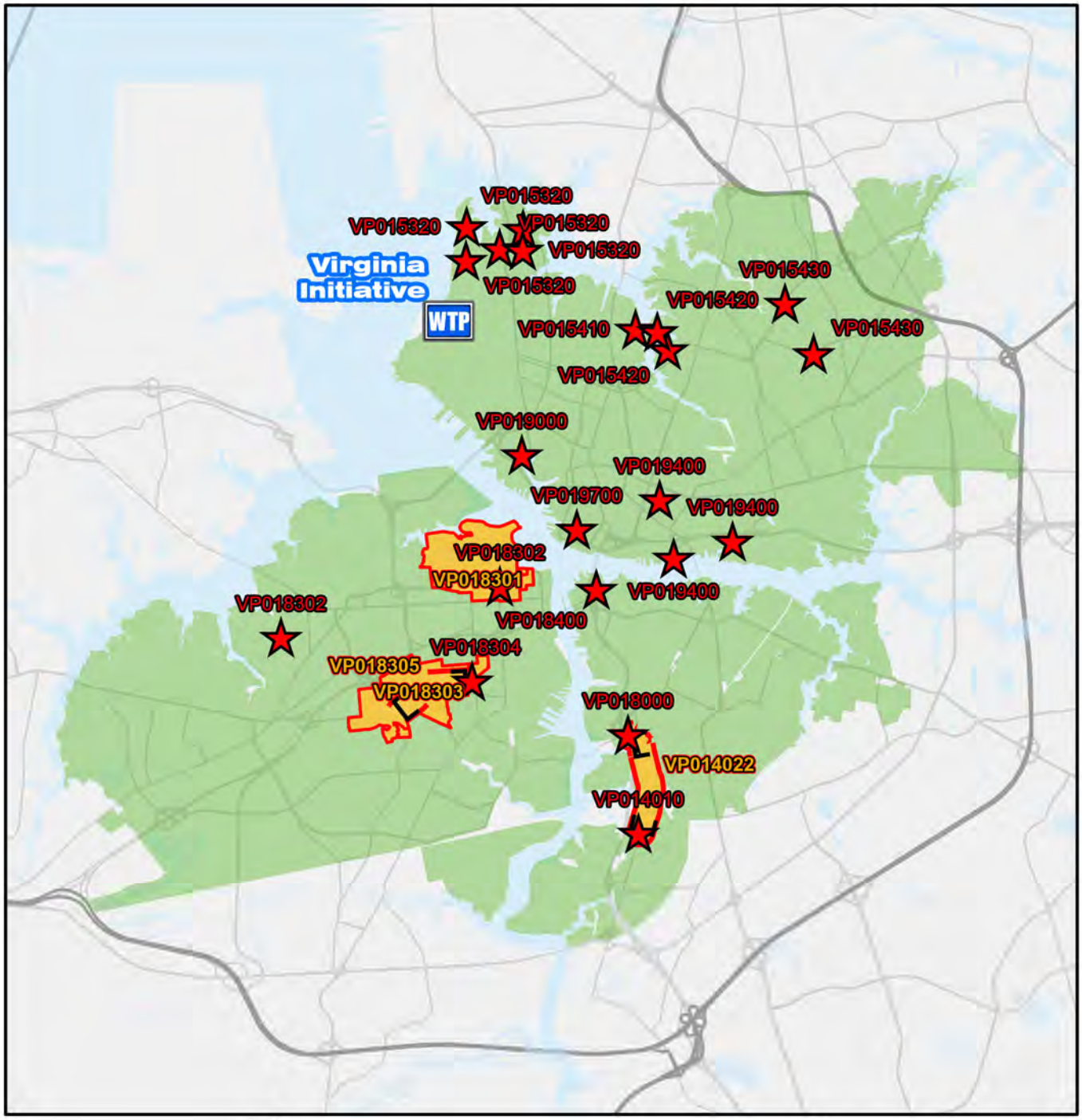
Virginia Initiative Treatment Plant



Legend

- Virginia Initiative
- 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 2,625 5,250 10,500 15,750 21,000 Feet

Virginia Initiative Treatment Plant Service Area CIP Projects

Treatment Plant Projects

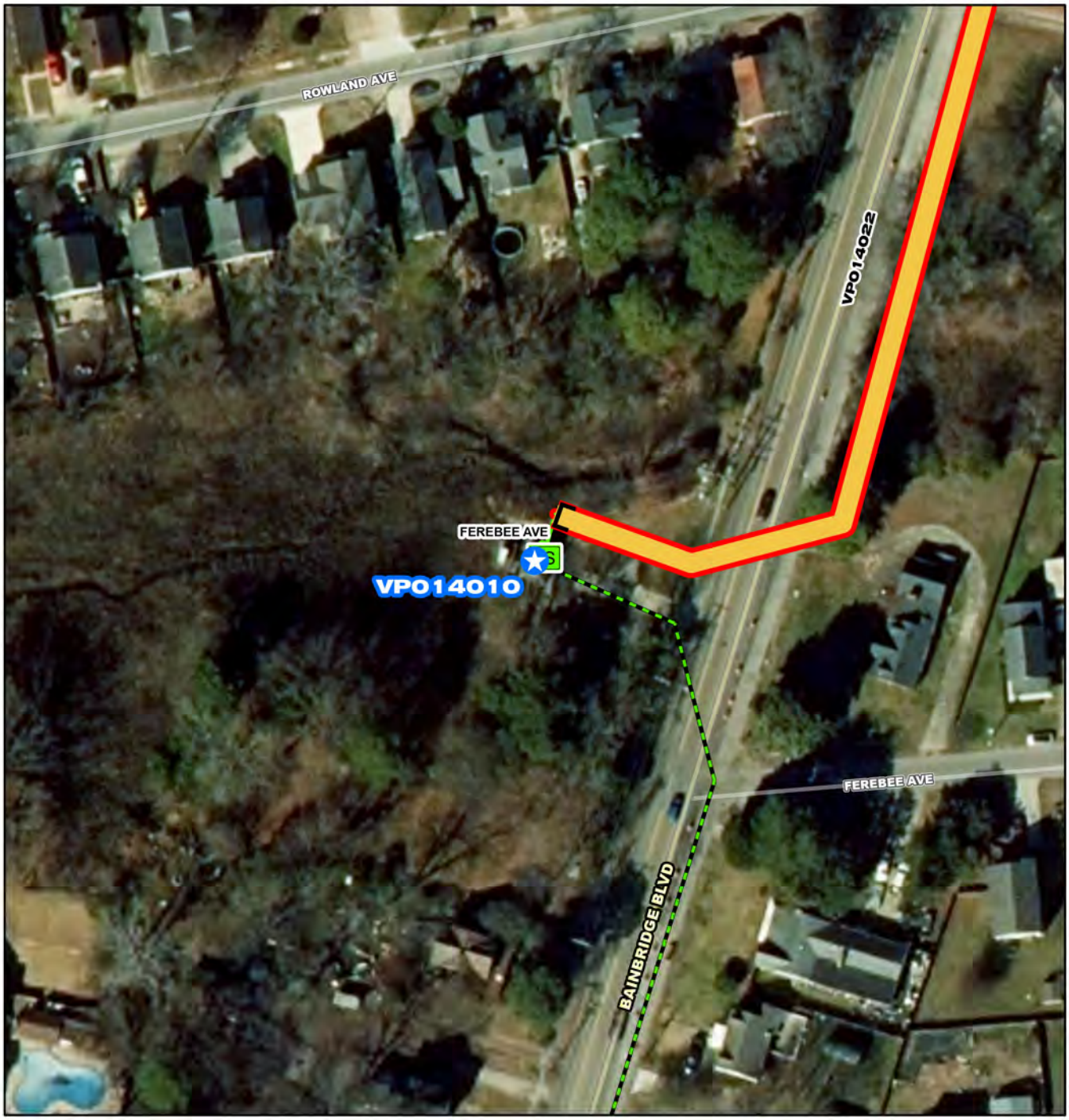
GN016390
GN016391
GN016392
GN017900
GN019700
VP018800
VP019200

HRSD

N

CIP Location

Service Area



VP014010

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

Legend

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

0 25 50 100 150 200 Feet

VP014010

Ferebee Avenue Pump Station Replacement

HRSD

N
W E
S

CIP Location

Ferebee Avenue Pump Station Replacement

PR_VP014010

System: VIP
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	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
$12,476	$8,821	$3,655	$0	$0	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project is to design and construct a replacement pump station for the 1951 Ferebee Pump Station.

PROJECT JUSTIFICATION

This project will evaluate and implement the replacement of Ferebee Avenue Pump Station, as it is nearing the end of its useful life. This facility was inspected in 2008, 2011, and August 2013, as part of a Condition Assessment Program administered by Brown and Caldwell. Ferebee Avenue Pump Station was recommended for replacement and/or upgrades under Level 2 in the Rehabilitation program. An in-house hydraulic evaluation in 2014 identified several alternatives for maintaining this station as a lift station or revising its hydraulic capacity and connectivity to function as a terminal station. Final alignment and connectivity (to gravity or to the force main system) will significantly impact the design of both the Ferebee Avenue and Park Avenue pump stations. Preliminary engineering evaluations of these two stations will be conducted jointly.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

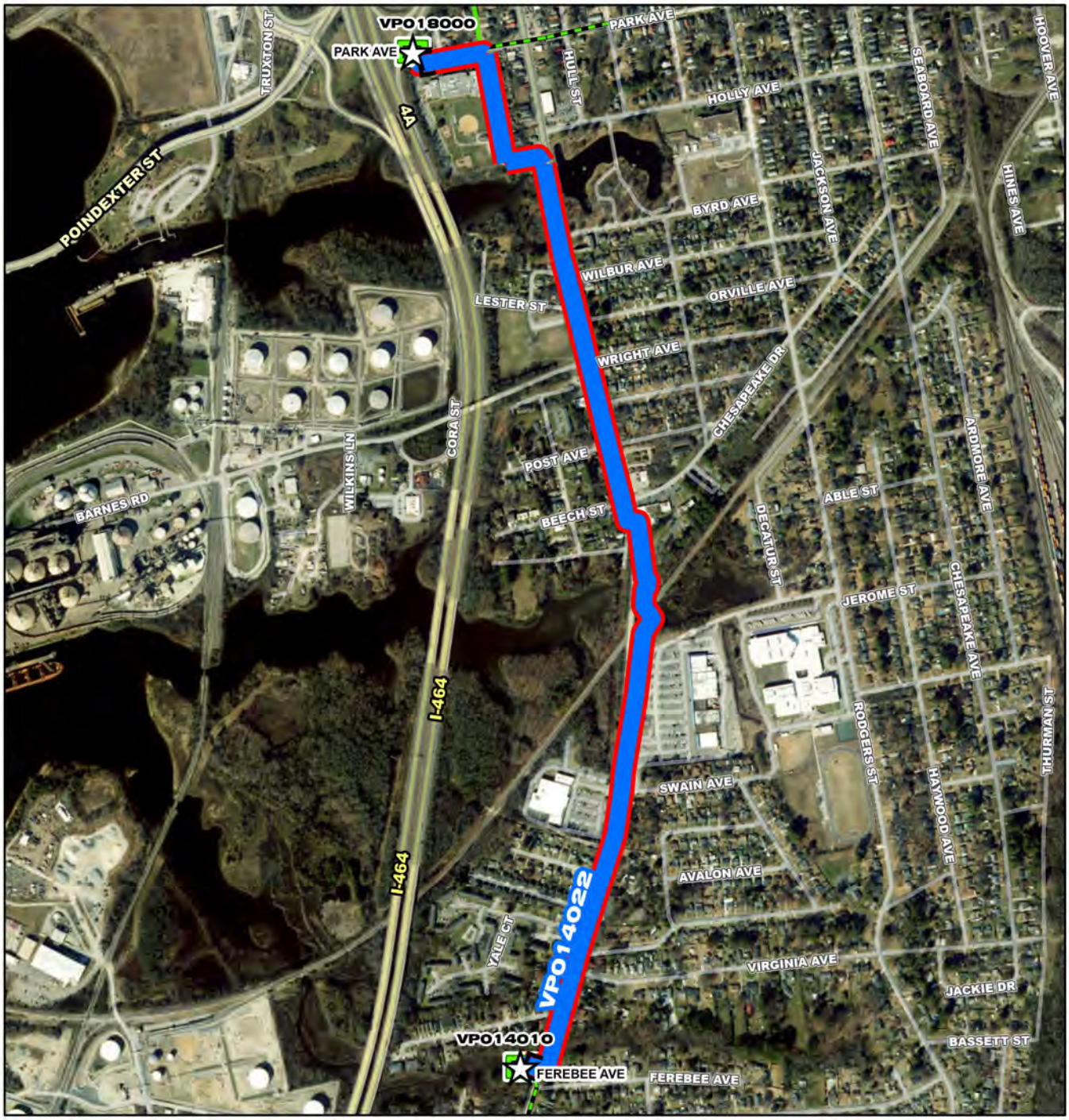
Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Nick Taschner
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	07/01/2015
PER	05/23/2017
Design Delay	12/03/2019
Design	01/02/2020
Bid Delay	06/01/2023
PreConstruction	10/02/2023
Construction	03/01/2025
Closeout	04/01/2027

COST ESTIMATE

Cost Estimate Class:	**Class 1 (-3% to +15%)**
PrePlanning	$0
PER	$240,158
Design	$1,365,380
PreConstruction	$43,170
Construction	$10,826,831
Closeout	$0
Est. Program Cost	**$12,475,539**
Contingency Budget	$899,071
Est. Project Costs	**$13,374,610**



VP014022

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

Legend

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

0 305 610 1,220 1,830 2,440 Feet

N
W E
S

VP014022

Sanitary Sewer Replacement 1950 - Part 2

HRSD

CIP Location

Sanitary Sewer Replacement 1950-Part 2

PR_VP014022

System: VIP
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	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
$29,799	$25,073	$4,363	$364	$0	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project is to design and construct a force main to replace the 850 feet cast iron discharge force main SF-155 Sanitary Sewer Project 1950 12-inch Force Main. This project will also replace 2,900 feet 18-inch gravity line 1960 SG-153 and replace 2,700 feet 24-inch 1960 SG-149.

PROJECT JUSTIFICATION

This project will evaluate and implement the replacement of HRSD force main and gravity sewer between Ferebee Avenue Pump Station and Park Avenue Pump Station.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

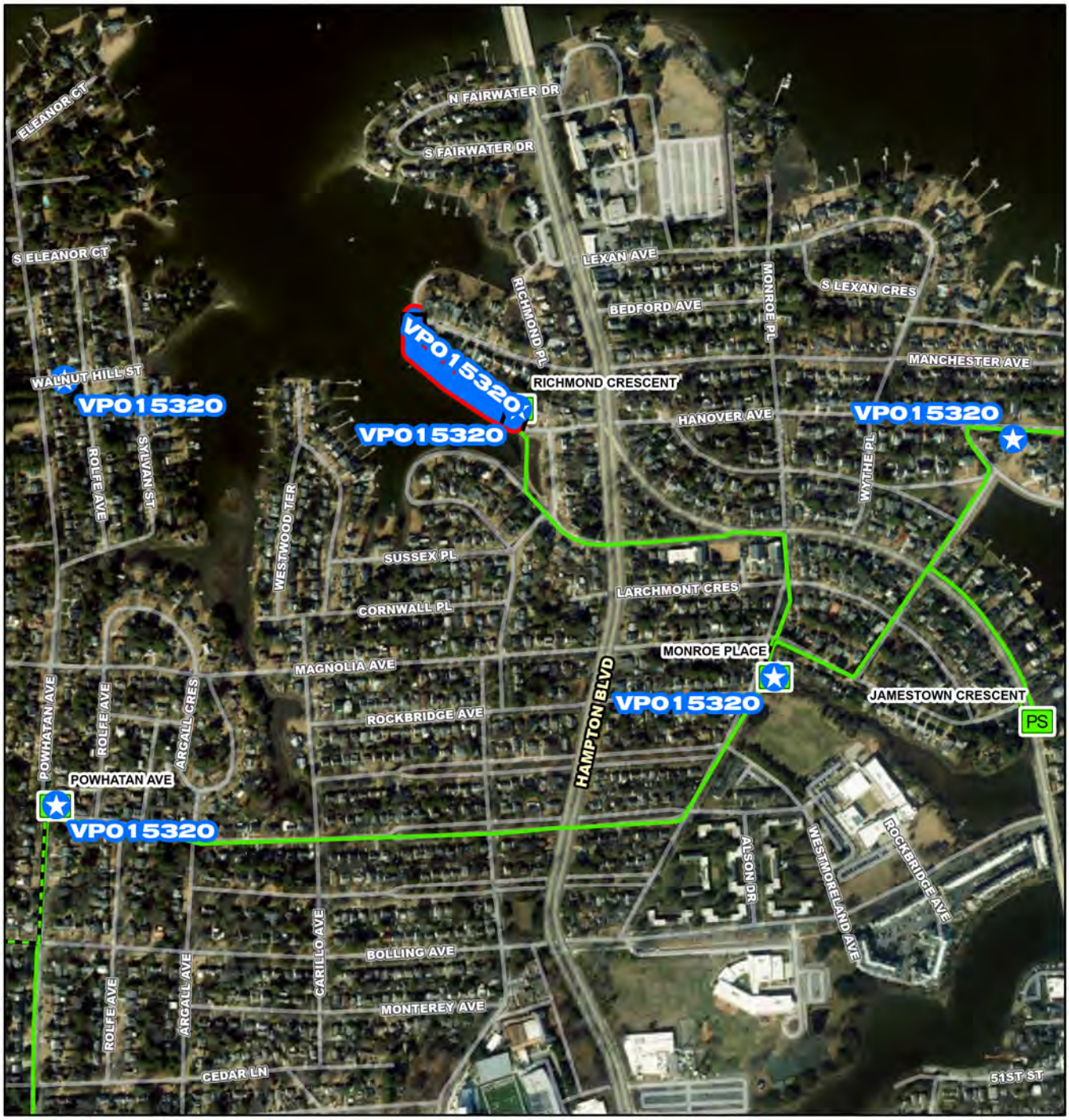
Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Nick Taschner
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	07/01/2015
PER	05/23/2017
Design Delay	12/03/2019
Design	01/03/2020
Bid Delay	01/03/2022
PreConstruction	09/14/2022
Construction	02/01/2023
Closeout	08/01/2027

COST ESTIMATE

Cost Estimate Class:	**Class 1 (-3% to +15%)**
PrePlanning	$0
PER	$0
Design	$171,990
PreConstruction	$32,001
Construction	$29,594,645
Closeout	$0
Est. Program Cost	**$29,798,635**
Contingency Budget	$1,727,454
Est. Project Costs	**$31,526,089**



VP015320

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

Legend

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

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

VP015320

Larchmont Area Sanitary Sewer Improvements

HRSD

N
W E
S

CIP Location

Larchmont Area Sanitary Sewer Improvements

PR_VP015320

System: VIP
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	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
$54,894	$34,660	$13,422	$6,745	$67	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project involves rehabilitation of three existing pump stations, the design and construction of two new pump stations, and the design and construction of 6-inch force mains and 8- and 10-inch gravity mains and appurtenances. The three rehabilitated pump stations include Powhatan Avenue PS #122, Richmond Crescent PS #124, and Jamestown Crescent PS #142. The new infrastructure will replace Monroe Place PS #114, Hanover Ave PS #141 and associated gravity and force mains.

PROJECT JUSTIFICATION

This project was initially identified by HRSD as part of a condition assessment program to address aging infrastructure concerns related to structural, electrical, and pump performance operation. The project was also identified to mitigate the risks from tidal flooding during wet weather conditions and from sea level rise due to climate change. Hazen & Sawyer were commissioned to perform the comprehensive study on behalf of HRSD. Elements of the Project identified under the VIP-R10 in HRSD's EPA Rehabilitation Action Plan Phase 2 will need to reach Substantial Completion by May 5, 2027.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Kayla McCoy
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	06/02/2019
PER	06/01/2020
Design Delay	02/21/2025
Design	06/15/2021
Bid Delay	11/09/2022
PreConstruction	12/07/2022
Construction	01/01/2023
Closeout	01/01/2028

COST ESTIMATE

Cost Estimate Class:	**Class 1 (-3% to +15%)**
PrePlanning	$0
PER	$394,343
Design	$9,477,602
PreConstruction	$0
Construction	$44,792,164
Closeout	$230,000
Est. Program Cost	**$54,894,109**
Contingency Budget	$3,798,546
Est. Project Costs	**$58,692,655**

VP015410

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

Legend

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

0 25 50 100 150 200 Feet

N
W E
S

CIP Location

VP015410

City Park Pump Station (PS 106) Replacement

HRSD

City Park Pump Station (PS 106) Replacement

PR_VP015410

System: VIP
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	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
$10,001	$9,685	$316	$0	$0	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project will construct a new HRSD City Park Pump Station to replace the old existing pump station.

PROJECT JUSTIFICATION

This project will address aging infrastructure pertaining to the condition of the wet wells, pumps, motors, controls, appurtenances, and emergency generator/pump for the facilities. The pumps, motors, and controls are nearing the end of their useful life and replacement parts are not available.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

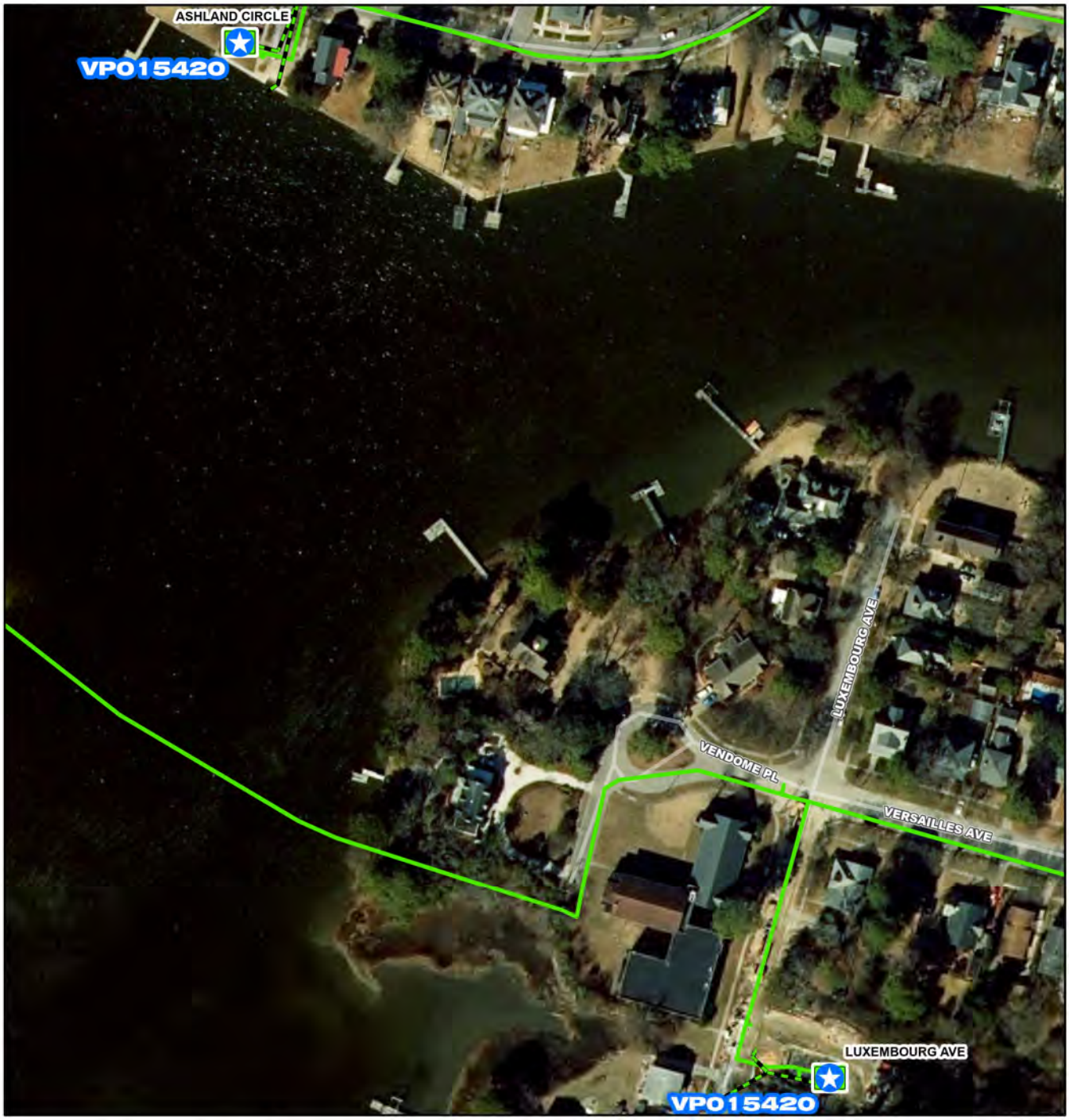
Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Phil Hubbard
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	
PER	07/03/2023
Design Delay	07/03/2023
Design	07/03/2023
Bid Delay	07/03/2023
PreConstruction	07/03/2023
Construction	08/01/2024
Closeout	08/01/2026

COST ESTIMATE

Cost Estimate Class:	**Class 1 (-3% to +15%)**
PrePlanning	$0
PER	$0
Design	$0
PreConstruction	$0
Construction	$10,000,000
Closeout	$1,000
Est. Program Cost	**$10,001,000**
Contingency Budget	$560,000
Est. Project Costs	**$10,561,000**



VP015420

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

Legend

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

0 55 110 220 330 440 Feet

VP015420

Luxembourg Pump Station (PS 113) Replacement and Ashland Sewer Extension

HRSD

N
W E
S

CIP Location

Luxembourg Pump Station (PS 113) Replacement and Ashland Sewer Extension

PR_VP015420

System: VIP
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	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
$27,921	$15,169	$6,954	$5,797	$1	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project will construct a new Luxembourg Pump Station (PS) to replace the old existing pump station. Also, the existing HRSD Ashland Circle Pump Station will be demolished and replaced with sanitary sewer. The new sanitary sewer will be installed from the existing Ashland Circle PS to the new Luxembourg PS.

PROJECT JUSTIFICATION

The PS at Luxembourg will be constructed to resemble a home just to the right of the PS. The PS will be completed prior to the gravity sewer to Ashland Circle being completed. This entire Project is part of the Consent Decree Rehabilitation Action Plan II with a completion date of May 5, 2027.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

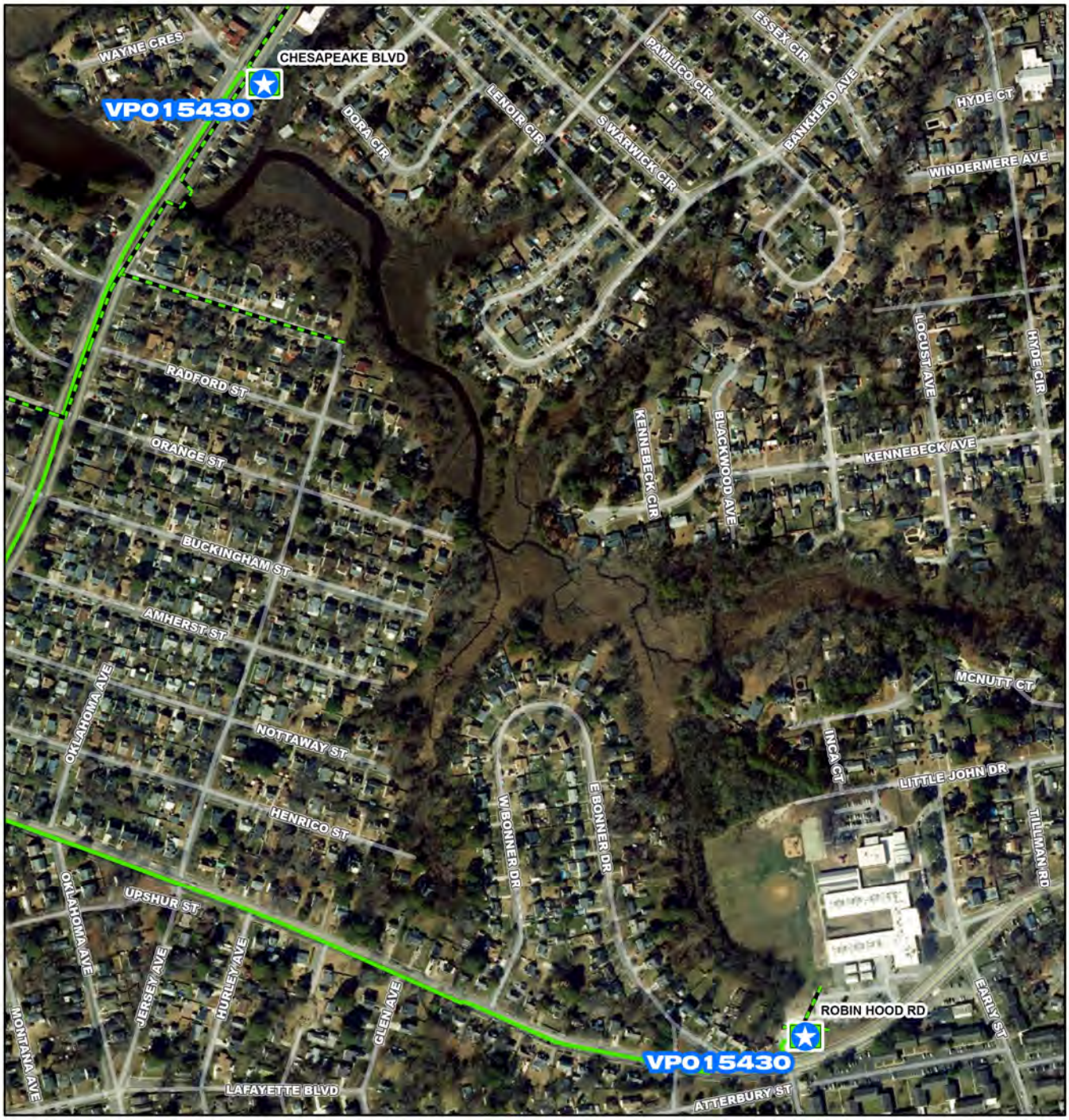
Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Phil Hubbard
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	
PER	09/01/2023
Design Delay	09/01/2023
Design	09/01/2023
Bid Delay	09/01/2023
PreConstruction	09/01/2023
Construction	08/01/2024
Closeout	05/01/2028

COST ESTIMATE

Cost Estimate Class:	**Class 1 (-3% to +15%)**
PrePlanning	$0
PER	$0
Design	$0
PreConstruction	$0
Construction	$27,918,053
Closeout	$3,000
Est. Program Cost	**$27,921,053**
Contingency Budget	$1,396,000
Est. Project Costs	**$29,317,053**



VP015430

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

Legend

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

0 165 330 660 990 1,320 Feet

N
W E
S

CIP Location

VP015430

Chesapeake Boulevard Pump Station (PS 105) Replacement and Robin Hood Road Pump Station (PS 167) Rehabilita

HRSD

Chesapeake Blvd PS (PS 105) Replacement & Robin Hood Rd Pump Station (PS 167) Rehabilitation

PR_VP015430

System: VIP
Type: Pump Stations

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
$22,200	$1,000	$10,128	$10,128	$936	$8	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project will construct a new Chesapeake Boulevard Pump Station (PS) to replace the old existing pump station. Also, HRSD has acquired Norfolk pump station #57, which has been renamed to HRSD PS 167 / Robinhood Road PS . This project will replace all of the existing equipment in PS #57 and the new equipment will be installed in according with HRSD's standards.

PROJECT JUSTIFICATION

This project will address aging infrastructure pertaining to the condition of the wet wells, pumps, motors, controls, appurtenances, and emergency generator/pump for the facilities. The pumps, motors, and controls are nearing the end of their useful life and replacement parts are not available.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

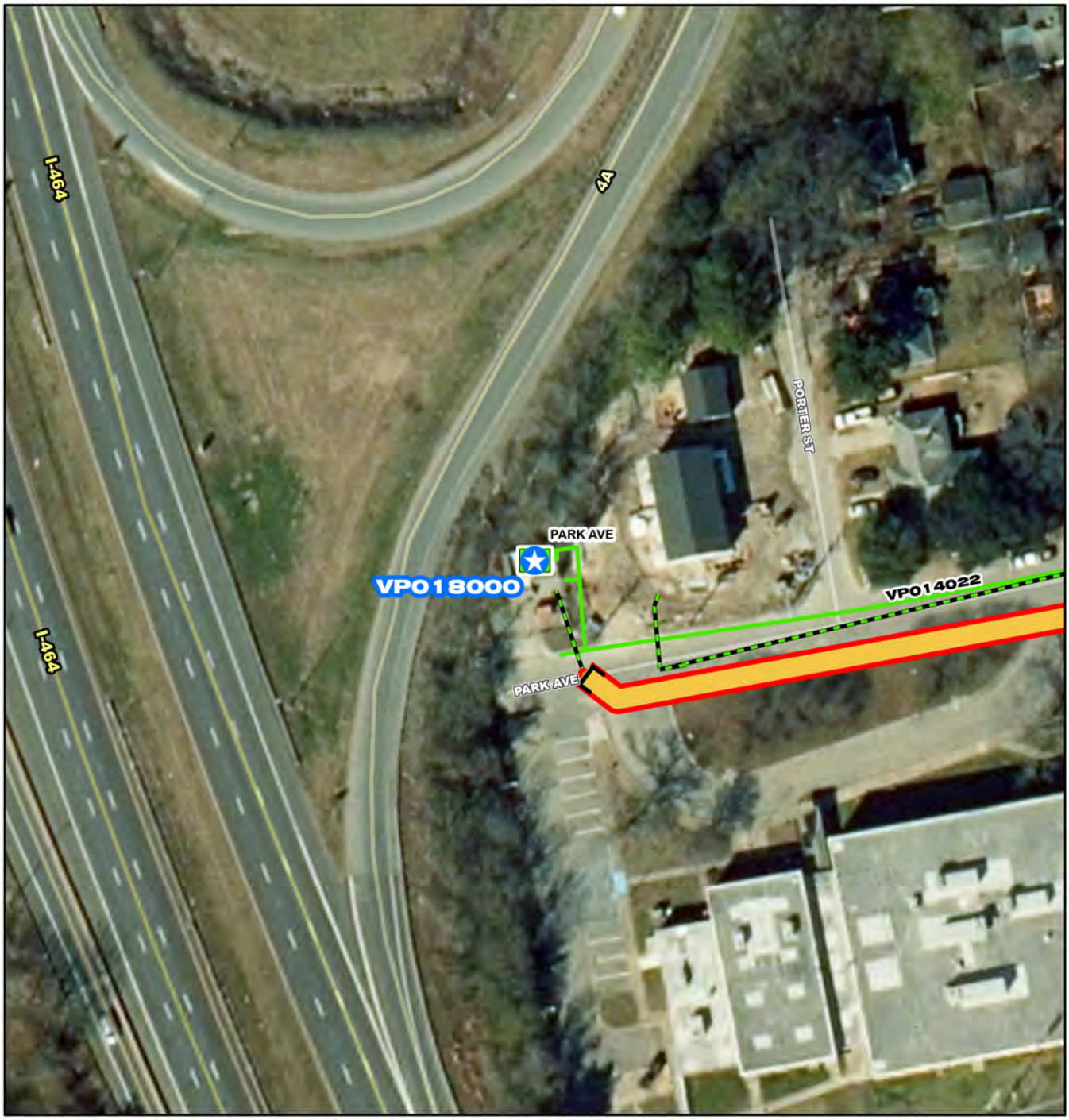
Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: Rebecca Currall
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	
PER	01/01/2019
Design Delay	05/01/2020
Design	08/01/2024
Bid Delay	05/01/2026
PreConstruction	05/01/2026
Construction	07/01/2026
Closeout	08/01/2028

COST ESTIMATE

Cost Estimate Class:	**Class 1 (-3% to +15%)**
PrePlanning	$0
PER	$21,345
Design	$953,000
PreConstruction	$26,000
Construction	$21,100,000
Closeout	$100,000
Est. Program Cost	**$22,200,345**
Contingency Budget	$1,055,000
Est. Project Costs	**$23,255,345**



VP018000

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

Legend

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

0 25 50 100 150 200 Feet

VP018000

Park Avenue Pump Station Replacement

HRSD

N
W E
S

CIP Location

Park Avenue Pump Station Replacement

PR_VP018000

System: VIP
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	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
$16,521	$16,350	$170	$0	$0	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project is to design and construct a replacement pump station for the existing 1922 Park Avenue Pump Station (PS), based on the recommendations of the Park Avenue and Ferebee Avenue Pump Station Study (VP011010). This project is to include installation of an emergency generator/pump and address the replacement/rehabilitation of 50 linear feet (LF) of the 24-inch gravity influent line.

PROJECT JUSTIFICATION

This project will evaluate and implement the replacement of Park Avenue Pump Station. This facility was inspected in August 2013, as part of a Condition Assessment Program administered by Brown and Caldwell. Park Avenue Pump Station was recommended for replacement and/or upgrades under Level 2 in the Rehabilitation program. This facility experiences operational issues related to aging equipment and structure. Park Avenue Pump Station currently receives flows from HRSDs Ferebee Avenue Pump Station in addition to flow from several city pump stations. An in-house hydraulic evaluation in 2014 identified several alternatives for revising the alignment and connectivity (to gravity or to the force main system) of the Ferebee Avenue Pump Station effluent force main, which may significantly impact the future capacity needs and design of the Park Avenue Pump Station. Preliminary engineering evaluations of these two stations will be conducted jointly.

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	07/01/2015
PER	05/22/2017
Design Delay	12/03/2019
Design	01/03/2020
Bid Delay	03/11/2022
PreConstruction	03/14/2022
Construction	06/30/2022
Closeout	08/01/2026

COST ESTIMATE

Cost Estimate Class:	**Class 1 (-3% to +15%)**
PrePlanning	$0
PER	$255,572
Design	$1,075,036
PreConstruction	$36,479
Construction	$15,119,537
Closeout	$34,144
Est. Program Cost	**$16,520,768**
Contingency Budget	$1,714,820
Est. Project Costs	**$18,235,588**

VP018301

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

Legend

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

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

N
W E
S

CIP Location

VP018301

VIP Service Area I-I Reduction Phase I (PORTS)

HRSD

VIP Service Area I-I Reduction Phase I (PORTS)

PR_VP018301

System: VIP
Type: Locality and Private Property

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
$11,145	$1,703	$5,721	$3,720	$0	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

PORT-01 Comprehensive I/I Reduction Plan; PORT-02 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: Revenue Bond

CONTACTS

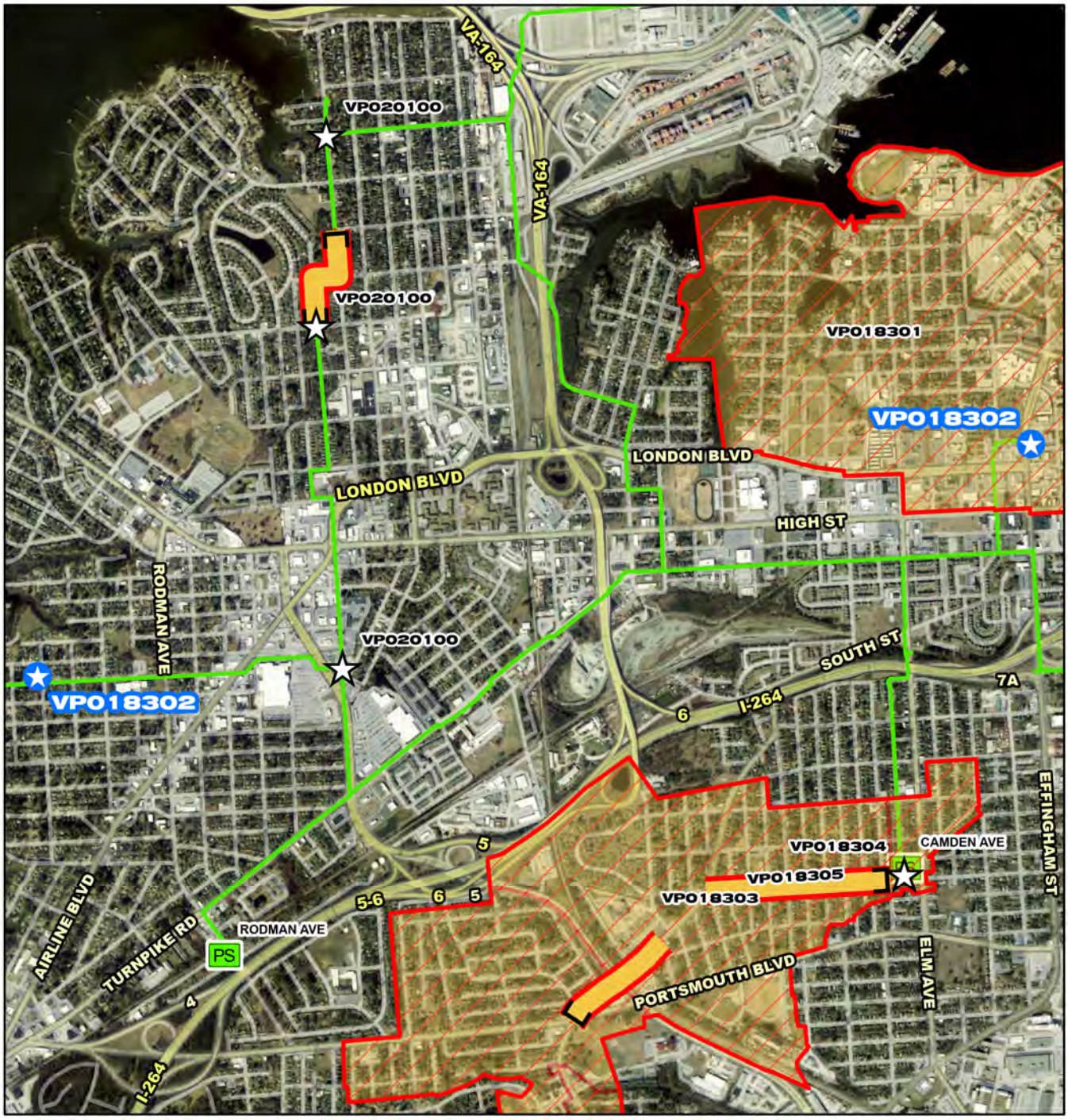
Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Nick Taschner
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	08/02/2021
PER	05/24/2022
Design Delay	
Design	02/01/2026
Bid Delay	10/01/2026
PreConstruction	10/01/2026
Construction	10/01/2026
Closeout	01/01/2028

COST ESTIMATE

Cost Estimate Class:	**Class 1 (-3% to +15%)**
PrePlanning	$42,506
PER	$1,472,335
Design	$329,832
PreConstruction	$0
Construction	$9,300,000
Closeout	$0
Est. Program Cost	**$11,144,673**
Contingency Budget	$0
Est. Project Costs	**$11,144,673**



VP018302

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

Legend

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

0 650 1,300 2,600 3,900 5,200 Feet

N
W E
S

CIP Location

VP018302

Portsmouth Pump Station Upgrades (VIP-HPP-04B)

HRSD

Portsmouth Pump Station Upgrades (VIP-HPP-04B)

PR_VP018302

System: VIP
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	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
$1,342	$0	$0	$0	$0	$0	$0	$0	$0	$0	$369	$973

PROJECT DESCRIPTION

Portsmouth Pump Station Upgrades PS002 and PS008.

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

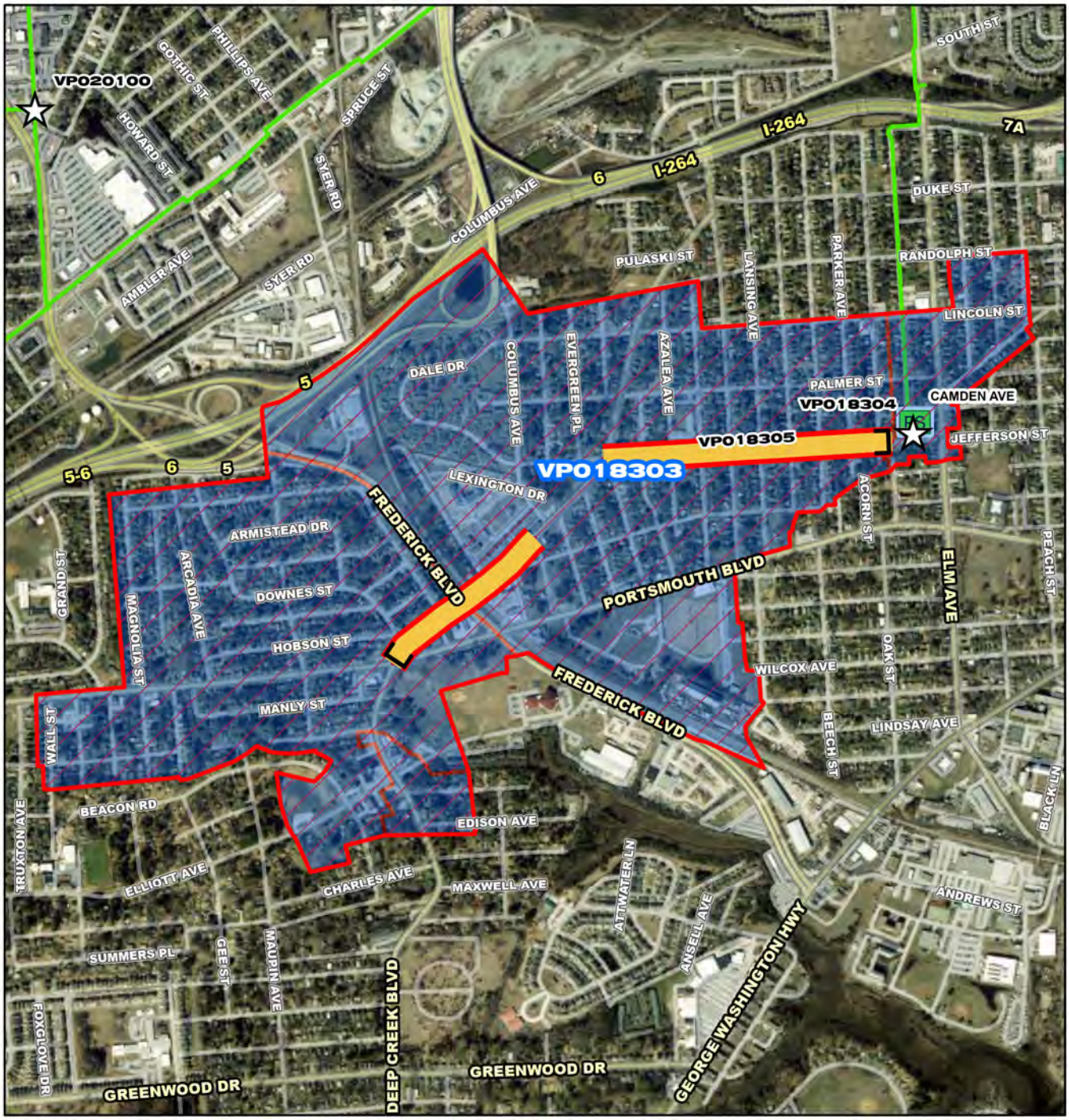
Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: John Dano
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	08/01/2034
PER	02/01/2035
Design Delay	09/01/2035
Design	09/01/2035
Bid Delay	07/01/2036
PreConstruction	07/01/2036
Construction	10/01/2036
Closeout	12/01/2037

COST ESTIMATE

Cost Estimate Class:	**Class 10**
PrePlanning	$0
PER	$516,280
Design	$825,968
PreConstruction	$309,688
Construction	$11,799,468
Closeout	$0
Est. Program Cost	**$13,451,403**
Contingency Budget	$2,949,868
Est. Project Costs	**$16,401,271**



VP018303

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

Legend

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

0 445 890 1,780 2,670 3,560 Feet

N W E S

CIP Location

VP018303

VIP Service Area I-I Reduction Phase III (PORTS)

HRSD

VIP Service Area I-I Reduction Phase III (PORTS)

PR_VP018303

System: VIP
Type: Locality and Private Property

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
$2,910	$1,602	$828	$480	$0	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

PORT-04 General I/I Reduction Plan; PORT-04-LOP65-1 Data-Driven I/I Reduction Plan; PORT-04-LOP65-2 Data-Driven I/I Reduction Plan; PORT-04-LOP65-3 Data-Driven I/I Reduction Plan. Currently, Brown and Caldwell is performing comprehensive flow monitoring within these areas. Once flow monitoring is complete we will transition to I/I reduction.

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: Revenue Bond

CONTACTS

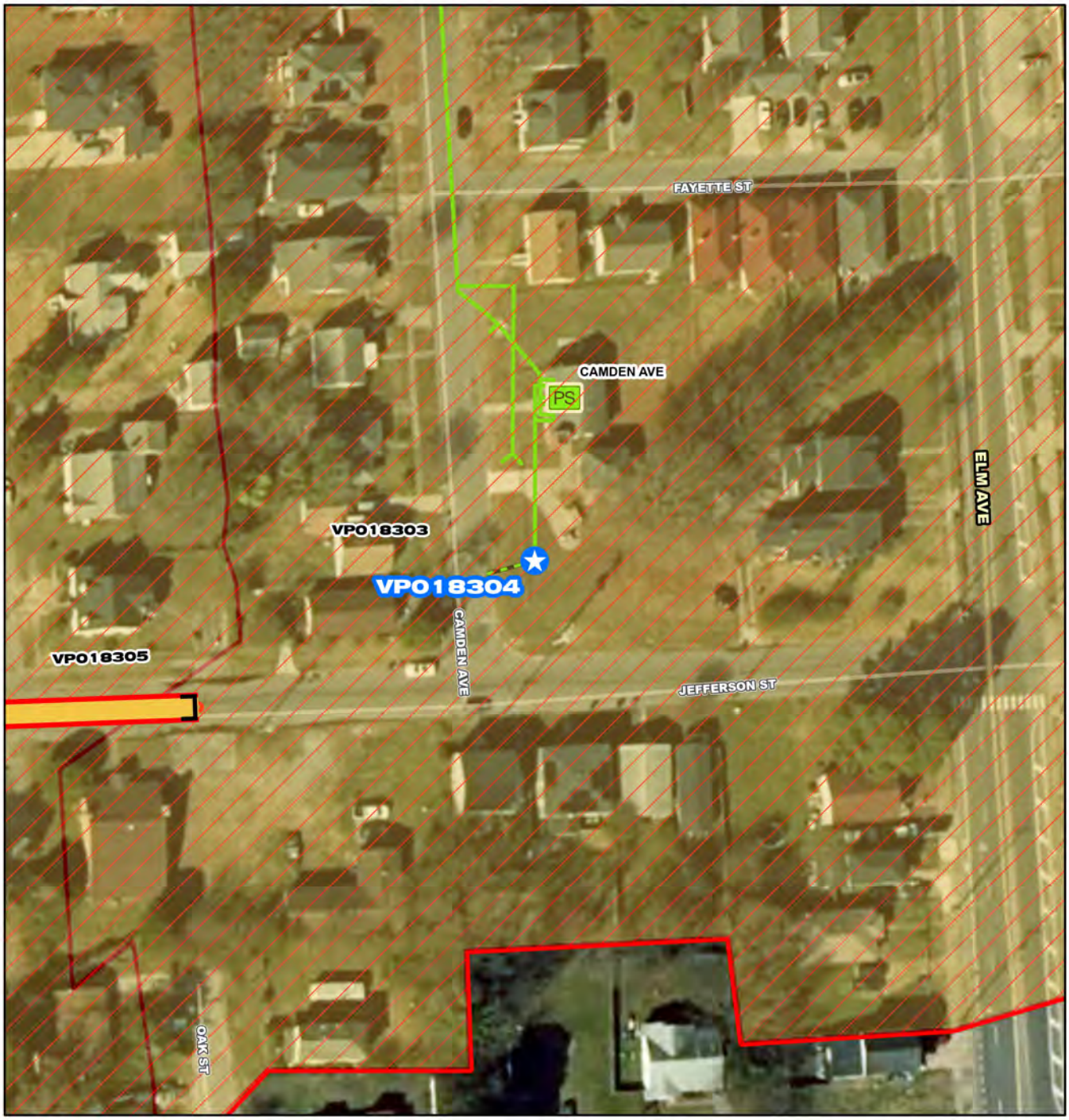
Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Nick Taschner
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	08/02/2021
PER	05/24/2022
Design Delay	10/07/2021
Design	02/01/2026
Bid Delay	10/07/2021
PreConstruction	10/01/2026
Construction	10/01/2026
Closeout	01/01/2028

COST ESTIMATE

Cost Estimate Class:	**Class 1 (-3% to +15%)**
PrePlanning	$51,506
PER	$1,405,818
Design	$252,542
PreConstruction	$0
Construction	$1,200,000
Closeout	$0
Est. Program Cost	**$2,909,866**
Contingency Budget	$0
Est. Project Costs	**$2,909,866**



VP018304

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

Legend

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

0 25 50 100 150 200 Feet

VP018304

Camden Avenue Pump Station Upgrades (VIP-HPP-04D)

HRSD

N
W E
S

CIP Location

Camden Avenue Pump Station Upgrades (VIP-HPP-04D) PR_VP018304

System: VIP
Type: Pump Stations

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
$7,000	$0	$0	$0	$0	$215	$351	$2,207	$4,226	$0	$0	$0

PROJECT DESCRIPTION

Camden Avenue Pump Station Upgrade (SS-PS-146).

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	09/03/2029
PER	03/04/2030
Design Delay	08/02/2030
Design	08/02/2030
Bid Delay	10/03/2031
PreConstruction	10/06/2031
Construction	01/02/2032
Closeout	07/04/2033

COST ESTIMATE

Cost Estimate Class:	**Class 10**
PrePlanning	$0
PER	$269,352
Design	$378,155
PreConstruction	$13,034
Construction	$6,339,720
Closeout	$0
Est. Program Cost	**$7,000,261**
Contingency Budget	$1,400,099
Est. Project Costs	**$8,400,361**

VP018305

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

Legend

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

0 220 440 880 1,320 1,760 Feet

N W E S

CIP Location

VP018305

Camden Avenue Gravity Improvements (VIP-HPP-04E)

HRSD

Camden Avenue Gravity Improvements (VIP-HPP-04E)

PR_VP018305

System: VIP
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	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
$8,107	$0	$0	$0	$0	$101	$314	$1,867	$3,884	$1,942	$0	$0

PROJECT DESCRIPTION

Camden Avenue gravity main (GM) capacity improvements: Upgrade 1,670 linear feet (LF) of 12-inch GM to 15-inch GM; Upgrade 2,170 LF of 17-inch GM to 21-inch GM and 370 LF of 15-inch GM to 18-inch 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: Revenue Bond

CONTACTS

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

PROPOSED SCHEDULE START DATE

PrePlanning	01/01/2030
PER	01/01/2030
Design Delay	01/02/2031
Design	01/02/2031
Bid Delay	01/02/2032
PreConstruction	01/02/2032
Construction	02/02/2032
Closeout	01/02/2034

COST ESTIMATE

Cost Estimate Class:	**Class 10**
PrePlanning	$0
PER	$201,141
Design	$425,946
PreConstruction	$35,496
Construction	$7,444,593
Closeout	$0
Est. Program Cost	**$8,107,176**
Contingency Budget	$1,656,457
Est. Project Costs	**$9,763,633**

VP018400

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

Legend

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

0 25 50 100 150 200 Feet

N
W E
S

CIP Location

VP018400

State Street Pressure Reducing Station and Offline Storage (VIP-HPP-05)

HRSD

State Street Pressure Reducing Station and Offline Storage (VIP-HPP-05)

PR_VP018400

System: VIP
Type: Offline Storage

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	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
$2,030	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$2,030

PROJECT DESCRIPTION

Install new Pressure Reducing Station (PRS) with 35 feet of assistance - New Location; Install new 2.3 MG storage tank.

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

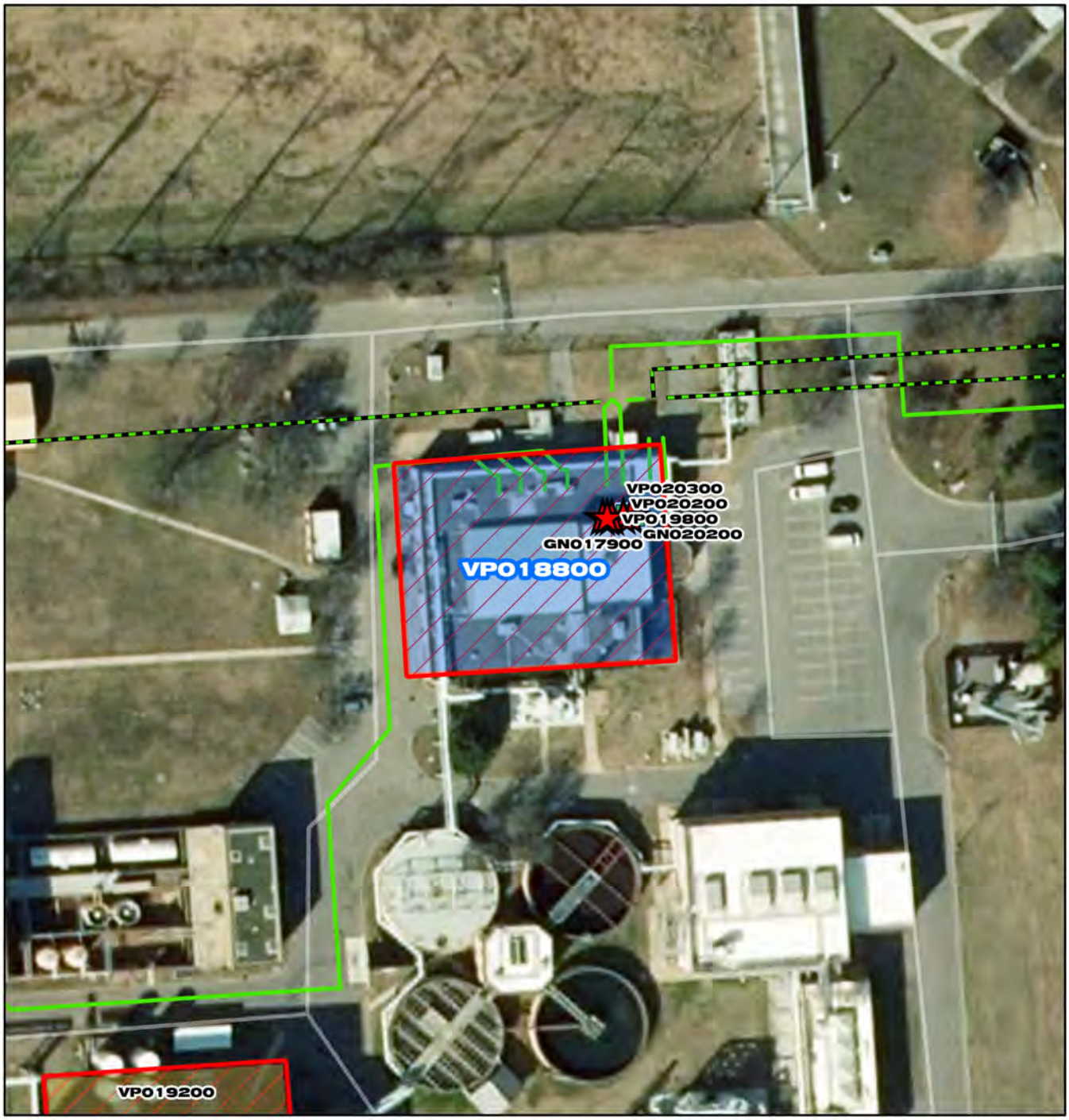
Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: John Dano
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	07/02/2035
PER	08/02/2035
Design Delay	01/02/2036
Design	01/02/2036
Bid Delay	11/03/2037
PreConstruction	11/03/2037
Construction	02/02/2038
Closeout	11/02/2039

COST ESTIMATE

Cost Estimate Class:	**Class 10**
PrePlanning	$1,303,395
PER	$310,208
Design	$1,526,276
PreConstruction	$28,674
Construction	$20,983,361
Closeout	$32,585
Est. Program Cost	**$24,184,501**
Contingency Budget	$4,948,445
Est. Project Costs	**$29,132,946**



VP018800

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

Legend

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

0 25 50 100 150 200 Feet

VP018800

Virginia Initiative Plant Administration Building Renovation

HRSD

N
W E
S

CIP Location

Virginia Initiative Plant Administration Building Renovation

PR_VP018800

System: VIP
Type: Facilities, Buildings and Capital Equipment

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
$10,353	$2,710	$3,528	$3,528	$588	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project is to renovate the existing 1990 and 1974 administration areas and construct a new maintenance storage building.

PROJECT JUSTIFICATION

This project will provide additional administration offices, lunch room, conference room, bathrooms and unisex bathrooms for the Administration Building and Solids Treatment and Solids Handling. The project also includes construction of a new maintenance storage building.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

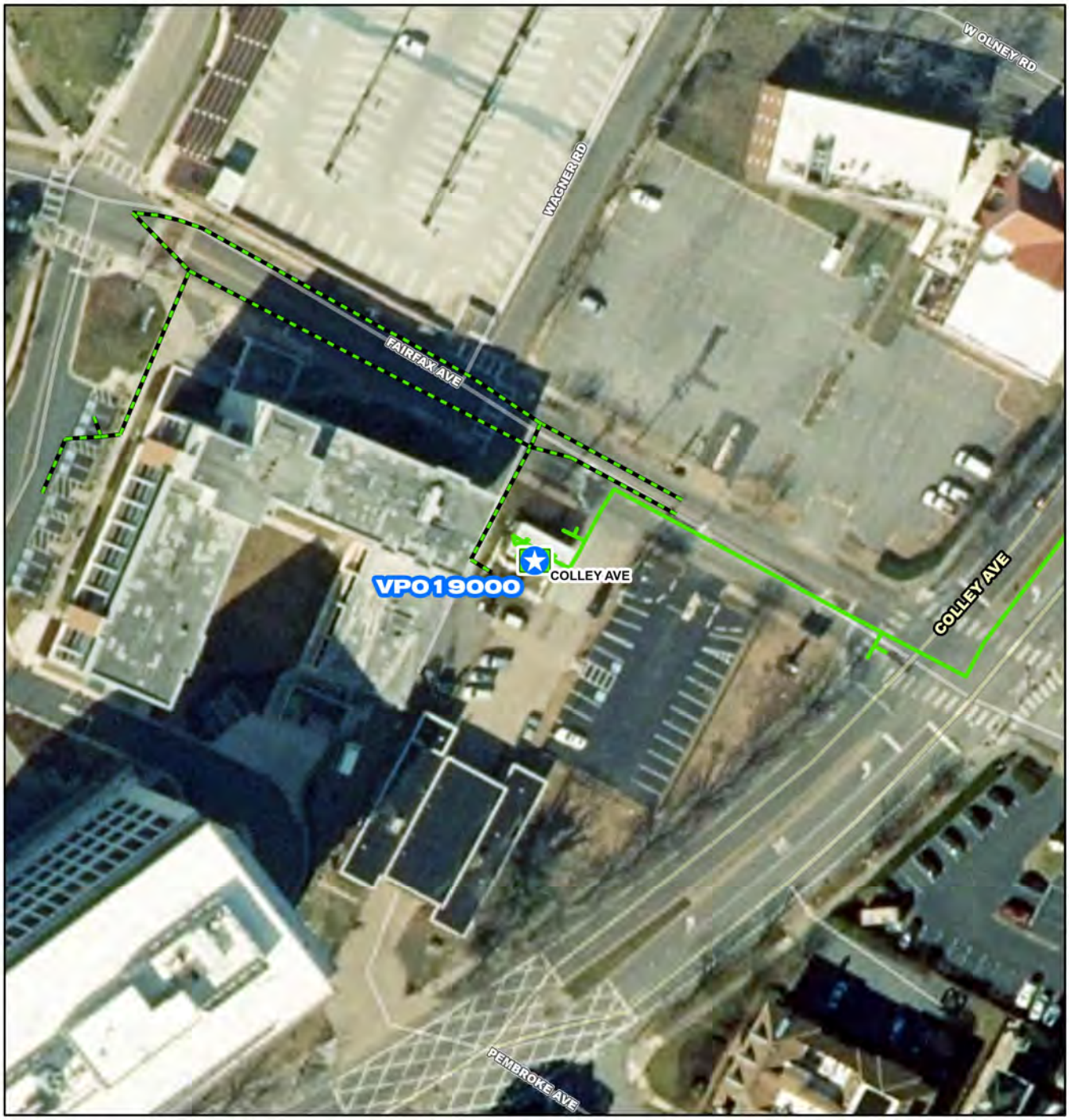
Contacts-Requesting Dept: Operations-Treatment
Contacts-Dept Contacts: Tim Marsh
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	11/28/2017
PER	11/01/2017
Design Delay	11/22/2017
Design	09/27/2018
Bid Delay	12/31/2018
PreConstruction	09/09/2019
Construction	09/01/2025
Closeout	09/01/2028

COST ESTIMATE

Cost Estimate Class:	**Class 1 (-3% to +15%)**
PrePlanning	$0
PER	$127,273
Design	$492,797
PreConstruction	$0
Construction	$9,727,743
Closeout	$5,000
Est. Program Cost	**$10,352,813**
Contingency Budget	$1,054,177
Est. Project Costs	**$11,406,990**



VP019000

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

Legend

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

0 25 50 100 150 200 Feet

VP019000

Colley Ave Pump Station Pump Replacement

HRSD

N
W E
S

CIP Location

Colley Avenue Pump Station Pump Replacement

PR_VP019000

System: VIP
Type: Pump Stations

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
$4,533	$473	$3,370	$687	$3	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project will replace the existing extended shaft pumps at Colley Avenue Pump Station with new constant speed dry pit submersible pumps. Additional efforts include replacement of the emergency backup pump, a new emergency pump connection and meter vault, replacement of the concrete driveway, HVAC upgrades, and a new sink in the dry well. Architectural updates will also be made to help the station blend with the surrounding area, and make the station more flood resistant.

PROJECT JUSTIFICATION

The existing pumps at the Colley Avenue Pump Station were installed circa 1970. Two of the three pumps are Allis-Chalmers pumps, which are no longer manufactured, making spare parts very difficult to find. A recent drawdown test performed in June 2020 showed that the two smaller pumps are operating at 70% of their original hydraulic capacity, and the large pump is operating at approximately 45% of its capacity. In addition, the smaller pumps are undersized for wet weather head conditions, forcing the third pump to be used as both the lead and wet weather pump. As a result, a 6-inch emergency bypass pump has been installed at the station to provide additional wet weather pumping capacity. Due to the loss of hydraulic efficiency and their age, these pumps cost approximately $10,000 per year more in power, labor and maintenance costs than properly sized new pumps. In addition, replacing the pumps would allow the Godwin pump to be removed, improving the aesthetics of the station, and allowing this pump to be used elsewhere in the system.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Lyndsey Davis
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	04/01/2021
PER	06/28/2021
Design Delay	05/01/2023
Design	10/01/2023
Bid Delay	05/01/2026
PreConstruction	05/01/2026
Construction	09/01/2026
Closeout	09/01/2027

COST ESTIMATE

Cost Estimate Class:	**Class 2 (-5% to +20%)**
PrePlanning	$0
PER	$39,588
Design	$428,020
PreConstruction	$10,000
Construction	$4,038,348
Closeout	$17,045
Est. Program Cost	**$4,533,000**
Contingency Budget	$681,800
Est. Project Costs	**$5,214,801**

VP019200

Project Interceptor Line
Project Interceptor Point
Project Location Point
Project Area

Legend

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

0 55 110 220 330 440 Feet

N
W E
S

CIP Location

VP019200

Virginia Initiative Plant Motor Control Center Replacements

HRSD

Virginia Initiative Plant Motor Control Center Replacements

PR_VP019200

System: VIP
Type: Electrical

Driver Category: Aging Infrastructure/Rehabilitation
Project Phase: Pre Planning
Regulatory: None

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
$4,960	$3,922	$1,037	$0	$0	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project is to design and replace five (5) Motor Control Centers (MCC) and a Main Distribution Panel, and variable frequency drives located in the Incinerator Building at Virginia Initiative Plant (VIP) installed in the 1970's. This project will also replace a four (4) 1980's vintage MCC and Switchgear located in the Blower Building. The electrical distribution equipment has reached the end of their useful life. Two new 2000 kVA transformers will be installed to accommodate future blowers loads.

PROJECT JUSTIFICATION

During an annual thermographic inspection signs of bus deterioration and heat anomalies were discovered. The MCC's are critical to plant operations. The five MCC's in the incinerator building supply power to the furnace, ID fan, Centrifuges, and Building Services. The MCC located in the Blower Building supplies power to the Blowers, Primary Clarifiers, Grit Tanks, and Chemical Building. This project will increase plant process reliability and improve employee safety by reducing the likelihood of an arc flash event.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Operations-Treatment
Contacts-Dept Contacts: Keith Britt
Contacts-Managing Dept: Operations-E&I

PROPOSED SCHEDULE START DATE

PrePlanning	
PER	07/01/2021
Design Delay	07/01/2021
Design	07/01/2021
Bid Delay	05/02/2022
PreConstruction	05/02/2022
Construction	05/09/2022
Closeout	03/06/2023

COST ESTIMATE

Cost Estimate Class:	**Class 1 (-3% to +15%)**
PrePlanning	$0
PER	$0
Design	$410,894
PreConstruction	$0
Construction	$4,548,900
Closeout	$0
Est. Program Cost	**$4,959,794**
Contingency Budget	$477,634
Est. Project Costs	**$5,437,428**

VP019400

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

Legend

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

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

VP019400

High Priority Projects Round 2
Project 5

HRSD

N
W E
S

CIP Location

High Priority Projects Round 2 Project 5

PR_VP019400

System: VIP
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	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
$18,909	$0	$0	$0	$0	$0	$0	$0	$0	$1,718	$955	$16,236

PROJECT DESCRIPTION

High Priority Project (HPP) Round 2 Project 5 consists of the following Regional Wet Weather Management Plan (RWWMP) Project IDs and general descriptions:
VIP-RWWMP-12 May Avenue Storage Tank
VIP-RWWMP-14 Norfolk City System Improvements
VIP-RWWMP-13 Willoughby Avenue Pump Station Upgrade

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

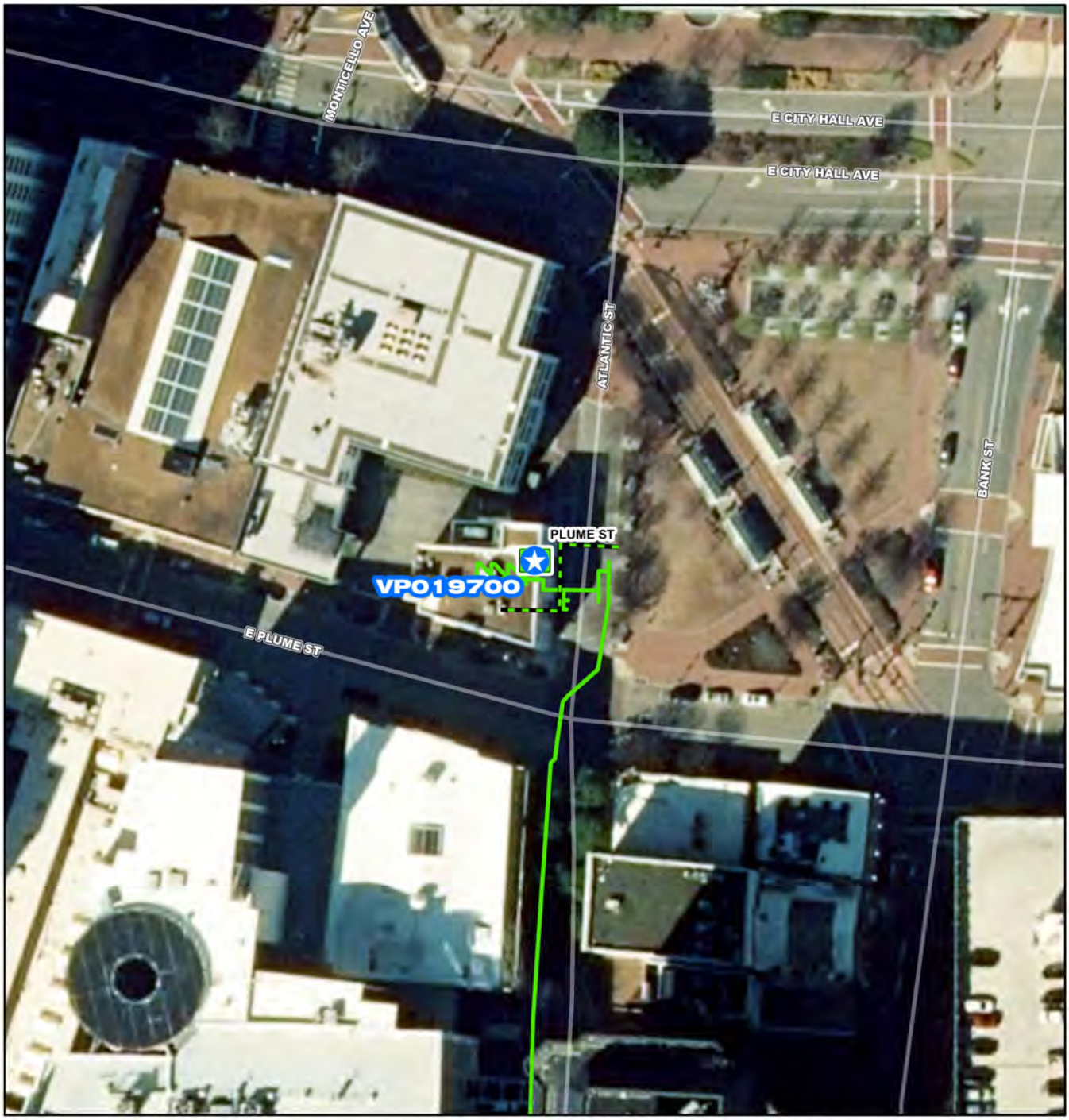
Contacts-Requesting Dept: Engineering
Contacts-Dept Contacts: John Dano
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	07/01/2033
PER	08/02/2033
Design Delay	10/03/2033
Design	06/02/2034
Bid Delay	09/04/2034
PreConstruction	06/04/2035
Construction	07/02/2035
Closeout	05/02/2036

COST ESTIMATE

Cost Estimate Class:	**Class 10**
PrePlanning	$381,818
PER	$954,545
Design	$1,145,455
PreConstruction	$190,909
Construction	$16,227,272
Closeout	$190,909
Est. Program Cost	**$19,090,908**
Contingency Budget	$0
Est. Project Costs	**$19,090,908**



VP019700

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

Legend

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

0 25 50 100 150 200 Feet

VP019700

Plume Street Pump Station Replacement (SS-PS-121)

HRSD

N
W E
S

CIP Location

Plume Street Pump Station Replacement (SS-PS-121) PR_VP019700

System: VIP
Type: Pump Stations

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
$6,298	$350	$568	$653	$3,337	$1,390	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project will address the replacement of a Plume Street Pump Station on a parcel adject to current location.

PROJECT JUSTIFICATION

This station is currently located inside the basement of the Virginia Maritime Association (VMA) at 236 E. Plume Street. This site was identified for a potential CIP project due to the joint ownership of the building, site access, maintenance challenges and safety concerns within the existing station from corrosion and inoperable functions.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

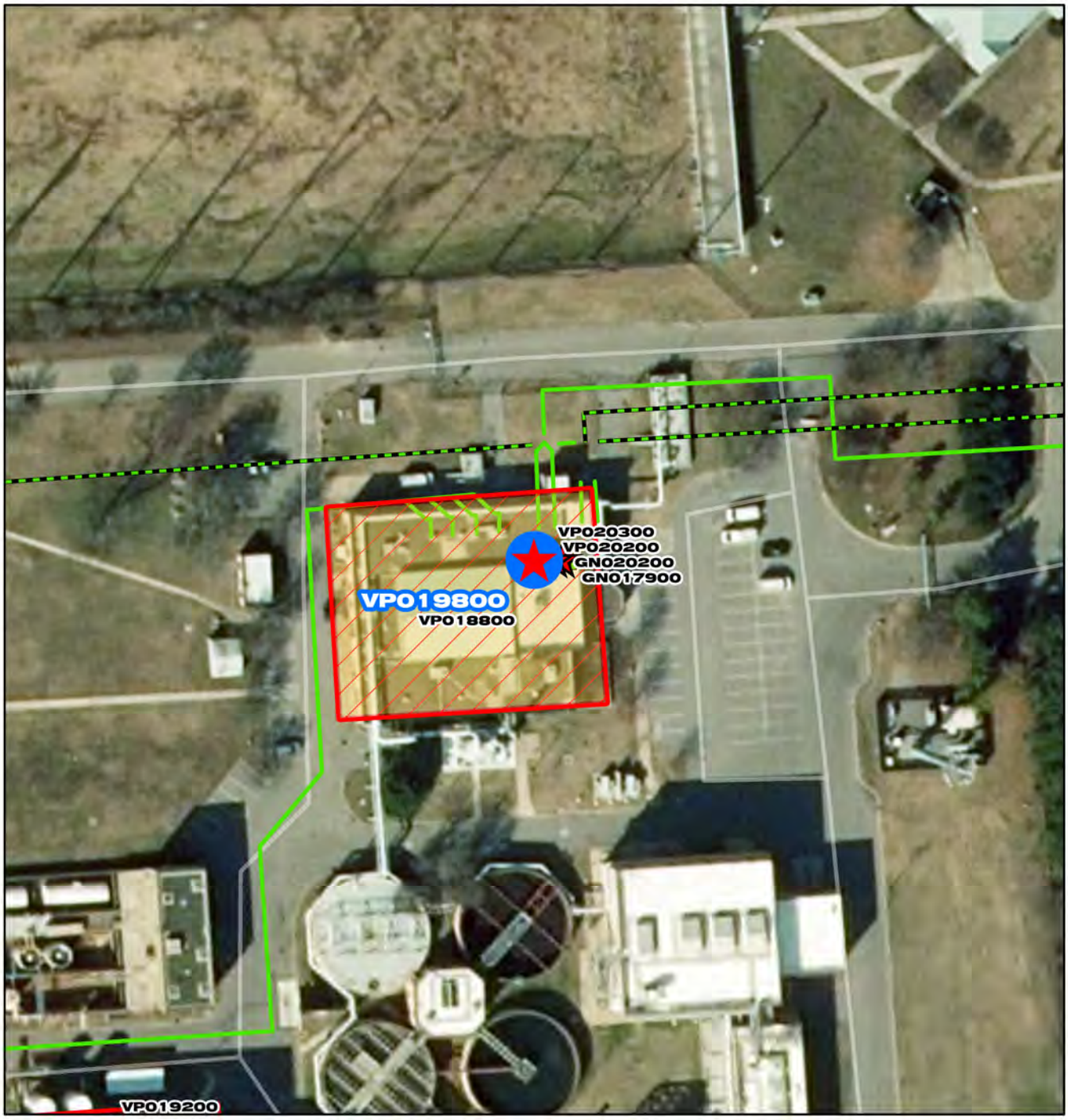
Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Kayla McCoy
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	11/04/2024
PER	02/01/2025
Design Delay	12/01/2026
Design	12/01/2026
Bid Delay	02/01/2028
PreConstruction	02/01/2028
Construction	06/01/2028
Closeout	12/01/2029

COST ESTIMATE

Cost Estimate Class:	**Class 4 (-15% to +50%)**
PrePlanning	$0
PER	$617,233
Design	$600,600
PreConstruction	$75,075
Construction	$5,005,000
Closeout	$0
Est. Program Cost	**$6,297,908**
Contingency Budget	$1,751,750
Est. Project Costs	**$8,049,658**



VP019800

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

Legend

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

0 25 50 100 150 200 Feet

VP019800

Virginia Initiative Plant Aeration Tank and Primary Clarifier Gate Replacement

HRSD

N
W E
S

CIP Location

Virginia Initiative Plant Aeration Tank and Primary Clarifier Gate Replacement

PR_VP019800

System: VIP
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	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
$22,530	$763	$1,517	$3,150	$4,000	$4,000	$4,000	$4,000	$1,075	$25	$0	$0

PROJECT DESCRIPTION

This project will involve replacement of 16 aeration tank slide gates, 18 primary clarifier slide gates, and 6 chlorine contact tank slide gates with new motorized stainless steel slide gates.

PROJECT JUSTIFICATION

The gates are over 34 years old and at the end of their design life. The fiberglass wrap and gate core has been found to be damaged or showing signs of damage at many locations, and they are becoming difficult to operate. Motorizing the gates will allow for more efficient operation and the ability to exercise the gates more frequently, as well as, provide flexibility for control of aerobic volume.

FUNDING TYPE

Funding Type: Cash

CONTACTS

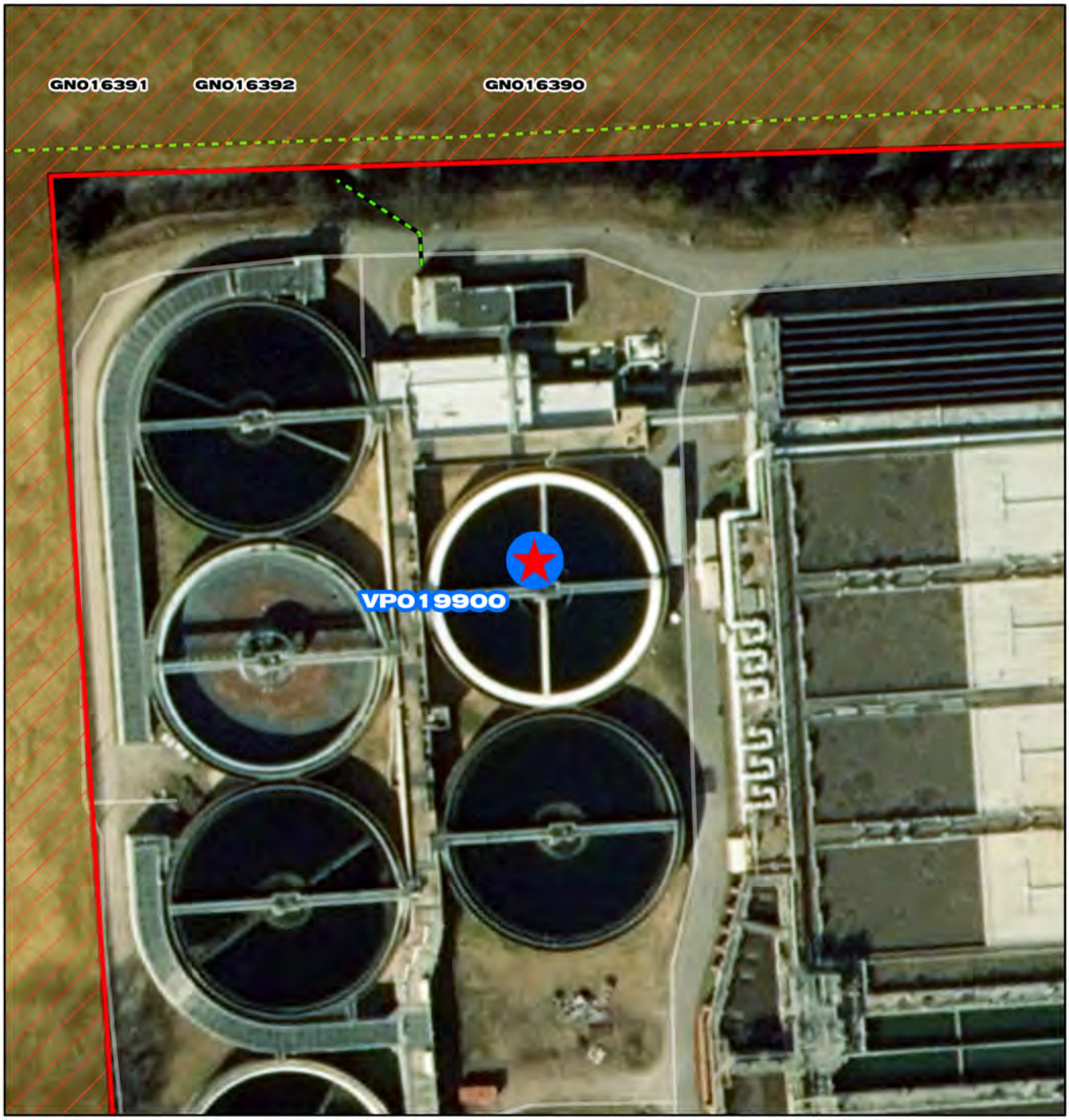
Contacts-Requesting Dept: Operations-Treatment
Contacts-Dept Contacts: Shirley Smith
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	06/01/2025
PER	03/01/2026
Design Delay	03/01/2026
Design	03/01/2026
Bid Delay	06/01/2027
PreConstruction	06/01/2027
Construction	10/01/2027
Closeout	10/01/2032

COST ESTIMATE

Cost Estimate Class:	**Class 5 (-20% to +100%)**
PrePlanning	$230,000
PER	$0
Design	$2,000,000
PreConstruction	$200,000
Construction	$20,000,000
Closeout	$100,000
Est. Program Cost	**$22,530,000**
Contingency Budget	$1,000,000
Est. Project Costs	**$23,530,000**



VP019900

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

Legend

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

0 25 50 100 150 200 Feet

VP019900

Virginia Initiative Plant Secondary Clarifier Solids Removal Mechanism Rehabilitation & Replacement

HRSD

N
W E
S

CIP Location

Virginia Initiative Plant Secondary Clarifier Solids Removal Mechanism Rehab

PR_VP019900

System: VIP
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	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
$6,300	$1,008	$1,512	$1,512	$1,512	$756	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project will be carried out in two phases. Phase 1 will focus on a condition assessment of all major components of the sludge and scum removal mechanisms in secondary clarifiers 1 through 5. During this phase, a cost-based evaluation will be conducted to determine the most economical approach: replacing components with stainless steel, rehabilitating them with new coatings, or implementing a combination of rehabilitation and replacement. Phase 1 will also involve rehabilitation or replacement of secondary clarifier 3 mechanism, which is in poor condition.

PROJECT JUSTIFICATION

Secondary Clarifier mechanisms 1 through 5 were installed in 1987, with all major components constructed from coated carbon steel. While coatings have been reapplied over the years, much of the supporting steel now shows significant deterioration. Additionally, there is growing concern about the feasibility of continuing abrasive blasting, which is essential for properly preparing surfaces for new coatings. In November 2024, a catastrophic failure occurred in the Secondary Clarifier #3 mechanism. Structural members connected to the clarifier drive unit experienced enough torque to completely shear, causing the entire mechanism to collapse. The clarifier drive unit's shear pin was found intact, leading to the conclusion that the failure was likely caused by weakened structural members compromised by corrosion.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Operations-Treatment
Contacts-Dept Contacts: Matt Poe
Contacts-Managing Dept: Operations-Treatment

PROPOSED SCHEDULE START DATE

PrePlanning	07/01/2025
PER	07/01/2025
Design Delay	07/01/2025
Design	07/01/2025
Bid Delay	07/01/2025
PreConstruction	07/01/2025
Construction	11/01/2025
Closeout	01/02/2030

COST ESTIMATE

Cost Estimate Class:	**Class 5 (-20% to +100%)**
PrePlanning	$0
PER	$0
Design	$0
PreConstruction	$0
Construction	$6,300,000
Closeout	$0
Est. Program Cost	**$6,300,000**
Contingency Budget	$0
Est. Project Costs	**$6,300,000**

VP020000

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

Legend

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

0 25 50 100 150 200 Feet

VP020000

Virginia Initiative Plant Fire Suppression System Upgrades

HRSD

N
W E
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CIP Location

Virginia Initiative Plant Fire Suppression System Upgrades

PR_VP020000

System: VIP
Type: Wastewater Treatment

Driver Category: Safety Compliance
Project Phase: Proposed
Regulatory: None

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
$797	$0	$0	$0	$0	$793	$4	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project will address the replacement or upgrades of the fire suppression system at the Virginia Initiative Treatment Plant methanol facility. Currently, the fire suppression system at this plant's methanol facility utilizes an Alcohol Resistant Aqueous Film Forming Foam (AR-AFFF) that contains Perfluoroalkyl and Polyfluoroalkyl (PFAS). Refilling the existing extinguishers with AR-AFFF will no longer be permitted due to the environmental and health concerns associated with PFAS. The new or upgraded systems will utilize a non-PFAS fluorine free foam to extinguish fires.

PROJECT JUSTIFICATION

The current methanol fire suppression systems use AR-AFFF which contains PFAS. AR-AFFF foam is being phased out due to the Federal Forever Chemical Regulation Accountability Act of 2024. If the fire suppression systems is discharged the existing system cannot be re-charged. In the past, some of these fire suppression systems have experienced false alarms and equipment malfunctions causing activation of the AR-AFFF.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

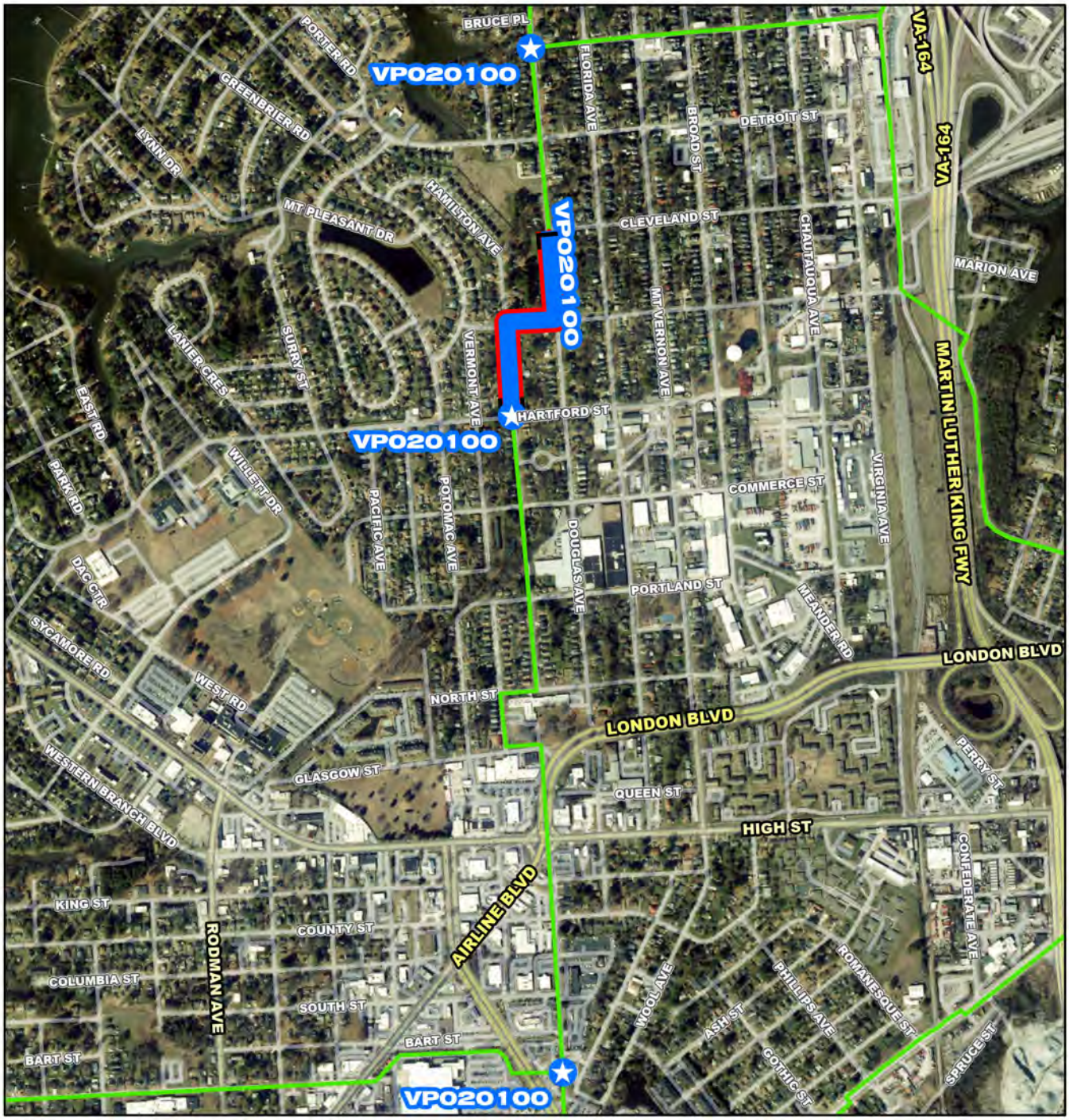
Contacts-Requesting Dept: Operations-Treatment
Contacts-Dept Contacts: Delane Carty
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	12/01/2026
PER	12/01/2026
Design Delay	12/01/2026
Design	12/01/2026
Bid Delay	12/01/2026
PreConstruction	07/01/2029
Construction	10/01/2029
Closeout	07/01/2030

COST ESTIMATE

Cost Estimate Class:	**Class 4 (-15% to +50%)**
PrePlanning	$0
PER	$0
Design	$0
PreConstruction	$15,140
Construction	$778,260
Closeout	$3,785
Est. Program Cost	**$797,185**
Contingency Budget	$199,297
Est. Project Costs	**$996,482**



VP020100

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

Legend

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

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

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CIP Location

VP020100

Douglas Avenue Interceptor Force Main (SF-219) Improvements - Phase I

HRSD

Douglas Avenue Interceptor Force Main (SF-219) Improvements - Phase I

PR_VP020100

System: VIP
Type: Pipelines

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
$7,965	$0	$705	$1,265	$5,989	$6	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project is located at a section of 10,400 linear feet of 30-inch diameter 1940s vintage reinforced concrete pressure pipe interceptor force main, between the intersections of Douglas Avenue and Rolfe Terrace to the north, and Frederic Boulevard and Arlington Place to the south in the City of Portsmouth, which can be referred to as SF-219. This project will include a hydraulic evaluation to assess operational needs of redundancy considerations, and appropriate sizing of any rehabilitation or replacement improvements. Additional valves will be installed to provide diversion and sectional isolation capabilities, supporting further condition assessment and phased rehabilitation planning. Segmental rehabilitation or replacement is planned for approximately 1,600 linear feet of force main between Cleveland Street and Hartford Street. Pipeline improvements are recommended to be completed in multiple phases, with this project being the first phase.

PROJECT JUSTIFICATION

In December 2022, HRSD staff observed that a section of the 82-year old RCPP IFM was partially exposed within green space between Cleveland Street and Woodrow Street raising concerns regarding its vulnerability to damage. A study was commissioned to evaluate the depth of cover issue. The study resulted in identification of a substantial linear footage of pipe with insufficient cover, documentation of the damaged, exposed pipe section and valuable condition assessment information that allowed strategic identification of CIP replacement limits. In addition to the shallow depth of cover issues, wall loss within the proposed project limits ranges from moderate to severe and it is likely that the internal steel reinforcement is exposed. Based on this condition assessment data, it is recommended that the replacement extents cover approximately 1,600 linear feet of 30-inch interceptor force main between Cleveland Street and Hartford Street. This section of interceptor force main currently lacks valving needed for operational isolation and flow diversions in the event of failure and installation of valves at five key locations is recommended to improve constructability, operational flexibility, support future condition assessments and replacement planning, and enable better flow management (divertability) during rehabilitation or replacement activities.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

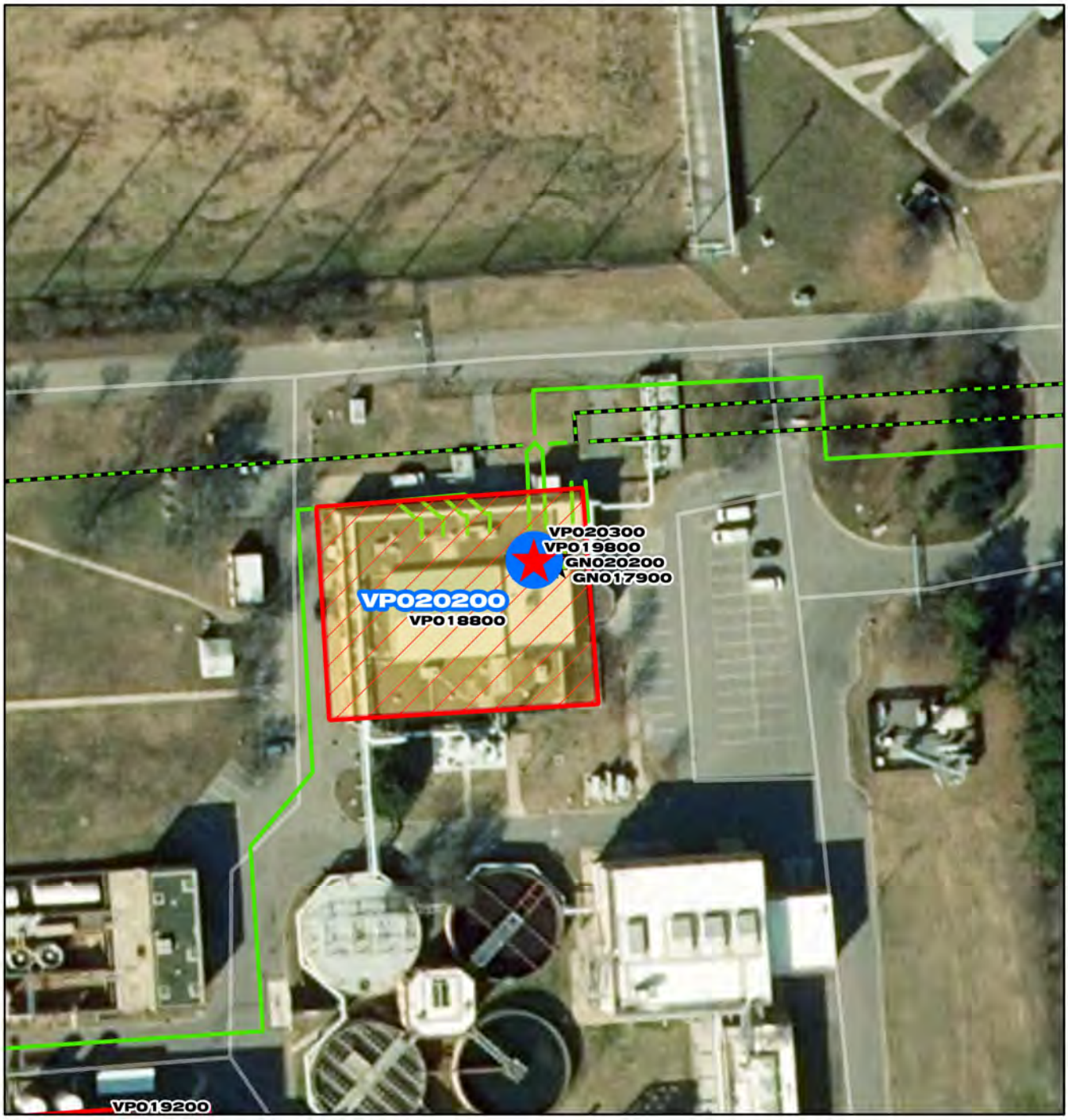
Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Lyndsey Davis
Contacts-Managing Dept: Operations-Interceptors

PROPOSED SCHEDULE START DATE

PrePlanning	07/01/2026
PER	07/01/2026
Design Delay	01/01/2027
Design	01/01/2027
Bid Delay	01/01/2028
PreConstruction	01/01/2028
Construction	06/01/2028
Closeout	02/01/2029

COST ESTIMATE

Cost Estimate Class:	**Class 5 (-20% to +100%)**
PrePlanning	$83,613
PER	$279,427
Design	$684,000
PreConstruction	$68,400
Construction	$6,840,000
Closeout	$10,000
Est. Program Cost	**$7,965,440**
Contingency Budget	$659,948
Est. Project Costs	**$8,625,388**



VP020200

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

Legend

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

0 25 50 100 150 200 Feet

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CIP Location

VP020200

Virginia Initiative Plant Nitrification Enhancement Facility MBBR Conversion

HRSD

Virginia Initiative Plant Nitrification Enhancement Facility MBBR Conversion

PR_VP020200

System: VIP
Type: Wastewater Treatment

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
$1,710	$0	$860	$850	$0	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project involves converting the existing Virginia Initiative Plant (VIP) Nitrification Enhancement Facility (NEF) to a Moving Bed Bioreactor (MBBR). The existing NEF aeration tank will be retrofitted with a new stainless steel aeration manifold, WWW-01H media, and media retention screens on the tank effluent and drain. The existing NEF clarifier will be re-purposed to receive Classifying Selector Solids (CSS) and has additional capacity to receive and settle future Tertiary Filter Backwash Solids. The project will also provide the ability to send CSS clarifier effluent to the MBBR to provide necessary cooling water. This project will be designed by HRSD staff and constructed in-house using the HRSD Construction Project Team and/or the new on call treatment plant contractor.

PROJECT JUSTIFICATION

Completion of this project will provide a more stable and higher performing system for treating incinerator scrubber blow down, which has historically been a major source for nutrient upsets adversely impacting biomass functions necessary for stable nutrient removal. This concept simplifies the unit process and removes the need for the NEF clarifier providing additional capacity for future settling of waste solids streams such as Tertiary Filter Backwash. This project will also significantly reduce the Non-Potable Water (NPW) usage associated with cooling the existing NEF, which lowers the capacity of future tertiary design flows. The Water Technology and Research Department conducted a NEF MBBR pilot from summer of 2025 to spring of 2026 to confirm this design concept is suitable for full scale operation.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Operations
Contacts-Dept Contacts: Matt Poe
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	07/01/2026
PER	07/01/2026
Design Delay	07/01/2026
Design	07/01/2026
Bid Delay	12/01/2026
PreConstruction	12/01/2026
Construction	04/01/2027
Closeout	10/01/2027

COST ESTIMATE

Cost Estimate Class:	**Class 5 (-20% to +100%)**
PrePlanning	$0
PER	$0
Design	$10,000
PreConstruction	$0
Construction	$1,700,000
Closeout	$0
Est. Program Cost	**$1,710,000**
Contingency Budget	$340,000
Est. Project Costs	**$2,050,000**

Virginia Initiative Plant Distributed Control System Upgrade Phase I

PR_VP020300

System: VIP
Type: Electrical

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
$1,552	$0	$0	$0	$0	$0	$0	$1,552	$0	$0	$0	$0

PROJECT DESCRIPTION

This project is to update key elements for the Emerson Distributed Control System (DCS) Treatment Plants across HRSD utilizing the Emerson "Evergreen" program. This manages and eliminates system obsolescence by ensuring key elements of the control system are updated with the latest validated software, workstations, networks, I/O, security, High-Performance Graphics, and optimization technology. This upgrade will effectively protect the initial system investment, therefore prolonging and sustaining the system's life. Each treatment plant will require regular upgrades under the Evergreen program every seven (7) years beginning in FY 2027.

PROJECT JUSTIFICATION

A technological "refresh" of DCS components at HRSD treatment plants is a necessary investment to ensure that the control systems are maintained in a reliable manner. This refresh extends the life of our investment by sustaining current, or incorporating new, technology in the system. It addresses the changing needs of system security requirements and includes security features to comply with newly instituted regulations, avoids emerging maintenance issues caused by aging technology, and adopts new I/O or digital bus technology and takes advantage of the associated asset maintenance and management tools.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

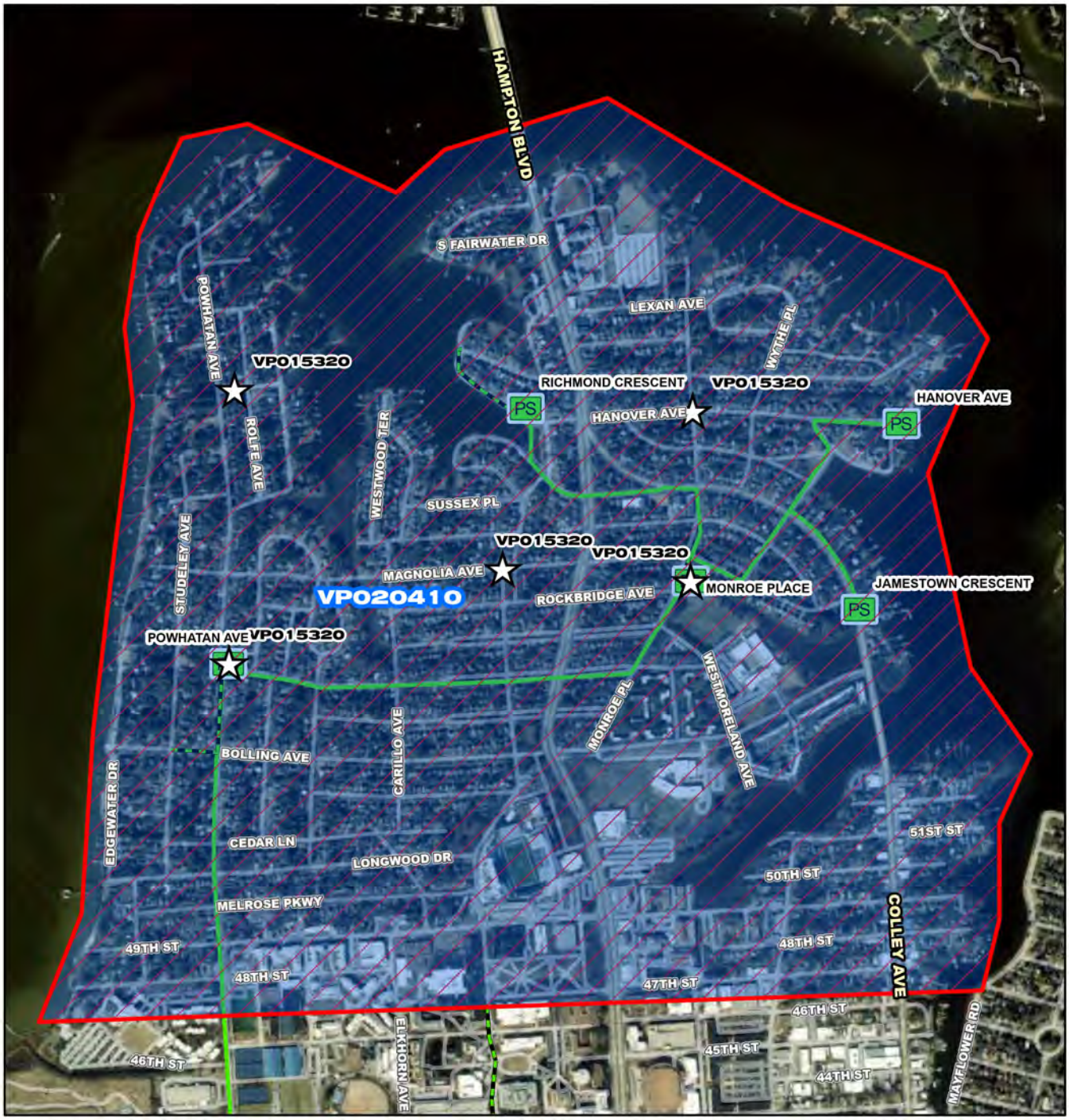
Contacts-Requesting Dept: Operations-E&I
Contacts-Dept Contacts: Shawn Hawley
Contacts-Managing Dept: Operations-E&I

PROPOSED SCHEDULE START DATE

PrePlanning	07/01/2031
PER	07/01/2031
Design Delay	07/01/2031
Design	07/01/2031
Bid Delay	07/01/2031
PreConstruction	07/01/2031
Construction	07/01/2031
Closeout	07/01/2032

COST ESTIMATE

Cost Estimate Class:	**Class 5 (-20% to +100%)**
PrePlanning	$0
PER	$0
Design	$0
PreConstruction	$0
Construction	$1,552,044
Closeout	$0
Est. Program Cost	**$1,552,044**
Contingency Budget	$388,011
Est. Project Costs	**$1,940,055**



VP020410

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

Legend

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

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

VP020410

Larchmont Area Interceptor Force Main Replacement Feasibility Study

HRSD

N
W E
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CIP Location

Larchmont Area Interceptor Force Main Replacement Feasibility Study **PR_VP020410**

System: VIP
Type: Pipelines

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
$50	$0	$50	$0	$0	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project will perform a feasibility study to evaluate rehabilitation and replacement alternatives for interceptor force mains located in the Larchmont area of Norfolk within the South Shore Interceptor System. The study will focus on force mains that were excluded from a previous capital improvement project focused on pump station rehabilitation.
The study will evaluate the current condition of these assets and develop a prioritized plan for rehabilitation or replacement. General Engineering Services will be utilized to perform this study. An opinion of probable cost will be developed for each alternative.

PROJECT JUSTIFICATION

This project will address ongoing operational and reliability risks associated with interceptor force mains in the Larchmont area. These assets have a documented history of overflows, failures, and emergency repairs. Historical work orders and failure records indicate recurring corrosion-related damage and valve deterioration, resulting in increased operational risk and emergency response costs.

FUNDING TYPE

Funding Type: Cash

CONTACTS

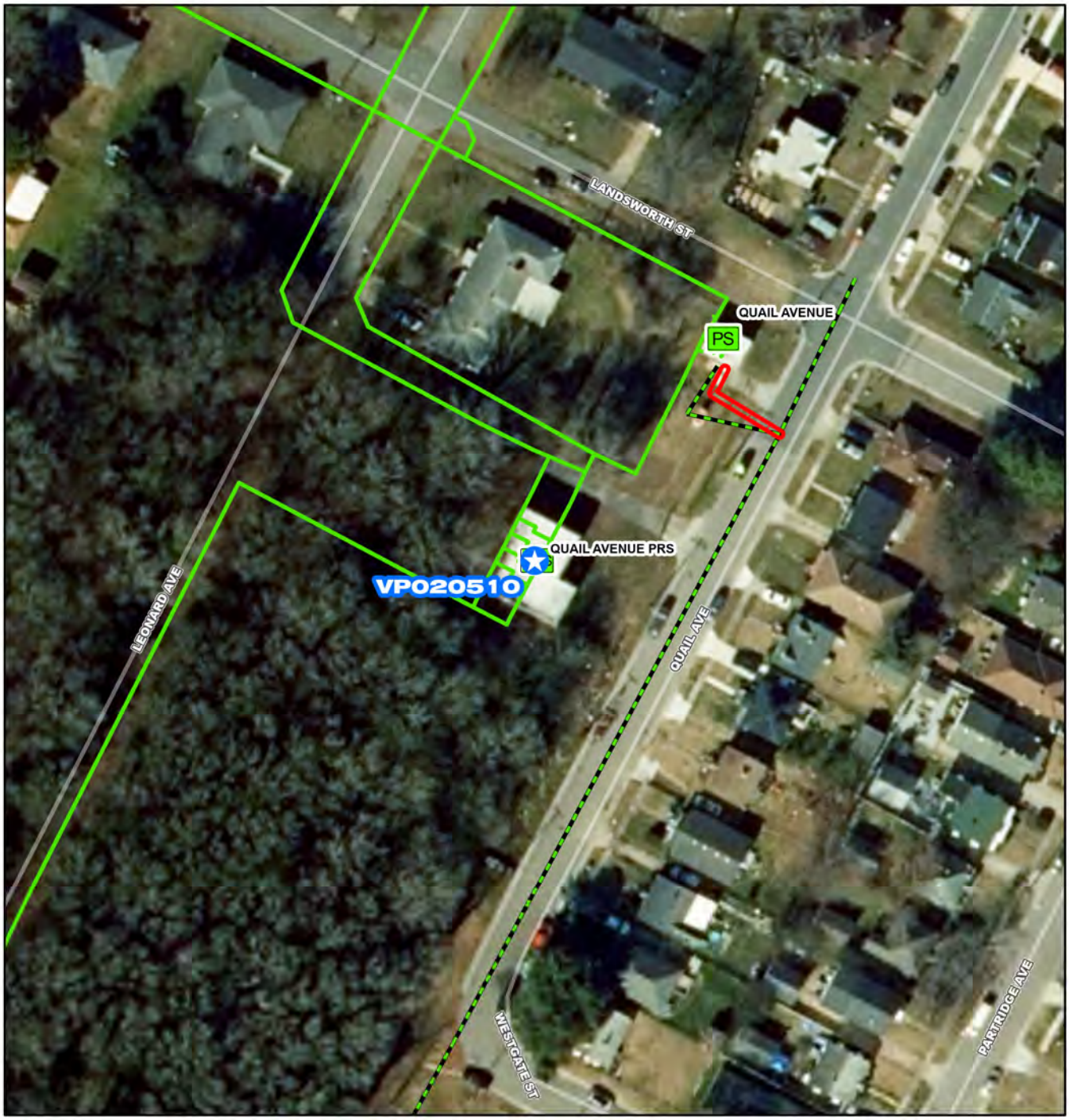
Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Shawn Heselton
Contacts-Managing Dept: Operations-Interceptors

PROPOSED SCHEDULE START DATE

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

COST ESTIMATE

Cost Estimate Class:	
PrePlanning	$50,000
PER	$0
Design	$0
PreConstruction	$0
Construction	$0
Closeout	$0
Est. Program Cost	**$50,000**
Contingency Budget	$0
Est. Project Costs	**$50,000**



VP020510

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

Legend

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

0 25 50 100 150 200 Feet

VP020510

Quail Avenue Pressure Reducing Station Ventilation and Odor Control Improvements Study

HRSD

N
W E
S

CIP Location

Quail Avenue Pressure Reducing Station Ventilation and Odor Control Improvements

PR_VP020510

System: VIP
Type: Pump Stations

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36
$50	$0	$50	$0	$0	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project will perform a feasibility study to evaluate alternatives for addressing odor and corrosion related impacts at the Quail Avenue Pressure Reducing Station within the South Shore Interceptor System. The study will assess options for improving air quality to address safety concerns and reduce premature equipment degradation.
General Engineering Services will be utilized to perform this study. An opinion of probable cost will be developed for the proposed alternatives.

PROJECT JUSTIFICATION

This project will address persistent hydrogen sulfide issues at the Quail Avenue Pressure Reducing Station. A temporary odor control system was previously installed but was removed after deteriorating due to corrosion and sustaining physical damage, rendering it ineffective. Currently, no permanent odor control system is in place at the station. Elevated hydrogen sulfide levels present ongoing operational and equipment reliability risks. The E&I Department has expressed concerns regarding the installation of new electrical equipment, including variable frequency drives (VFDs), due to the potential for corrosion and premature failure. As a result, the VFD for Pump #1 is currently out of service, and a replacement unit has not been installed.
Without a permanent and effective ventilation and odor control solution, the station will continue to experience increased maintenance needs, reduced equipment life, and elevated safety and reliability risks. This study will provide the technical basis needed to identify appropriate mitigation measures, support installation of critical electrical equipment, and improve long-term station operability.

FUNDING TYPE

Funding Type: Cash

CONTACTS

Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Shawn Heselton
Contacts-Managing Dept: Operations-Interceptors

PROPOSED SCHEDULE START DATE

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

COST ESTIMATE

Cost Estimate Class:	
PrePlanning	$50,000
PER	$0
Design	$0
PreConstruction	$0
Construction	$0
Closeout	$0
Est. Program Cost	**$50,000**
Contingency Budget	$0
Est. Project Costs	**$50,000**