Reduction Plan; 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 overflow (SSO) volume at the 5-year level of service by 47 percent.

FUNDING TYPE

Funding Type: Cash

CONTACTS

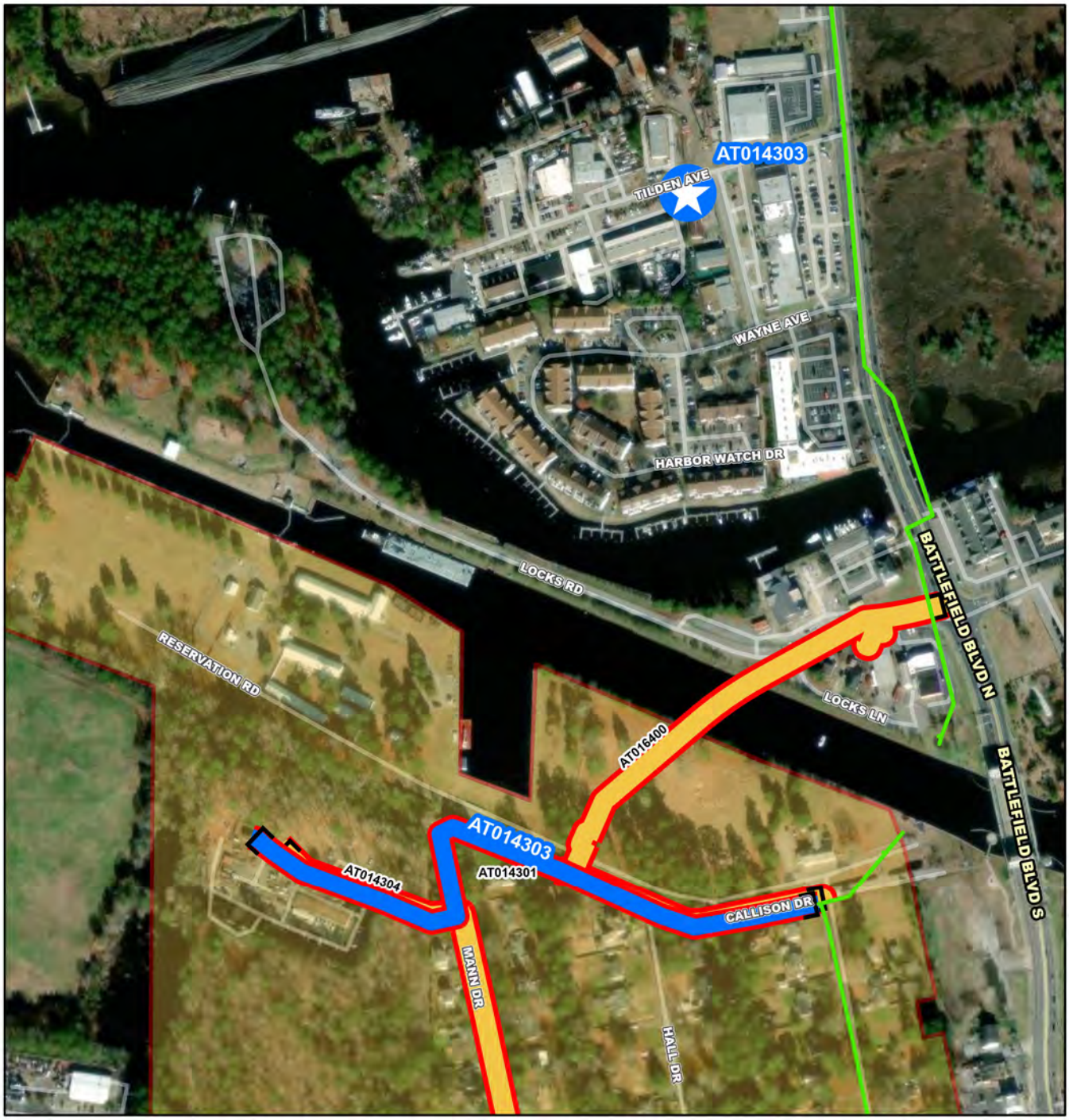
Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Jeff Scarano
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	07/01/2024
PER	09/01/2024
Design Delay	06/01/2025
Design	06/01/2025
Bid Delay	01/01/2026
PreConstruction	01/01/2026
Construction	01/01/2026
Closeout	01/01/2029

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$20,000
PER	$1,000,000
Design	$3,000,000
PreConstruction	$0
Construction	$16,476,000
Closeout	$0
Est. Program Cost	**$20,496,000**
Contingency Budget	$5,124,000
Est. Project Costs	**$25,620,000**



AT014303

- 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

0 137.5 275 550 825 1,100 Feet

N
W E
S

CIP Location

AT014303

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 2

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
$0	$0	$0	$0	$0	$0	$0	$0	$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 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: Cash

CONTACTS

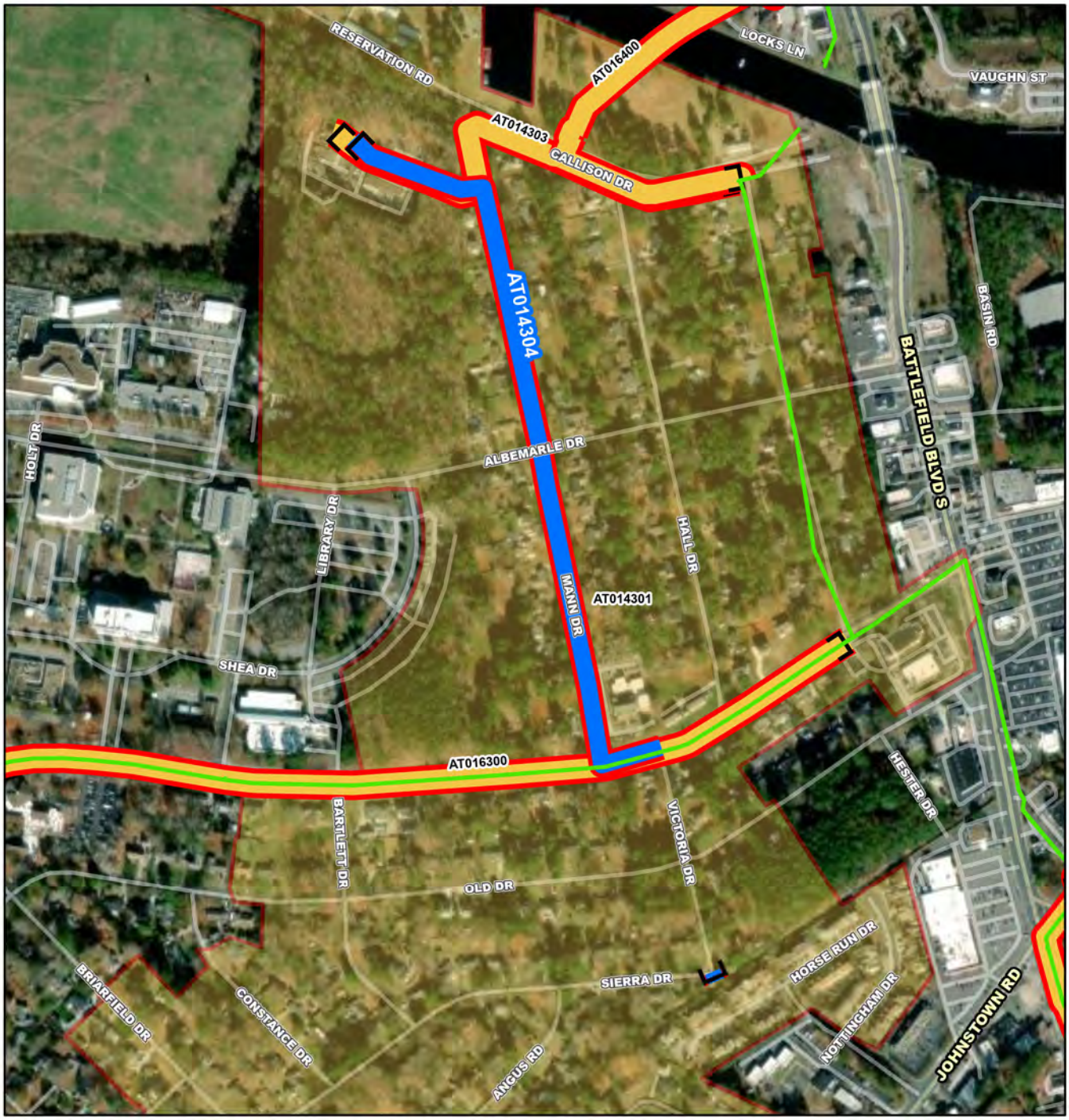
Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: John Dano
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	01/01/2028
PER	11/01/2034
Design Delay	11/01/2035
Design	11/01/2035
Bid Delay	11/01/2037
PreConstruction	11/01/2037
Construction	01/01/2038
Closeout	01/01/2041

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$0
PER	$27,074
Design	$75,412
PreConstruction	$21,140
Construction	$906,922
Closeout	$0
Est. Program Cost	**$1,030,548**
Contingency Budget	$226,731
Est. Project Costs	**$1,257,278**



AT014304

- 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

AT014304

Chesapeake Gravity Main Capacity Improvements

HRSD

N
W E
S

CIP Location

Chesapeake Gravity Main Capacity Improvements

PR_AT014304

System: Atlantic
Type: Locality and Private Property

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	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
$137	$0	$0	$0	$0	$11	$21	$21	$21	$21	$21	$21

PROJECT DESCRIPTION

CHES-067 gravity main capacity improvements including installing 280 LF of 12" GM & 2,760 LF of 16" GM.

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: Cash

CONTACTS

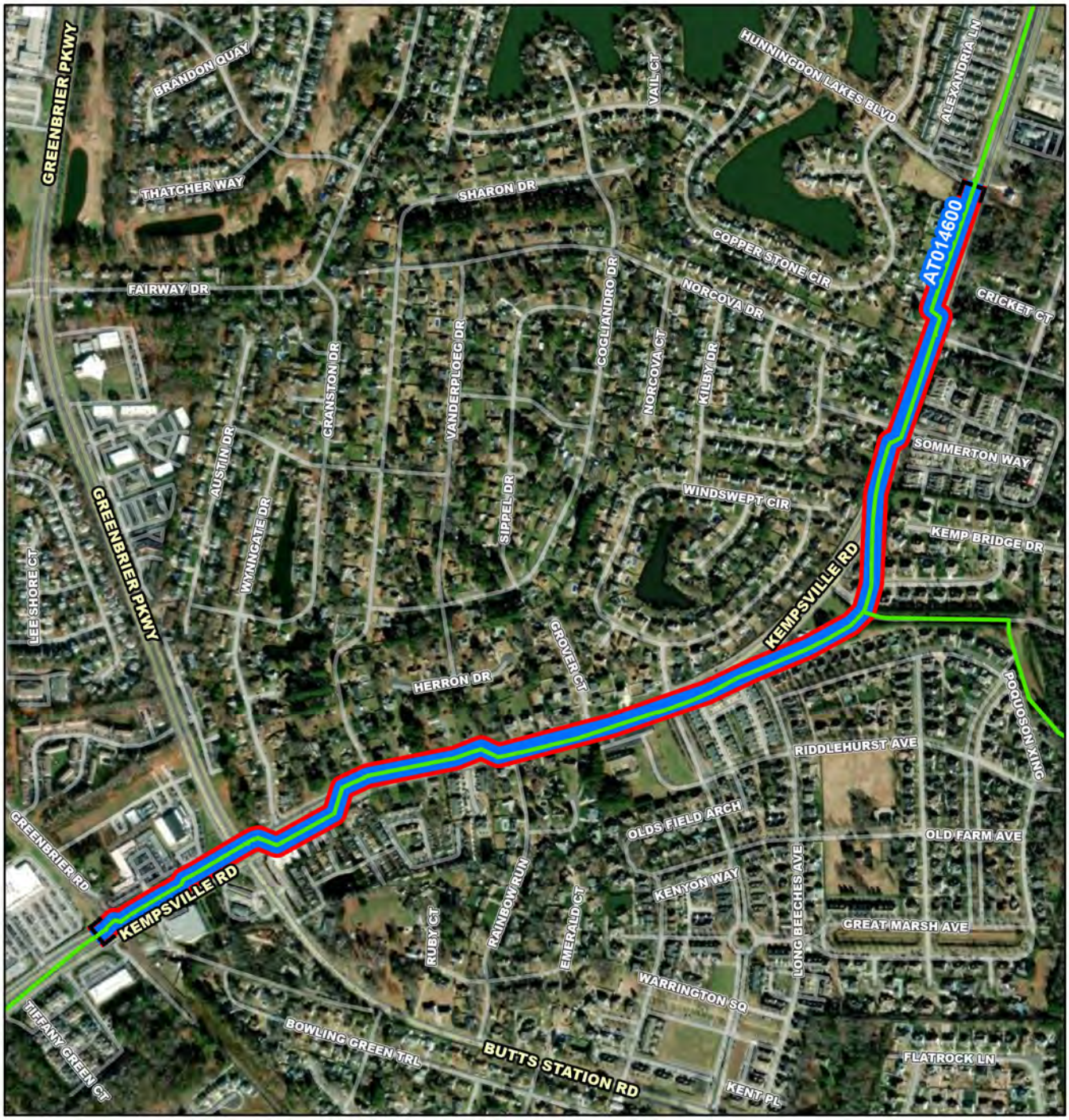
Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: John Dano
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	01/01/2028
PER	11/01/2034
Design Delay	11/01/2035
Design	11/01/2035
Bid Delay	11/01/2037
PreConstruction	11/01/2037
Construction	01/01/2038
Closeout	01/01/2041

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$144,000
PER	$144,000
Design	$288,000
PreConstruction	$0
Construction	$1,728,000
Closeout	$0
Est. Program Cost	**$2,304,000**
Contingency Budget	$576,000
Est. Project Costs	**$2,880,000**



AT014600

- 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

0 285 570 1,140 1,710 2,280 Feet

AT014600

Kempsville Interceptor Force Main Replacement - Phase I

N
W E
S

CIP Location

7415.64015893105

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	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
$8,621	$0	$0	$207	$557	$2,402	$3,840	$1,615	$0	$0	$0	$0

PROJECT DESCRIPTION

This project will replace 5,700 feet of 24 and 30-inch ductile iron pipe along Kempsville Road between Hunningdon Lakes Boulevard and Walton Road.

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: Revenue Bond

CONTACTS

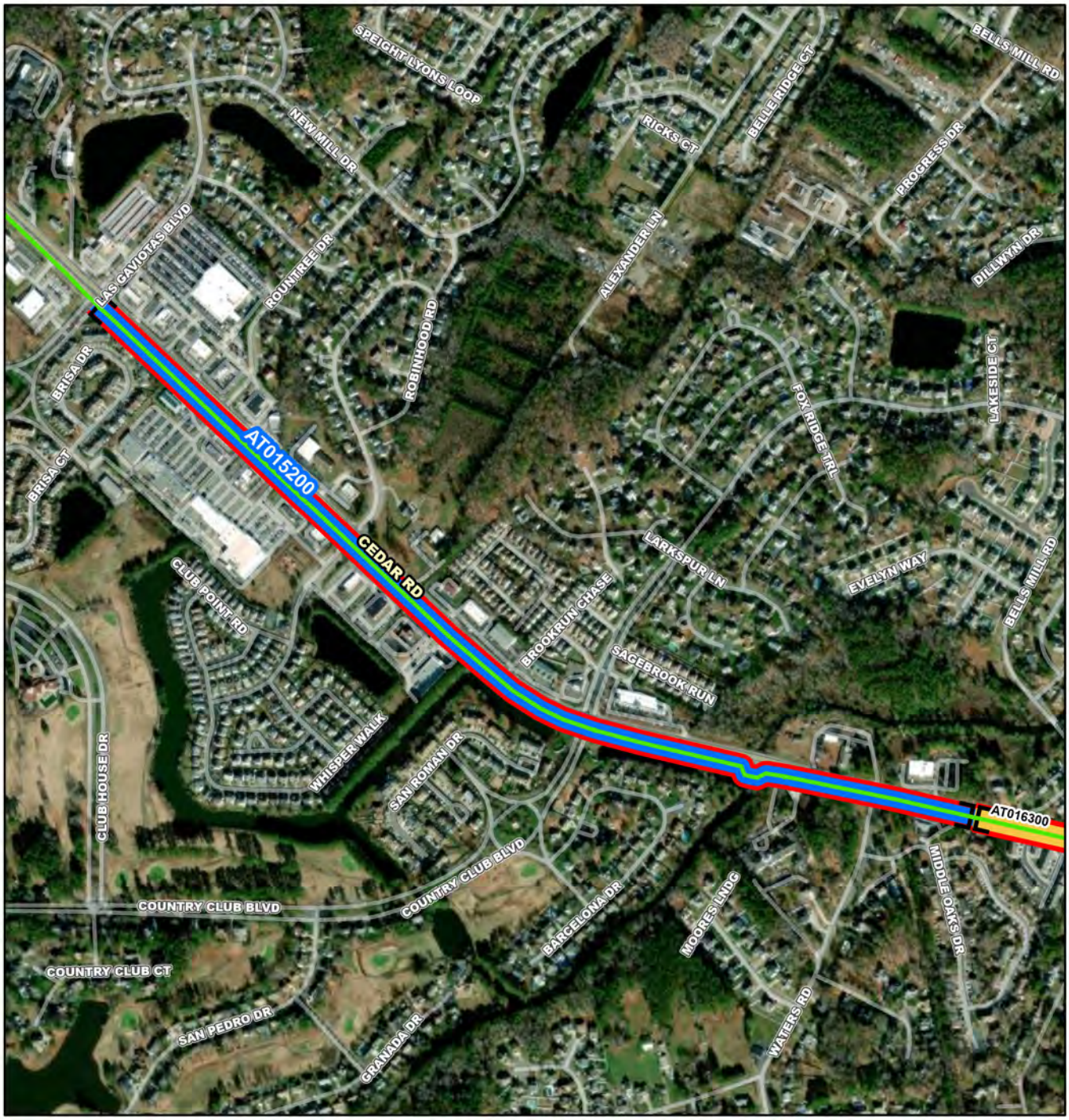
Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Virginia Opp
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	09/01/2022
PER	09/01/2025
Design Delay	08/01/2026
Design	08/01/2026
Bid Delay	10/01/2027
PreConstruction	10/01/2027
Construction	12/01/2027
Closeout	12/01/2029

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$0
PER	$227,700
Design	$683,102
PreConstruction	$15,180
Construction	$7,680,162
Closeout	$15,180
Est. Program Cost	**$8,621,324**
Contingency Budget	$1,518,005
Est. Project Costs	**$10,139,329**



AT015200

- 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

0 280 560 1,120 1,680 2,240 Feet

AT015200

Cedar Road Interceptor Force Main Replacement
Phase I

N
W E
S

CIP Location

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	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
$6,707	$1	$4	$171	$405	$1,920	$2,935	$1,270	$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

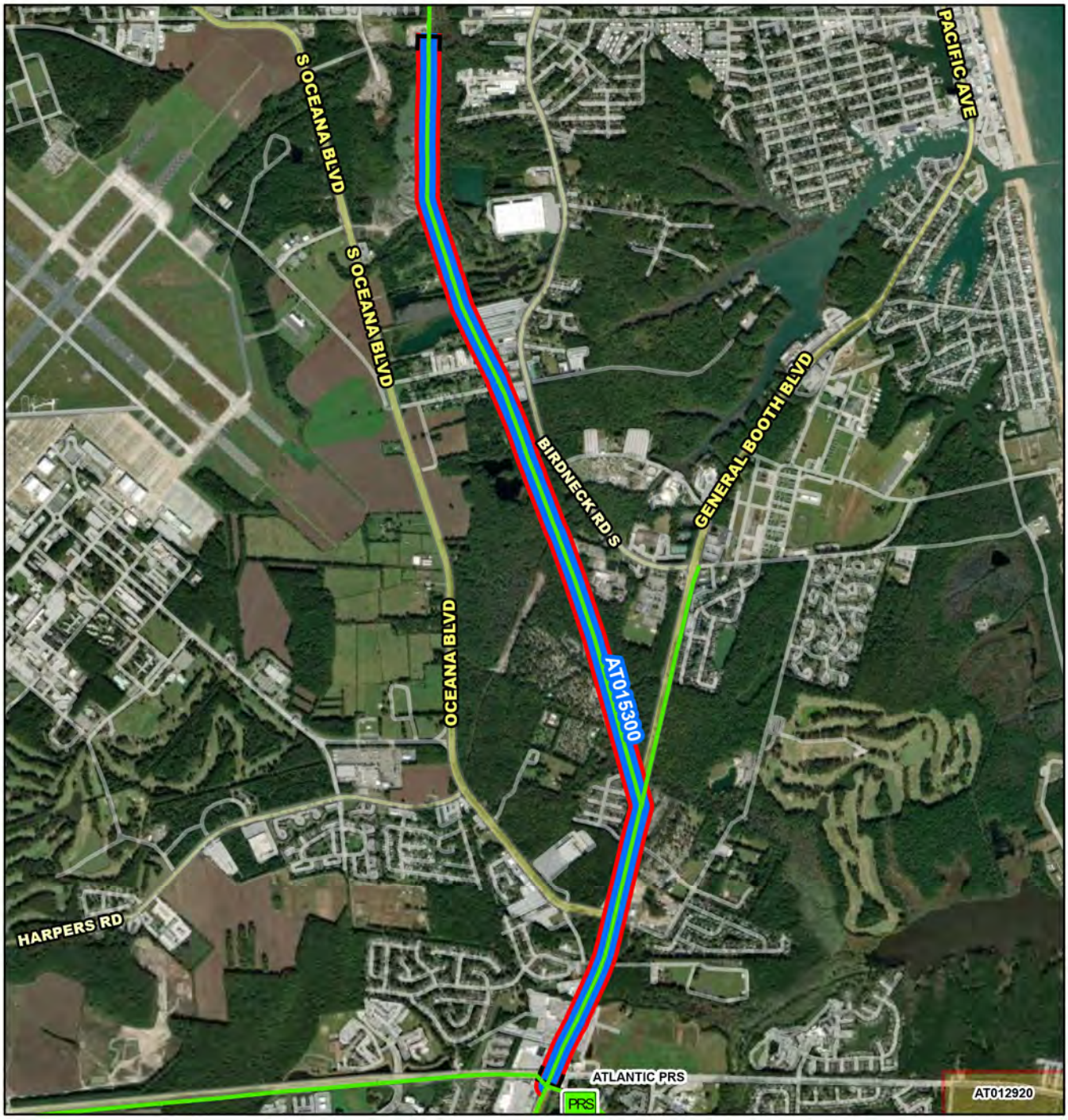
Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Virginia Opp
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	09/01/2022
PER	09/01/2025
Design Delay	08/01/2026
Design	08/01/2026
Bid Delay	10/01/2027
PreConstruction	10/01/2027
Construction	12/01/2027
Closeout	12/01/2029

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$5,953
PER	$186,923
Design	$494,096
PreConstruction	$102,391
Construction	$5,869,619
Closeout	$47,624
Est. Program Cost	**$6,706,605**
Contingency Budget	$1,345,369
Est. Project Costs	**$8,051,974**



AT015300

- 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

0 500 1,000 2,000 3,000 4,000 Feet

AT015300

High Priority Projects Round 2 Project 2

HRSD

N
W E
S

CIP Location

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	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
$608	$0	$0	$0	$0	$47	$94	$94	$94	$94	$94	$94

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).
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

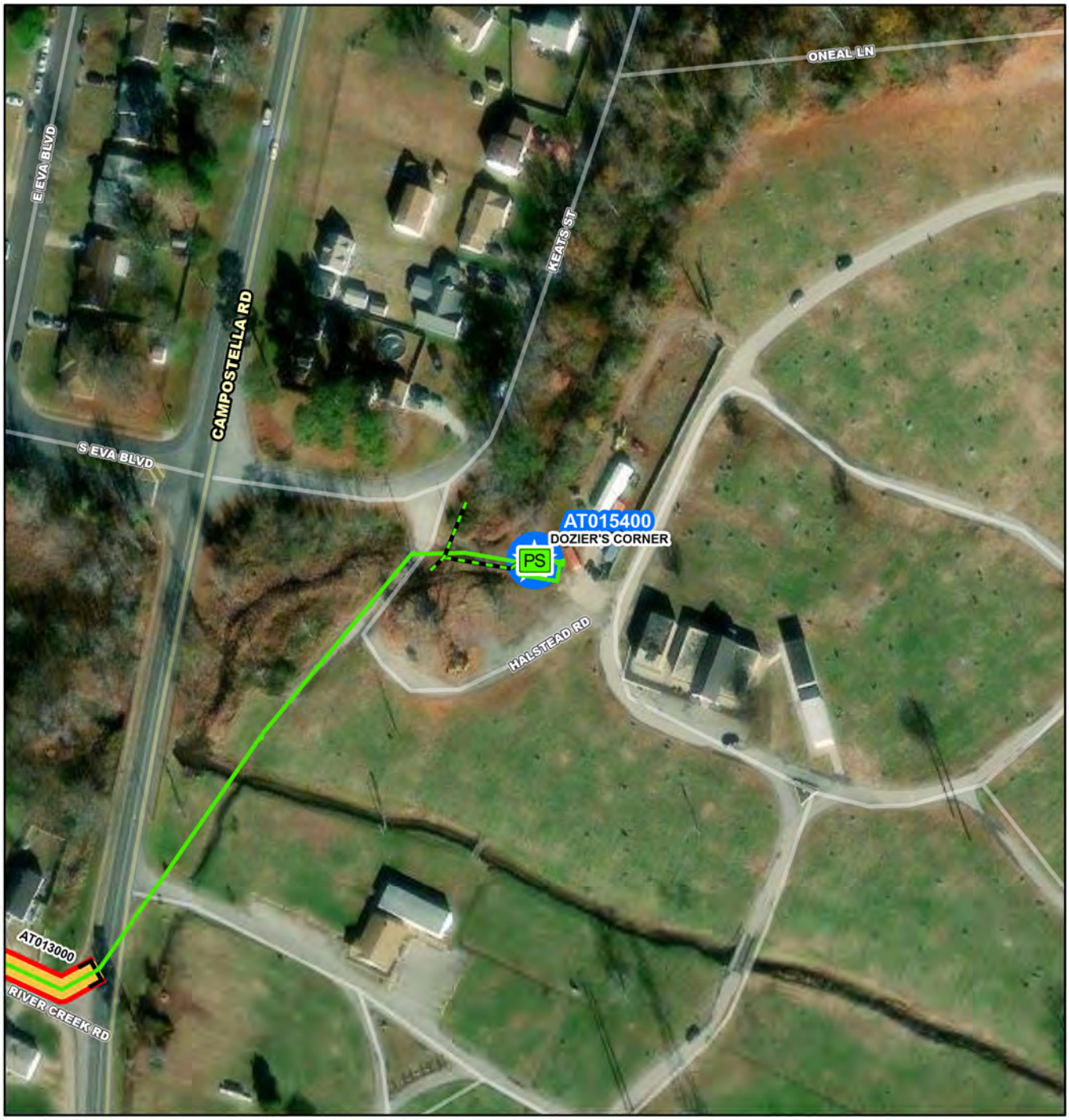
Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: John Dano
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	01/01/2028
PER	11/01/2034
Design Delay	11/01/2035
Design	11/01/2035
Bid Delay	11/01/2037
PreConstruction	11/01/2037
Construction	01/01/2038
Closeout	01/01/2041

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$639,348
PER	$1,598,370
Design	$1,918,044
PreConstruction	$319,674
Construction	$27,172,286
Closeout	$319,674
Est. Program Cost	**$31,967,396**
Contingency Budget	$0
Est. Project Costs	**$31,967,396**



AT015400

- 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 45 90 180 270 360 Feet

AT015400

Doziers Corner Pump Station Replacement

HRSD

N
W E
S

CIP Location

Doziers Corner Pump Station Replacement

PR_AT015400

System: Atlantic
Type: Pump Stations

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	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
$12,431	$456	$1,120	$2,881	$2,881	$2,881	$2,173	$38	$0	$0	$0	$0

PROJECT DESCRIPTION

The project is to install dry pit submersible pumps and raise, or otherwise protect, electrical equipment at 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. This station is well below the 100 year flood plan and the site is too small to install a separate control room. This is due to the Cemetery and storm water ditches surrounding this station. This project cannot be completed within the Phase II of the Rehabilitation Action Plan.

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	09/01/2021
PER	04/08/2022
Design Delay	04/01/2024
Design	04/01/2024
Bid Delay	01/01/2025
PreConstruction	01/01/2025
Construction	04/01/2025
Closeout	04/01/2029

COST ESTIMATE

Cost Estimate Class:	**Class 4**
PrePlanning	$0
PER	$196,495
Design	$650,000
PreConstruction	$10,000
Construction	$11,525,000
Closeout	$50,000
Est. Program Cost	**$12,431,495**
Contingency Budget	$2,000,000
Est. Project Costs	**$14,431,495**

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 65 130 260 390 520 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: Pre Planning
Regulatory: None

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
$2,325	$1,661	$664	$0	$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	07/01/2022
PER	07/01/2022
Design Delay	07/01/2022
Design	07/01/2022
Bid Delay	07/01/2022
PreConstruction	07/01/2022
Construction	12/01/2023
Closeout	07/01/2024

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$0
PER	$0
Design	$0
PreConstruction	$0
Construction	$2,325,170
Closeout	$0
Est. Program Cost	**$2,325,170**
Contingency Budget	$319,830
Est. Project Costs	**$2,645,000**

AT015800

- 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

AT015800

Atlantic Treatment Plant Liquid Side Odor Evaluation and Improvements

HRSD

Atlantic Treatment Plant Liquid Side Odor Evaluation and Improvements

PR_AT015800

System: Atlantic
Type: Wastewater Treatment

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
$2,051	$891	$127	$212	$207	$207	$207	$191	$9	$0	$0	$0

PROJECT DESCRIPTION

This project includes evaluation of Odor Control Station (OCS) B and D, as well as, all of the unit processes and process piping that flow towards OCS B and D. Any repairs deemed necessary will be completed as part of this project.

PROJECT JUSTIFICATION

There has been a distinct increase in odor complaints from neighbors around Atlantic Plant. This project will ensure that all odor control is operating optimally and as designed.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Operations-Treatment
Contacts-Dept Contacts: Rebecca Currall
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	08/01/2022
PER	01/01/2023
Design Delay	06/01/2024
Design	07/01/2024
Bid Delay	01/01/2026
PreConstruction	10/01/2025
Construction	11/01/2025
Closeout	06/01/2030

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$0
PER	$890,911
Design	$190,000
PreConstruction	$10,000
Construction	$950,000
Closeout	$10,000
Est. Program Cost	**$2,050,911**
Contingency Budget	$232,000
Est. Project Costs	**$2,282,911**

AT015900

- 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 62.5 125 250 375 500 Feet

AT015900

Atlantic Treatment Plant Gravity Belt Thickener and Pre-Dewatering Polymer Improvements

N
W E
S

CIP Location

Atlantic Treatment Plant Gravity Belt Thickener & Pre-Dewatering Polymer Improv

PR_AT015900

System: Atlantic
Type: Biosolids

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
$4,430	$78	$195	$689	$873	$873	$873	$804	$46	$0	$0	$0

PROJECT DESCRIPTION

This project will replace existing pre-dewatering and gravity belt thickener (GBT) polymer systems.

PROJECT JUSTIFICATION

The Chesapeake-Elizabeth Treatment Plant (CETP) was shut down in calendar year 2021 and influent flows were redirected to the Atlantic Treatment Plant (ATP). 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 at minimum cost, additional automation, and full leveraging of thermally hydrolyzed solids by providing opportunity for drier cake. After review of the anticipated solids production, it was determined that the existing units provide adequate capacity with a single unit out of service.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Operations-Treatment
Contacts-Dept Contacts: Rebecca Currall
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	08/01/2022
PER	01/01/2023
Design Delay	06/01/2024
Design	07/01/2024
Bid Delay	01/01/2026
PreConstruction	10/01/2025
Construction	11/01/2025
Closeout	06/01/2030

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$0
PER	$77,593
Design	$292,407
PreConstruction	$10,000
Construction	$4,000,000
Closeout	$50,000
Est. Program Cost	**$4,430,000**
Contingency Budget	$871,000
Est. Project Costs	**$5,301,000**

AT016000

- 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 45 90 180 270 360 Feet

N
W E
S

CIP Location

AT016000

Atlantic Treatment Plant Odor and Solids Improvements 2023

HRSD

Atlantic Treatment Plant Odor and Solids Improvements 2023

PR_AT016000

System: Atlantic
Type: Biosolids

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
$145,892	$1,050	$3,188	$21,968	$23,362	$23,956	$24,118	$24,267	$23,983	$0	$0	$0

PROJECT DESCRIPTION

This project includes the construction of gravity thickeners, and all associated piping and appurtenances for primary solids thickening; Replacement of Odor Control Station (OCS) A, OCS B, and OCS C with a new odor control system that is sized to accommodate current odor sources served by OCS A, B, and C as well as the gravity thickeners, and primary fermenter; Evaluation and upgrade of digester gas system, replacement of existing flares with fully enclosed flares; Installation of a new Cambi B6 skid with associated piping, appurtenances, instrumentation and electrical work; Installation of screw loadout from pre-dewatering cake shoot that will allow loadout of raw cake if pre-dewatering hopper is out of service; Installation of a third FOG receiving tank and associated piping and appurtenances; Installation of blower, coarse bubble system, Mg feed system, and all associated piping and appurtenances for post-digestion struvite precipitation in the digested solids storage tank (DSST).

PROJECT JUSTIFICATION

There have been increased odor complaints around Atlantic Plant. This project will improve resiliency in solids handling at Atlantic Plant and will reduce the potential for offsite odors around the plant.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Operations-Treatment
Contacts-Dept Contacts: Rebecca Currall
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	08/01/2022
PER	01/01/2023
Design Delay	06/01/2024
Design	07/01/2024
Bid Delay	01/01/2026
PreConstruction	10/01/2025
Construction	11/01/2025
Closeout	06/01/2030

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$0
PER	$1,049,575
Design	$4,782,500
PreConstruction	$10,000
Construction	$140,000,000
Closeout	$50,000
Est. Program Cost	**$145,892,075**
Contingency Budget	$28,900,000
Est. Project Costs	**$174,792,075**

AT016100

- 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 45 90 180 270 360 Feet

N
W E
S

CIP Location

AT016100

Atlantic Treatment Plant Solids Curing Facility and Pad Improvements

HRSD

Atlantic Treatment Plant Solids Curing Facility and Pad Improvements

PR_AT016100

System: Atlantic
Type: Biosolids

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
$11,676	$124	$685	$1,875	$2,283	$2,283	$2,283	$2,097	$46	$0	$0	$0

PROJECT DESCRIPTION

This project will enclose the north end of the South pad for biosolids curing and install biofilter, piping, and appurtenances to scrub the headspace of the enclosure; increase wall height around the remaining portion of the south pad to allow for higher stacking of biosolids; repair columns on North biosolids pad; and install conveyor that runs from the curing enclosure to the North biosolids pad.

PROJECT JUSTIFICATION

There have been increased odor complaints around Atlantic Plant. This project will reduce the potential for offsite odors from the biosolids storage pads and from trucks hauling solids for land application.

FUNDING TYPE

Funding Type: Cash

CONTACTS

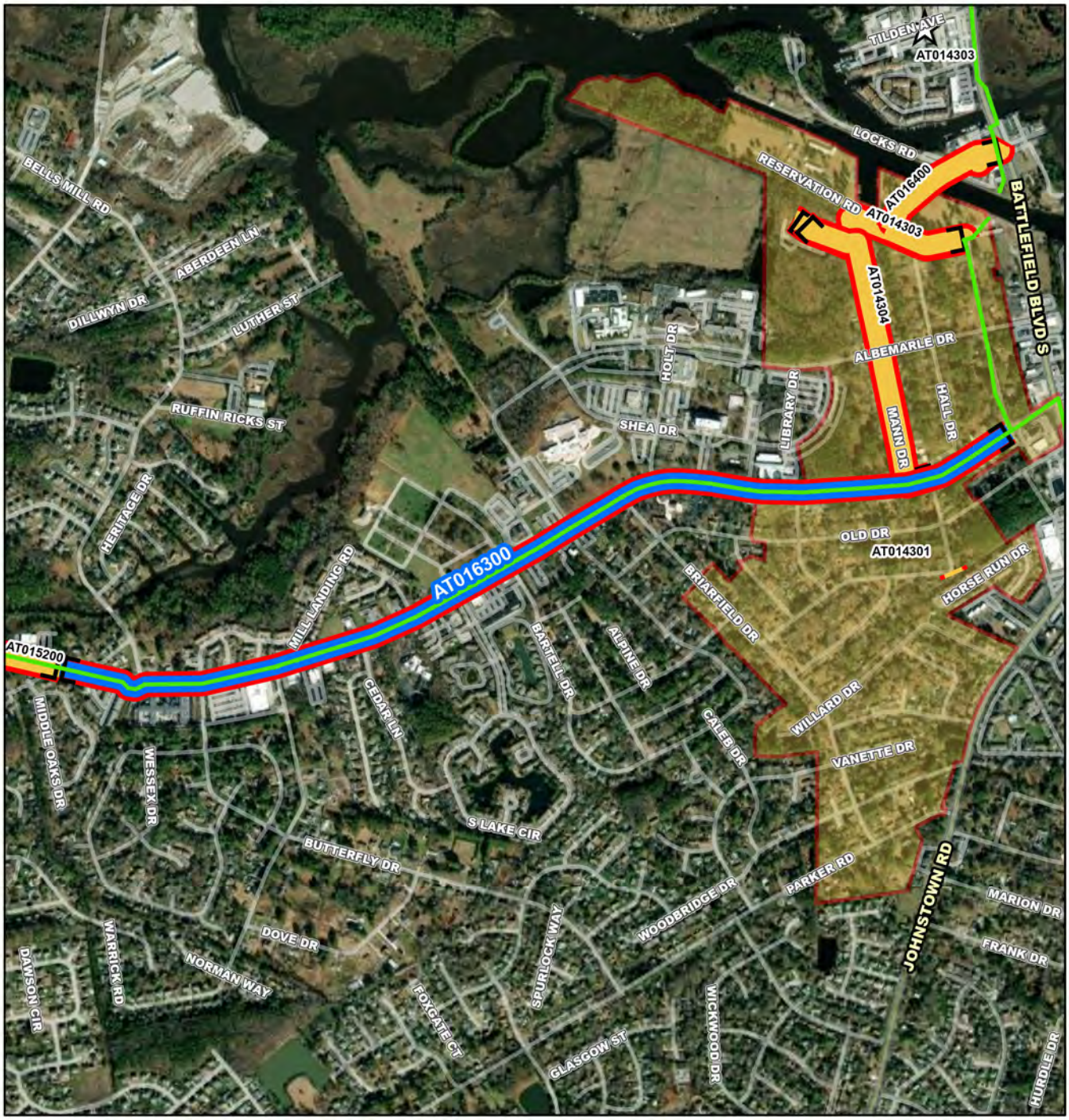
Contacts-Requesting Dept: Operations-Treatment
Contacts-Dept Contacts: Rebecca Currall
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	08/01/2022
PER	01/01/2023
Design Delay	06/01/2024
Design	07/01/2024
Bid Delay	01/01/2026
PreConstruction	10/01/2025
Construction	11/01/2025
Closeout	06/01/2030

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$0
PER	$123,593
Design	$1,027,407
PreConstruction	$10,000
Construction	$10,465,200
Closeout	$50,000
Est. Program Cost	**$11,676,200**
Contingency Budget	$2,311,000
Est. Project Costs	**$13,987,200**



AT016300

- 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

0 460 920 1,840 2,760 3,680 Feet

N
W E
S

CIP Location

AT016300

Cedar Road Interceptor Force Main Replacement Phase II

HRSD

Cedar Road Interceptor Force Main Replacement Phase II

PR_AT016300

System: Atlantic
Type: Pipelines

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
$15,233	$0	$0	$0	$338	$667	$4,282	$6,938	$3,008	$0	$0	$0

PROJECT DESCRIPTION

This project is a continuation of the AT015200 Cedar Road Interceptor Force Main Replacement Phase I project in continuing the new 24-inch upsized pipe 9500 feet to valve AT-1159-2.

PROJECT JUSTIFICATION

Along with the continuation of the AT015200 (Phase I) project, this project (Phase II) will provide the necessary improvements required in the hydraulic analysis for the Great Bridge Interceptor Extension 16-inch Replacement - CIP AT011900 HART report.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

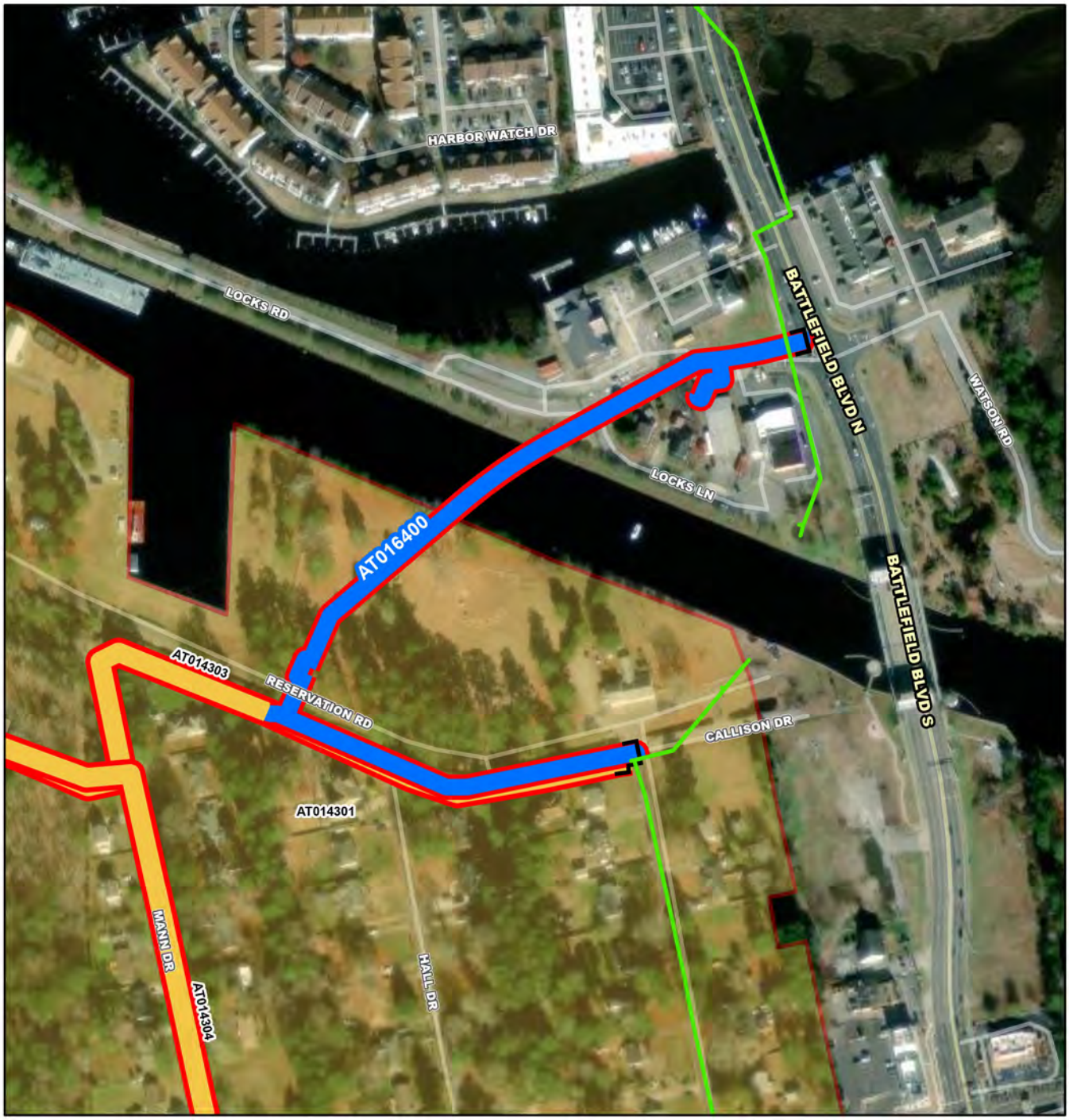
Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Virginia Opp
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	01/01/2024
PER	09/01/2026
Design Delay	08/01/2027
Design	08/01/2027
Bid Delay	10/01/2028
PreConstruction	10/01/2028
Construction	12/01/2028
Closeout	12/01/2030

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$0
PER	$371,977
Design	$805,949
PreConstruction	$61,996
Construction	$13,876,121
Closeout	$116,974
Est. Program Cost	**$15,233,017**
Contingency Budget	$2,997,143
Est. Project Costs	**$18,230,160**



AT016400

- 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 95 190 380 570 760 Feet

N
W E
S

CIP Location

AT016400

Great Bridge Interceptor Force Main Emergency Replacement (SF-180)

HRSD

Great Bridge Interceptor Force Main Emergency Replacement (SF-180)

PR_AT016400

System: Atlantic
Type: Pipelines

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
$5,836	$542	$5,294	$0	$0	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project will replace the damaged 20-inch 1968 cast iron force main located within the Intracoastal Waterway via HDD parallel to the existing in-service City of Chesapeake water main and remove the failed abandoned water main and force main underneath the Waterway.

PROJECT JUSTIFICATION

The SF-180 failure was on a 20-inch 1968 cast iron force main that was likely caused by a dredge vessel spud. An emergency declaration was authorized on March 13, 2023. "The SF-180 failure was on a 20-inch 1968 cast iron force main that was likely caused by a dredge vessel spud. An emergency declaration was authorized on March 13, 2023. Although the failure was isolated, the project remains under an emergency declaration due to the following:

- Elbow Road PRS is being operated continuously and was not originally designed to operate during dry weather.
- With the current flow diversion, force main shutdowns and diversions for two projects will result in major SSOs in upstream City of Chesapeake service areas.

Both projects are scheduled to bid for construction in Fall 2023. The projects are the Great Bridge Interceptor Extension 16-inch Replacement (CIP Project No. AT011900) and the West Road Interceptor Force Main Extension (CIP Project No. NP014600)."

FUNDING TYPE

Funding Type: Cash

CONTACTS

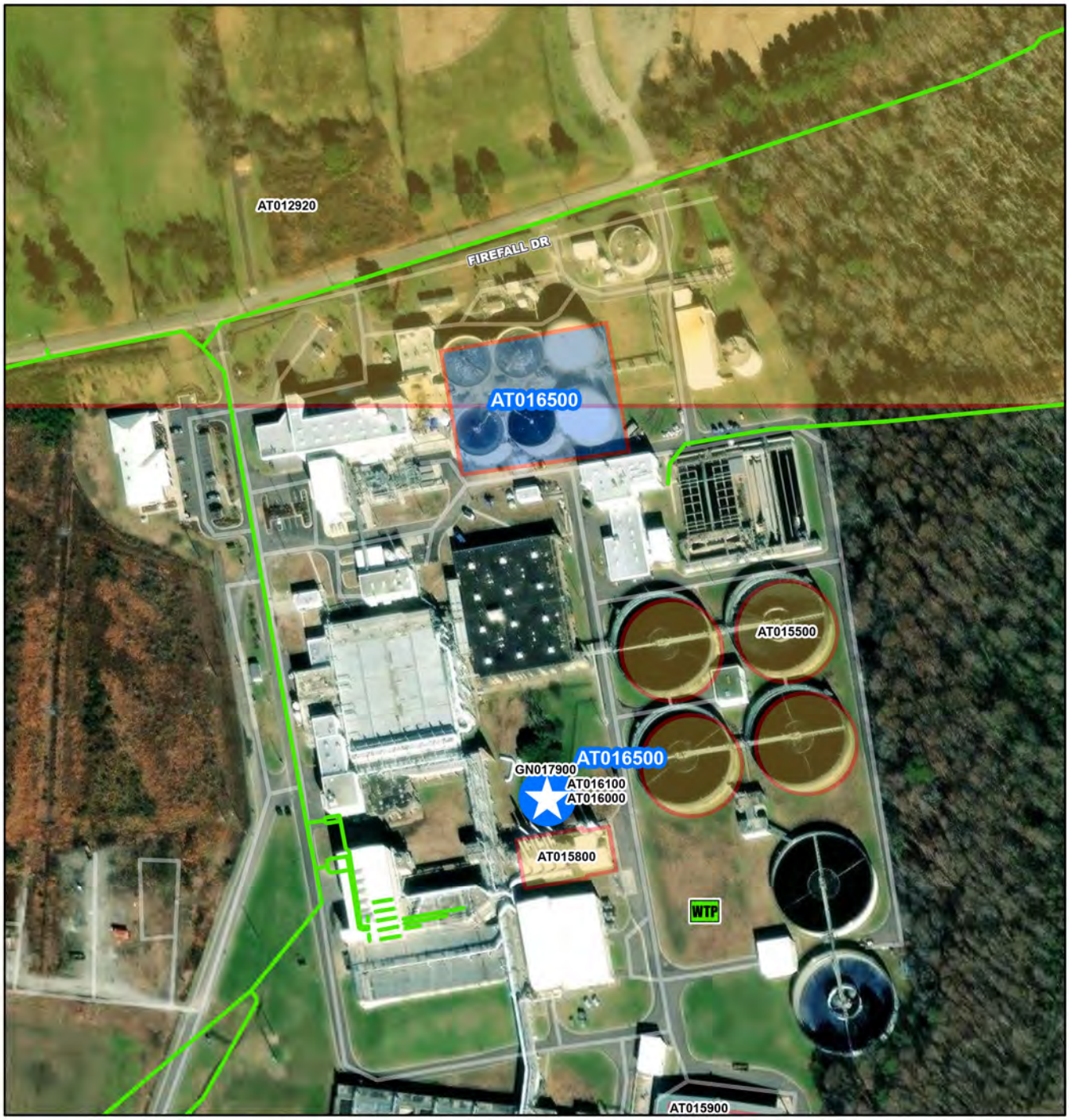
Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Shirley Smith
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	03/16/2023
PER	03/17/2023
Design Delay	04/22/2023
Design	05/01/2023
Bid Delay	06/01/2024
PreConstruction	06/01/2024
Construction	07/01/2024
Closeout	04/01/2025

COST ESTIMATE

Cost Estimate Class:	**Class 2**
PrePlanning	$0
PER	$130,360
Design	$363,690
PreConstruction	$48,345
Construction	$5,269,556
Closeout	$24,173
Est. Program Cost	**$5,836,124**
Contingency Budget	$966,891
Est. Project Costs	**$6,803,015**



AT016500

- 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 80 160 320 480 640 Feet

AT016500

Atlantic Treatment Plant Digester Improvements

HRSD

N
W E
S

CIP Location

Atlantic Treatment Plant Digester Improvements

PR_AT016500

System: Atlantic
Type: Biosolids

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
$19,656	$0	$1,920	$3,882	$3,513	$3,513	$3,513	$3,228	$88	$0	$0	$0

PROJECT DESCRIPTION

The Atlantic Treatment Plant includes four anaerobic digesters to process biosolids prior to final dewatering and disposal. Each digester includes an 80 foot diameter concrete tank, floating steel cover, mixing system, and appurtenances. This project will provide new fixed covers, new mixing systems for each of the four digesters, an allowance for concrete rehabilitation, and associated piping and electrical modifications.

PROJECT JUSTIFICATION

The existing digesters were constructed 40 years ago and many of the components are at the end of their useful life. The floating covers do not provide a gas-tight seal and contribute to off-site odor concerns at the plant. The mixing systems are no longer in production so obtaining parts for maintenance is difficult. Some parts have to be fabricated locally.

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	04/01/2024
PER	04/01/2024
Design Delay	04/01/2024
Design	07/01/2024
Bid Delay	01/01/2026
PreConstruction	10/01/2025
Construction	11/01/2025
Closeout	06/01/2030

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$0
PER	$0
Design	$2,880,000
PreConstruction	$580,000
Construction	$16,100,000
Closeout	$96,000
Est. Program Cost	**$19,656,000**
Contingency Budget	$5,000,000
Est. Project Costs	**$24,656,000**

AT016600

- 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

0 240 480 960 1,440 1,920 Feet

N W E S

CIP Location

AT016600

Great Bridge Boulevard Interceptor Force Main (SF-164) Segmental Replacement at Oak Bridge-Glenleigh

HRSD

Great Bridge Blvd IFM (SF-164) Segmental Replacement at Oak Bridge-Glenleigh

PR_AT016600

System: Atlantic
Type: Pipelines

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
$9,215	$0	$622	$700	$117	$6,221	$1,555	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project will replace up to 5,400 feet of 30-inch ductile iron Interceptor Force Main (SF-164) along Great Bridge Boulevard in the City of Chesapeake.

PROJECT JUSTIFICATION

This project will provide for segmental replacement of interceptor force main on Great Bridge Boulevard identified during FY23 condition assessment to have extensive pipe wall loss due to interior and exterior corrosion. The pipe segment investigated in June 2023 at the City force main connection (AT1139-3) resulted in a pinhole failure requiring the pipe to be encased in concrete (temporary repair). The remaining ductile iron pipe in this location was determined to have similar pipe wall thickness and a very high likelihood of failure (LoF = 5.0). Follow up condition assessment to the west (near AT1138-1) to confirm replacement extents observed more ductile iron pipe with significant reduced wall thickness. Recommended replacement extents include replacement of all ductile iron pipe west of AT1193-3 to the 30-inch PVC transition point on the southeast side of Dominion Boulevard (2008) to provide for complete renewal of this section of SF-164.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Gene Rutledge
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	07/01/2024
PER	10/01/2024
Design Delay	04/01/2025
Design	04/01/2025
Bid Delay	04/01/2026
PreConstruction	04/01/2027
Construction	07/01/2027
Closeout	10/01/2028

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$0
PER	$388,800
Design	$933,120
PreConstruction	$116,640
Construction	$7,776,000
Closeout	$0
Est. Program Cost	**$9,214,560**
Contingency Budget	$1,944,000
Est. Project Costs	**$11,158,560**

AT016700

- 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

AT016700

Providence Road Interceptor Force Main (SF-165)
Segmental Replacement at Depositor Lane

HRSD

N
W E
S

CIP Location

Providence Road IFM (SF-165) Segmental Replacement at Depositor Lane

PR_AT016700

System: Atlantic
Type: Pipelines

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
$1,304	$0	$55	$149	$1,100	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project will address the replacement of a segment of a 36-inch reinforced concrete pressure pipe (RCPP) exposed in creek crossing of Morgan Trail Creek along Providence Road in Virginia Beach.

PROJECT JUSTIFICATION

This project will replace a section of a 36-inch RCPP force main that is severely undermined at an exposed creek crossing due to stream bed and bank erosion. This pipe section is approximately 15-feet downstream of a stormwater headwall discharge for 21-inch, 36-inch and two 60-inch discharge pipes.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Gene Rutledge
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	07/01/2024
PER	07/01/2024
Design Delay	01/01/2025
Design	07/01/2025
Bid Delay	04/01/2026
PreConstruction	04/01/2026
Construction	07/01/2026
Closeout	07/01/2027

COST ESTIMATE

Cost Estimate Class:	**Class 5**
PrePlanning	$0
PER	$55,000
Design	$132,000
PreConstruction	$16,500
Construction	$1,100,000
Closeout	$0
Est. Program Cost	**$1,303,500**
Contingency Budget	$275,000
Est. Project Costs	**$1,578,500**