

# James River Treatment Plant

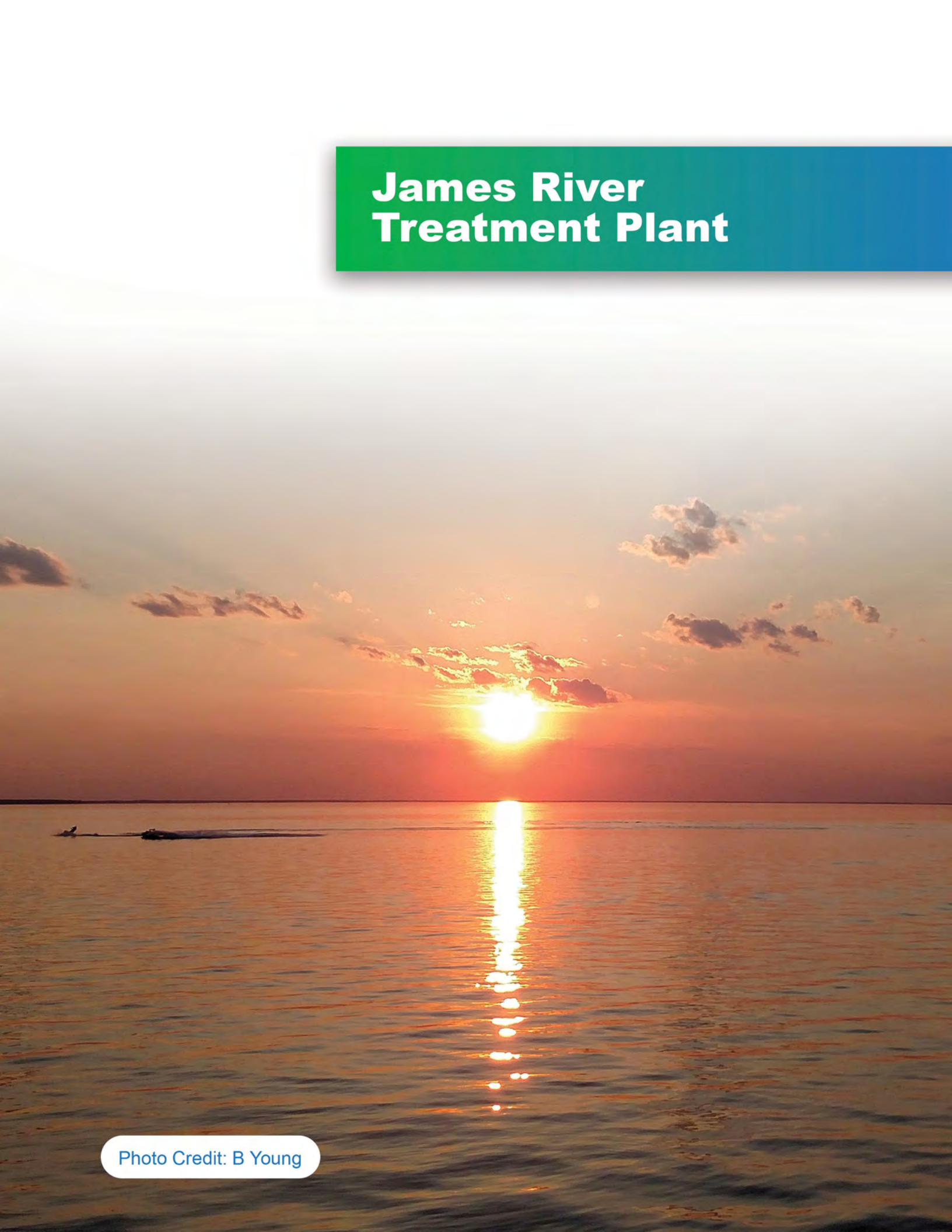
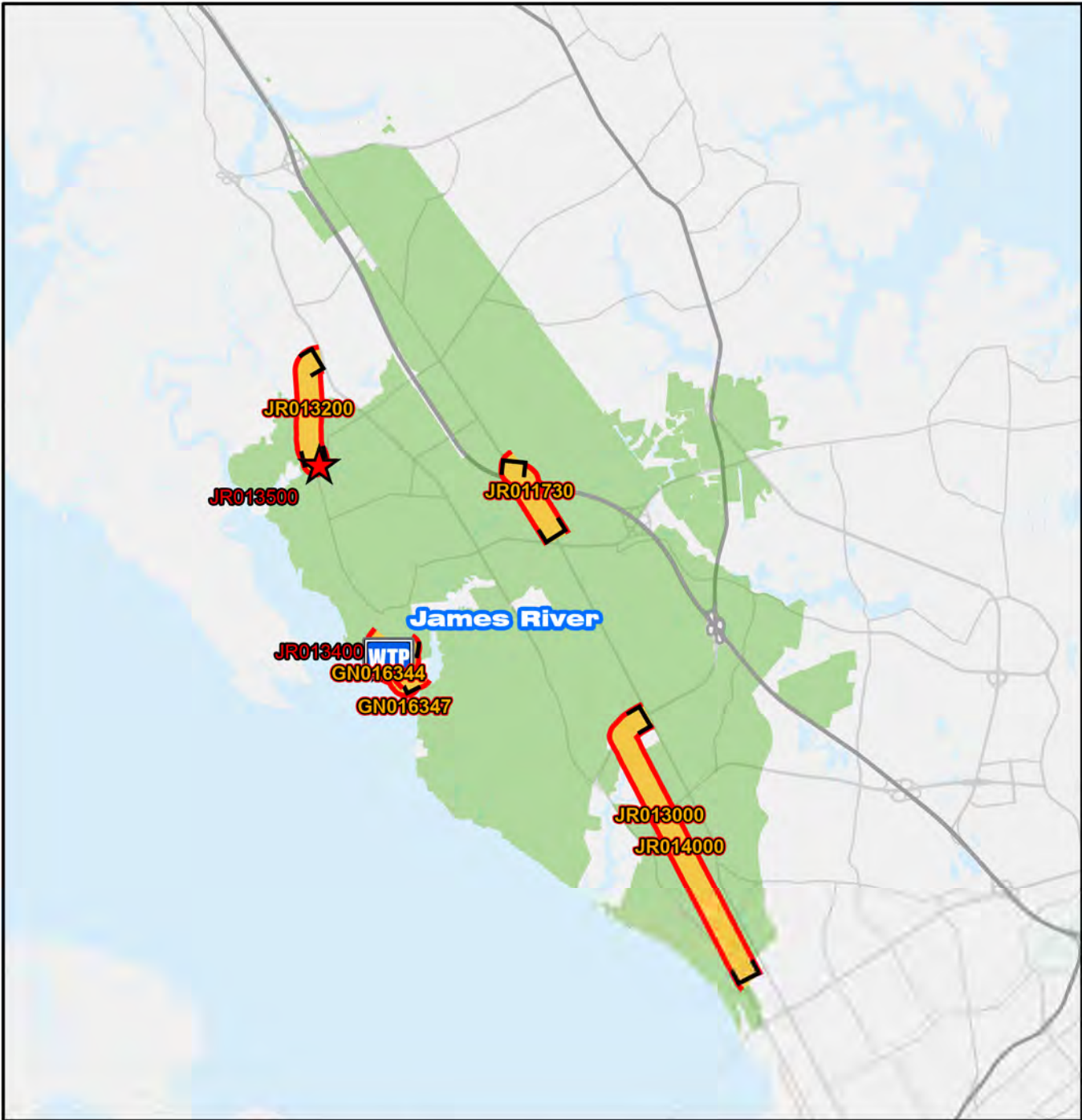


Photo Credit: B Young



**Legend**

James River Treatment Plant

- CIP Interceptor Point
- CIP Pump Station Point
- CIP Interceptor Line
- CIP Abandonment
- Treatment Plant Service Area
- HRSD Interceptor Force Main
- HRSD Interceptor Gravity Main
- HRSD Treatment Plant
- HRSD Pressure Reducing Station
- HRSD Pump Station

0 2,500 5,000 10,000 15,000 20,000 Feet

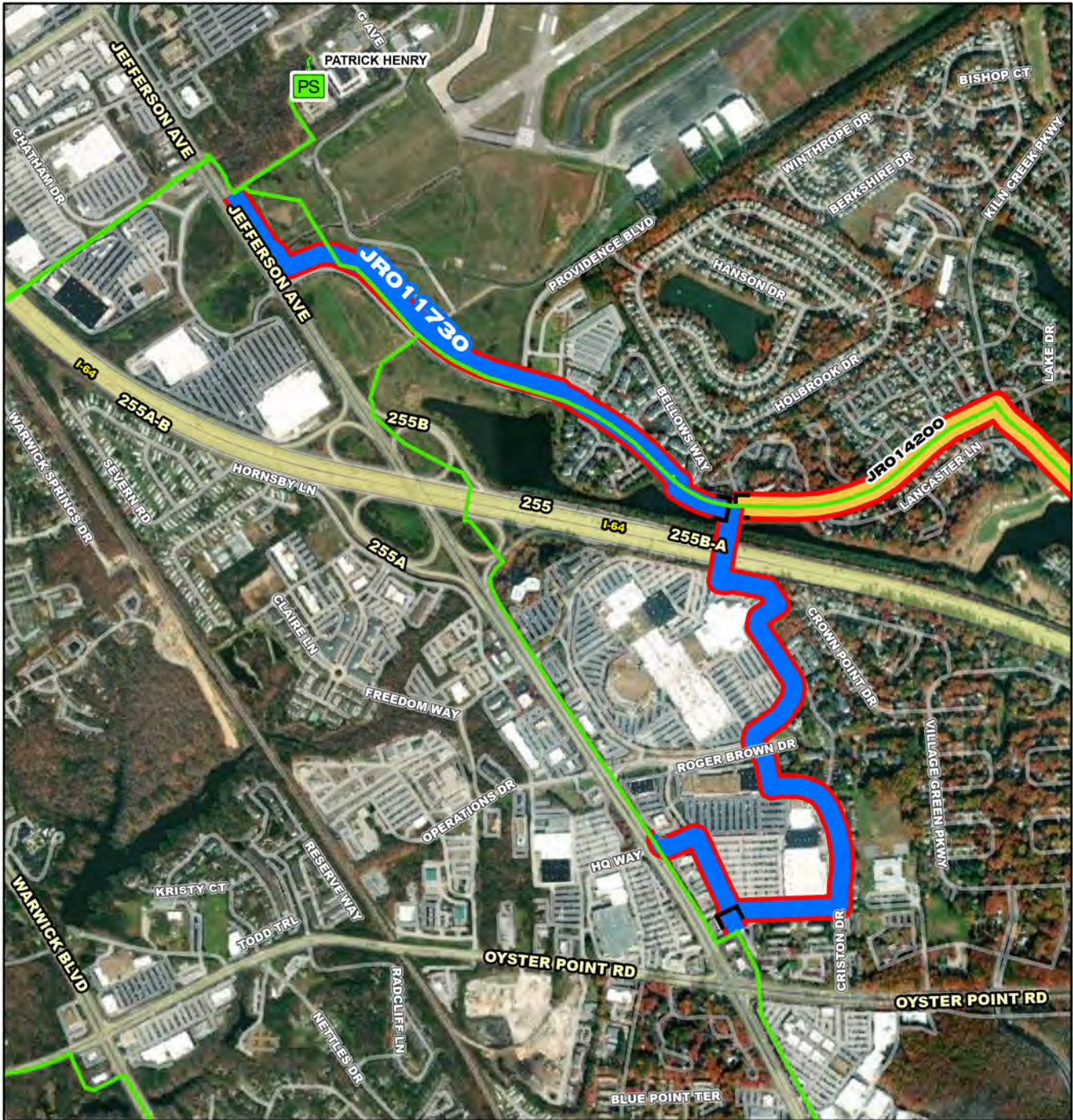
### James River Treatment Plant Service Area CIP Projects

Treatment Plant Projects		
GN016344	GN016363	JR013800
GN016347	GN017400	
GN016360	JR013410	
GN016361	JR013610	
GN016362	JR013620	

N

**CIP Location**

Service Area

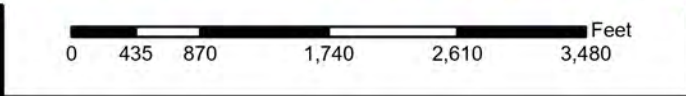


**JRO11730**

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

**Legend**

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



## JRO 1 1730

### Jefferson Avenue Interceptor Force Main Replacement Phase III

**CIP Location**



System: James River  
Type: Pipelines

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

**PROGRAM CASH FLOW PROJECTION (\$,000)**

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$19,293	\$5,992	\$9,968	\$3,329	\$3	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**PROJECT DESCRIPTION**

This project will replace approximately 9,000 linear feet (LF) of 12-inch, 14-inch and 16-inch HRSD force main (FM) (NF-020 and NF-021) from the intersection of Route 171 (Oyster Point Road) and Jefferson Avenue to the proposed Patrick Henry jumper. The proposed force main sizing (30-inch) was performed during the City Center HART Analysis.

**PROJECT JUSTIFICATION**

Preliminary hydraulic and capacity analysis show that pressures in the HRSD FM are hindering the City of Newport News' pump stations from entering the HRSD system during high flow conditions. Future development is planned for the service area, which will exacerbate the current problem. This FM segment will also provide additional capacity and system flexibility when combined with other proposed improvements.

**FUNDING TYPE**

Funding Type: VCWRLF

**CONTACTS**

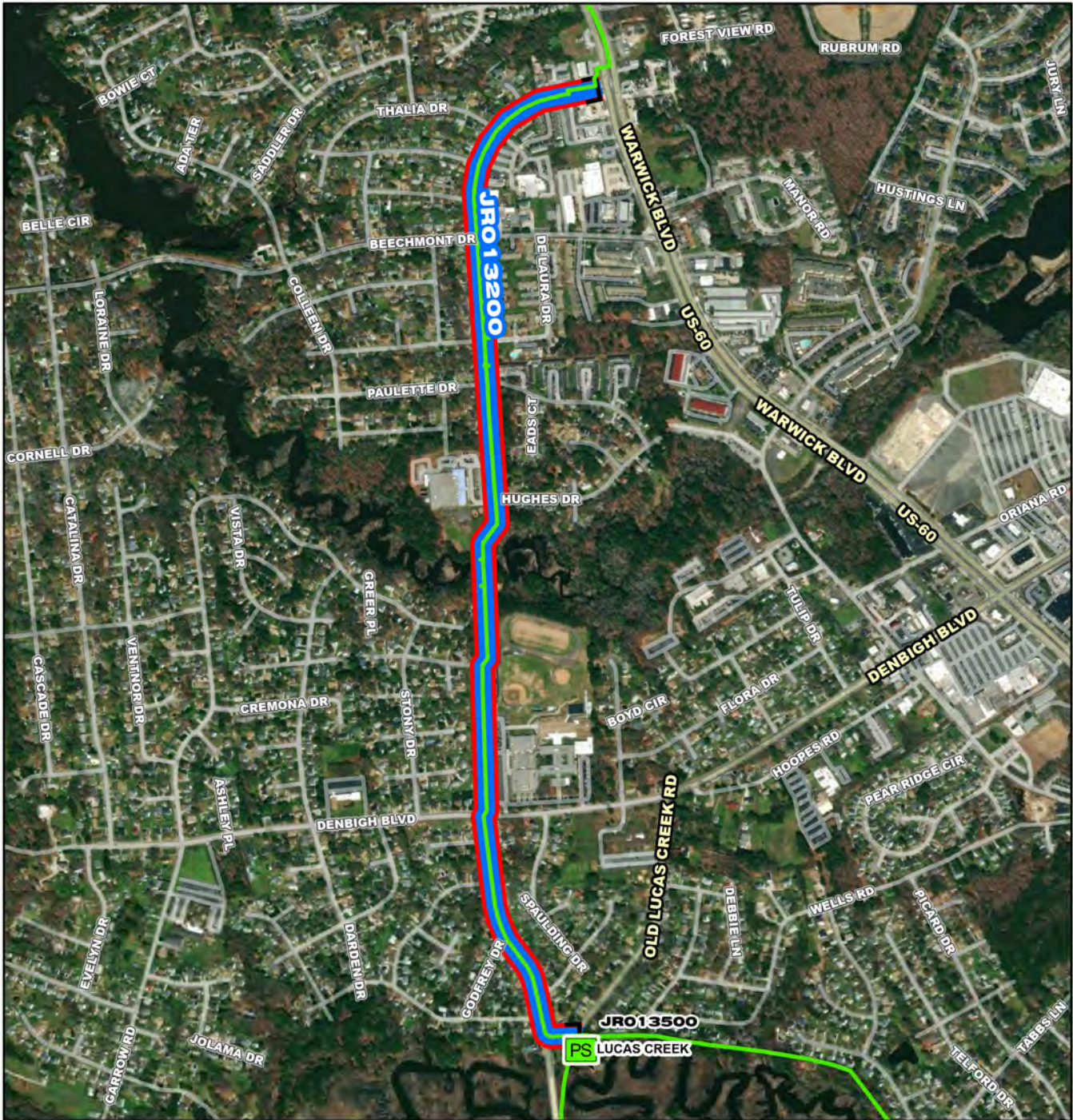
Contacts-Requesting Dept: Operations-Interceptors  
Contacts-Dept Contacts: Ted Denny  
Contacts-Managing Dept: Engineering

**PROPOSED SCHEDULE START DATE**

PrePlanning 02/01/2018  
PER 03/01/2018  
Design Delay 04/20/2018  
Design 03/02/2019  
Bid Delay 07/14/2022  
PreConstruction 07/14/2022  
Construction 09/01/2022  
Closeout 11/01/2024

**COST ESTIMATE**

**Cost Estimate Class:**  
PrePlanning \$54,528  
PER \$145,077  
Design \$1,613,314  
PreConstruction \$21,675  
Construction \$17,448,054  
Closeout \$10,000  
**Est. Program Cost \$19,292,648**  
Contingency Budget \$2,100,000  
**Est. Project Costs \$21,392,648**



**JRO 13200**

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

**Legend**

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

Feet

0    365    730    1,460    2,190    2,920

**JRO 13200**

**Lucas Creek-Woodhaven  
Interceptor Force Main  
Replacement Phase II**

N  
W    E  
S

**CIP Location**



**Lucas Creek-Woodhaven Interceptor Force Main Replacement Phase II**

PR\_JR013200

System: James River  
Type: Pipelines

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

**PROGRAM CASH FLOW PROJECTION (\$,000)**

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$3,306	\$1,004	\$2,298	\$4	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**PROJECT DESCRIPTION**

This project involves the replacement of approximately 1,500 linear feet (LF) of Ductile Iron (DI) pipe between Denbigh High School and Epes Elementary School. This section of pipe will be replaced with a 30-inch Horizontal Directional Drilled Polyethylene pipe underneath Stony Run.

**PROJECT JUSTIFICATION**

In 2014, two failures occurred on the Lucas Creek-Woodhaven Interceptor Force Main (NF-015) just south of Woodhaven Road within a 6 month period. These failures shared the same characteristics as the previous failures on the Prestressed Concrete Cylinder Pipe (PCCP) force main in 2007 that required the replacement of approximately 2 miles of HRSD force main. After the first failure (April 2014), several Broadband Electromagnetic (BEM) scans and Ultrasonic Thickness (UST) tests were performed along the force main from Woodhaven Road to Lucas Creek Road along Warwick Boulevard. The BEM and UST testing confirmed a loss of wall thickness along the bottom third of the pipe. pH sampling along NF-008 and NF-015 resulted in values ranging from 4.4-6.1. Due to the condition of the pipe immediately downstream of the repairs, a Prompt Repair Work Order has been issued for the replacement of approximately 1,200 LF of pipe from the intersection of Woodhaven Road and Warwick Boulevard to just north of the intersection of Thorncliff Drive and Warwick Boulevard. While no condition assessment has been performed along this section of force main from Warwick Boulevard and Lucas Creek Road to the Lucas Creek Pump Station (PS), it is anticipated that a loss of wall thickness has occurred along the bottom of the pipe. Additional condition assessment activities may be performed based on actual pipe condition obtained from the Prompt Repair work and the work to complete Phase I. This 1,500 LF of pipe to be replaced represents the most difficult section of forcemain to access and repair from Lucas Creek-Woodhaven Interceptor Force Main Replacement Phase I (JR013100) to Lucas Creek Pump Station. This portion of 1970 DI pipe lies between Denbigh High School and Epes Elementary School. This pipeline is installed under a salt marsh which, based on past experiences, is also at risk of severe external corrosion.

**FUNDING TYPE**

Funding Type: Revenue Bond

**CONTACTS**

Contacts-Requesting Dept: Operations-Interceptors  
Contacts-Dept Contacts: Angela Weatherhead  
Contacts-Managing Dept: Engineering

**PROPOSED SCHEDULE START DATE**

PrePlanning	04/01/2019
PER	11/05/2019
Design Delay	11/09/2020
Design	12/01/2021
Bid Delay	12/07/2022
PreConstruction	12/01/2022
Construction	04/01/2023
Closeout	05/01/2024

**COST ESTIMATE**

<b>Cost Estimate Class:</b>	<b>Class 1</b>
PrePlanning	\$802
PER	\$99,835
Design	\$194,329
PreConstruction	\$19,875
Construction	\$2,986,280
Closeout	\$5,000
<b>Est. Program Cost</b>	<b>\$3,306,121</b>
Contingency Budget	\$299,128
<b>Est. Project Costs</b>	<b>\$3,605,249</b>

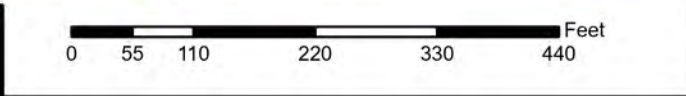


**JRO13400**

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

**Legend**

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



## JRO 13400

### James River Treatment Plant Advanced Nutrient Reduction Improvements

**CIP Location**



**James River Treatment Plant Advanced Nutrient Reduction Improvements**

PR\_JR013400

System: James River  
Type: SWIFT

Driver Category: Performance Upgrades  
Project Phase: Design Delay  
Regulatory: Integrated Plan-SWIFT

**PROGRAM CASH FLOW PROJECTION (\$,000)**

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$267,121	\$72,590	\$58,929	\$59,163	\$59,163	\$17,275	\$0	\$0	\$0	\$0	\$0	\$0

**PROJECT DESCRIPTION**

This project is for the design and construction of improvements to the secondary treatment process at the James River Treatment Plant. The scope includes modifications to the Integrated Fixed Film Activated Sludge (IFAS) system, increased IFAS media fill, demolition of existing secondary clarifiers, new secondary clarifiers, new post denitrification moving bed bio-reactor (MBBR), chemical storage and feed systems, and all pumping, piping, instrumentation, and site work required. A new multi-purpose administration building will be constructed as part of this project.

**PROJECT JUSTIFICATION**

Advanced secondary treatment improvements, including nutrient reduction measures, will be required to provide stable source water quality that meets the influent requirements of the full scale SWIFT facility at James River Treatment Plant.

**FUNDING TYPE**

Funding Type: WIFIA

**CONTACTS**

Contacts-Requesting Dept: Operations-Treatment  
Contacts-Dept Contacts: Lauren Zuravnsky  
Contacts-Managing Dept: Engineering

**PROPOSED SCHEDULE START DATE**

PrePlanning 08/01/2019  
PER 07/01/2019  
Design Delay  
Design 05/01/2020  
Bid Delay  
PreConstruction 08/01/2019  
Construction 02/01/2022  
Closeout 01/01/2027

**COST ESTIMATE**

**Cost Estimate Class:**  
PrePlanning \$322,500  
PER \$2,422,809  
Design \$15,836,299  
PreConstruction \$84,860  
Construction \$248,454,310  
Closeout \$0  
**Est. Program Cost \$267,120,778**  
Contingency Budget \$6,566,654  
**Est. Project Costs \$273,687,432**





System: James River  
Type: Wastewater Treatment

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

**PROGRAM CASH FLOW PROJECTION (\$,000)**

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$6,100	\$4,460	\$679	\$679	\$283	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**PROJECT DESCRIPTION**

This project will modify IFAS basins 1,2,3,4,6,7,9 (7 tanks) by adding a second anoxic zone to achieve partial denitrification-annamox (PdNA). The installation in each tank should be identical to the demonstration tank (tank 5).

**PROJECT JUSTIFICATION**

PdNA MIFAS (moving media integrated fixed-film activated sludge) provides considerable operational cost savings, but more importantly, this is needed to meet nitrogen limits in the future for James River SWIFT and to meet new total nitrogen discharge requirements.

**FUNDING TYPE**

Funding Type: Cash

**CONTACTS**

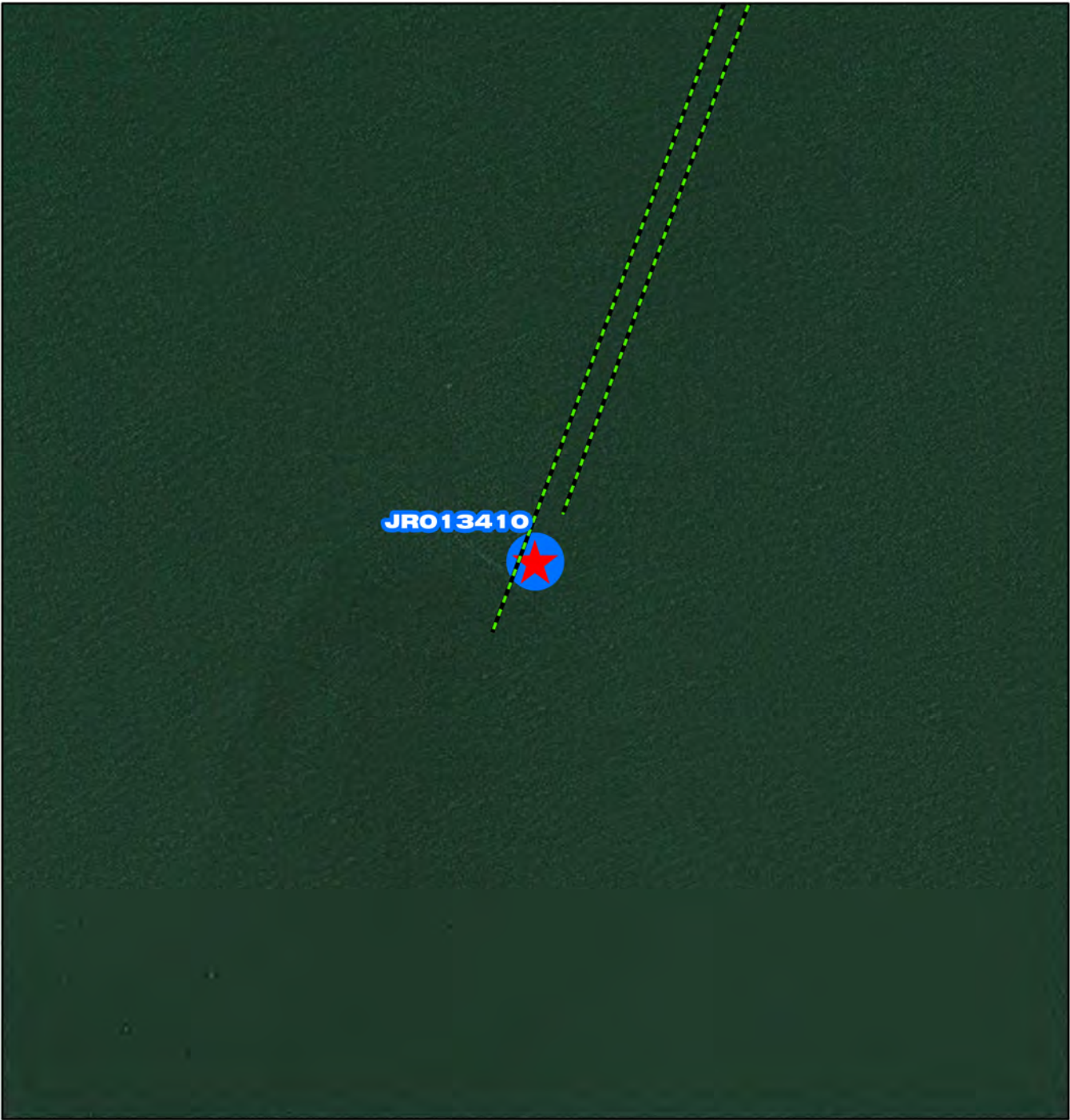
Contacts-Requesting Dept: Operations-Treatment  
Contacts-Dept Contacts: Jennifer Klages  
Contacts-Managing Dept: Engineering

**PROPOSED SCHEDULE START DATE**

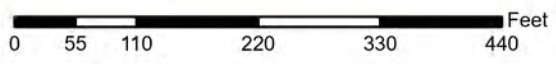
PrePlanning  
PER  
Design Delay  
Design 03/01/2022  
Bid Delay  
PreConstruction  
Construction 03/01/2022  
Closeout 12/01/2025

**COST ESTIMATE**

<b>Cost Estimate Class:</b>	<b>Class 1</b>
PrePlanning	\$0
PER	\$0
Design	\$61,783
PreConstruction	\$2,400
Construction	\$6,035,817
Closeout	\$0
<b>Est. Program Cost</b>	<b>\$6,100,000</b>
Contingency Budget	\$0
<b>Est. Project Costs</b>	<b>\$6,100,000</b>



- JRO13410**
-  Project Interceptor Line
  -  Project Interceptor Point
  -  Project Pump Station Point
  -  Project Area
- Legend**
-  CIP Interceptor Point
  -  CIP Pump Station Point
  -  CIP Interceptor Line
  -  CIP Abandonment
  -  CIP Project Area
  -  HRSD Interceptor Force Main
  -  HRSD Interceptor Gravity Main
  -  HRSD Treatment Plant
  -  HRSD Pressure Reducing Station
  -  HRSD Pump Station



**JRO 13410**

**James River Treatment Plant Outfall  
Modifications**



**CIP Location**





System: James River  
Type: SWIFT

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

**PROGRAM CASH FLOW PROJECTION (\$,000)**

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$1,350	\$0	\$750	\$190	\$203	\$203	\$5	\$0	\$0	\$0	\$0	\$0

**PROJECT DESCRIPTION**

This project includes design and construction of modifications to the two existing outfall diffuser pipes within the James River. The project area is approximately 4,000 feet from the James River Treatment Plant shoreline. The project will incorporate design elements appropriate for the installation of riser piping and duckbill-style valves on the existing reinforced concrete pipe (RCP) outfall diffuser pipes.

**PROJECT JUSTIFICATION**

The James River Treatment Plant outfall diffuser openings are located below the mudline allowing for sedimentation within the diffuser pipe, especially under low effluent flow conditions. This project will provide long term protection of existing assets necessary for operating James River Treatment Plant's outfall diffusers at low effluent flow rates, which will occur upon completion of the James River SWIFT project

**FUNDING TYPE**

Funding Type: Revenue Bond

**CONTACTS**

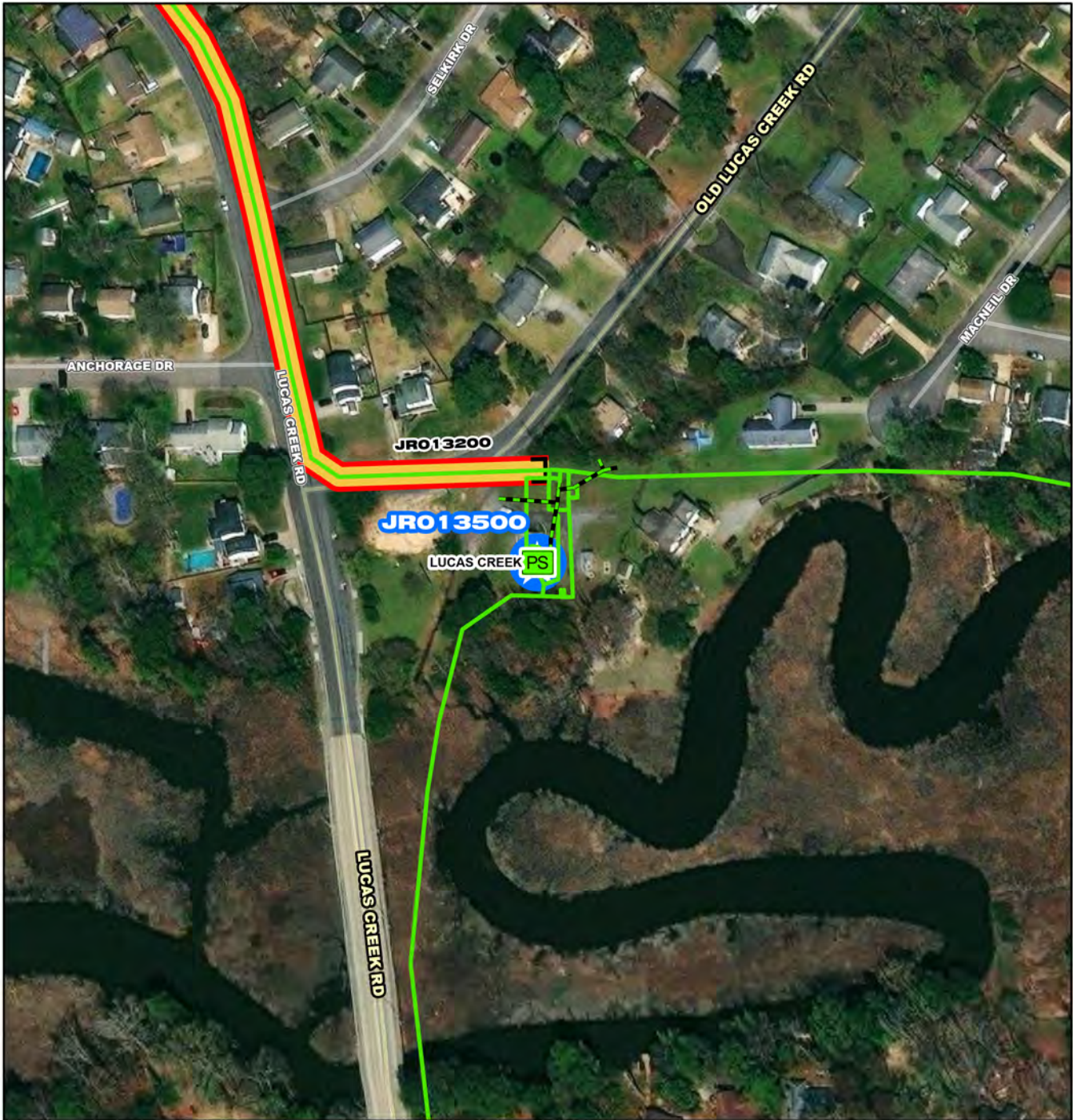
Contacts-Requesting Dept: Engineering  
Contacts-Dept Contacts: Lauren Zuravnsky  
Contacts-Managing Dept: Engineering

**PROPOSED SCHEDULE START DATE**

PrePlanning	07/03/2023
PER	07/03/2023
Design Delay	07/03/2023
Design	07/03/2023
Bid Delay	10/04/2023
PreConstruction	06/12/2024
Construction	07/23/2024
Closeout	07/09/2027

**COST ESTIMATE**

<b>Cost Estimate Class:</b>	<b>Class 5</b>
PrePlanning	\$0
PER	\$0
Design	\$750,000
PreConstruction	\$0
Construction	\$600,000
Closeout	\$0
<b>Est. Program Cost</b>	<b>\$1,350,000</b>
Contingency Budget	\$500,000
<b>Est. Project Costs</b>	<b>\$1,850,000</b>



**JRO13500**

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

**Legend**

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

0 55 110 220 330 440 Feet

**JRO 13500**

**Lucas Creek Pump Station Replacement**

N  
W E  
S

**CIP Location**



System: James River  
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	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$21,357	\$5,920	\$9,747	\$5,691	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**PROJECT DESCRIPTION**

This project was initiated under JR010600 Lucas Creek Pump Station Upgrades project. A Preliminary Engineering Report was completed. After evaluating several alternatives and taking into consideration cost projections, it was determined that replacement of the pump station is the optimal solution to address conditional and operational issues. This new project includes the replacement of the existing Lucas Creek Pump Station to include all yard piping, and an addition of two flow meters and vaults. On May 26, 2020 Commission approved the purchase of the adjoining property (748 Old Lucas Creek Road, Newport News) to facilitate the construction of the new pump station.

**PROJECT JUSTIFICATION**

This project is required in order to provide expanded operational flexibility in the North Shore system. The new Kiln Creek Interceptor Force Main (IFM) and Route 171 IFM in conjunction with upgrades to Lucas Creek will reduce system pressures during wet weather events.

**FUNDING TYPE**

Funding Type: VCWRLF

**CONTACTS**

Contacts-Requesting Dept: Operations-Interceptors  
Contacts-Dept Contacts: Jeremiah Burford  
Contacts-Managing Dept: Engineering

**PROPOSED SCHEDULE START DATE**

PrePlanning	
PER	11/04/2020
Design Delay	02/17/2021
Design	09/29/2021
Bid Delay	02/14/2022
PreConstruction	02/14/2022
Construction	04/27/2022
Closeout	02/01/2025

**COST ESTIMATE**

Cost Estimate Class:	Class 1
PrePlanning	\$0
PER	\$0
Design	\$882,900
PreConstruction	\$27,236
Construction	\$20,442,332
Closeout	\$5,000
<b>Est. Program Cost</b>	<b>\$21,357,468</b>
Contingency Budget	\$975,000
<b>Est. Project Costs</b>	<b>\$22,332,468</b>



**JRO13610**

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

**Legend**

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

0 55 110 220 330 440 Feet

## JRO13610

### James River Treatment Plant Automation Improvements Phase I

N  
W E  
S

**CIP Location**



System: James River  
Type: Wastewater Treatment

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

**PROGRAM CASH FLOW PROJECTION (\$,000)**

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$10,045	\$509	\$8,732	\$804	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**PROJECT DESCRIPTION**

This project will provide for automation and control of the James River Treatment Plant's (JRTP) treatment, solids thickening, anaerobic digestion, odor control and related systems.

**PROJECT JUSTIFICATION**

The treatment and solids handling sections of the JRTP exist now with minimal automation, and to allow the plant operator to best manage the future facility as a whole, the distributed control system must be enhanced to be consistent with the Advanced Nutrient Removal Improvements and SWIFT Projects.

**FUNDING TYPE**

Funding Type: Revenue Bond

**CONTACTS**

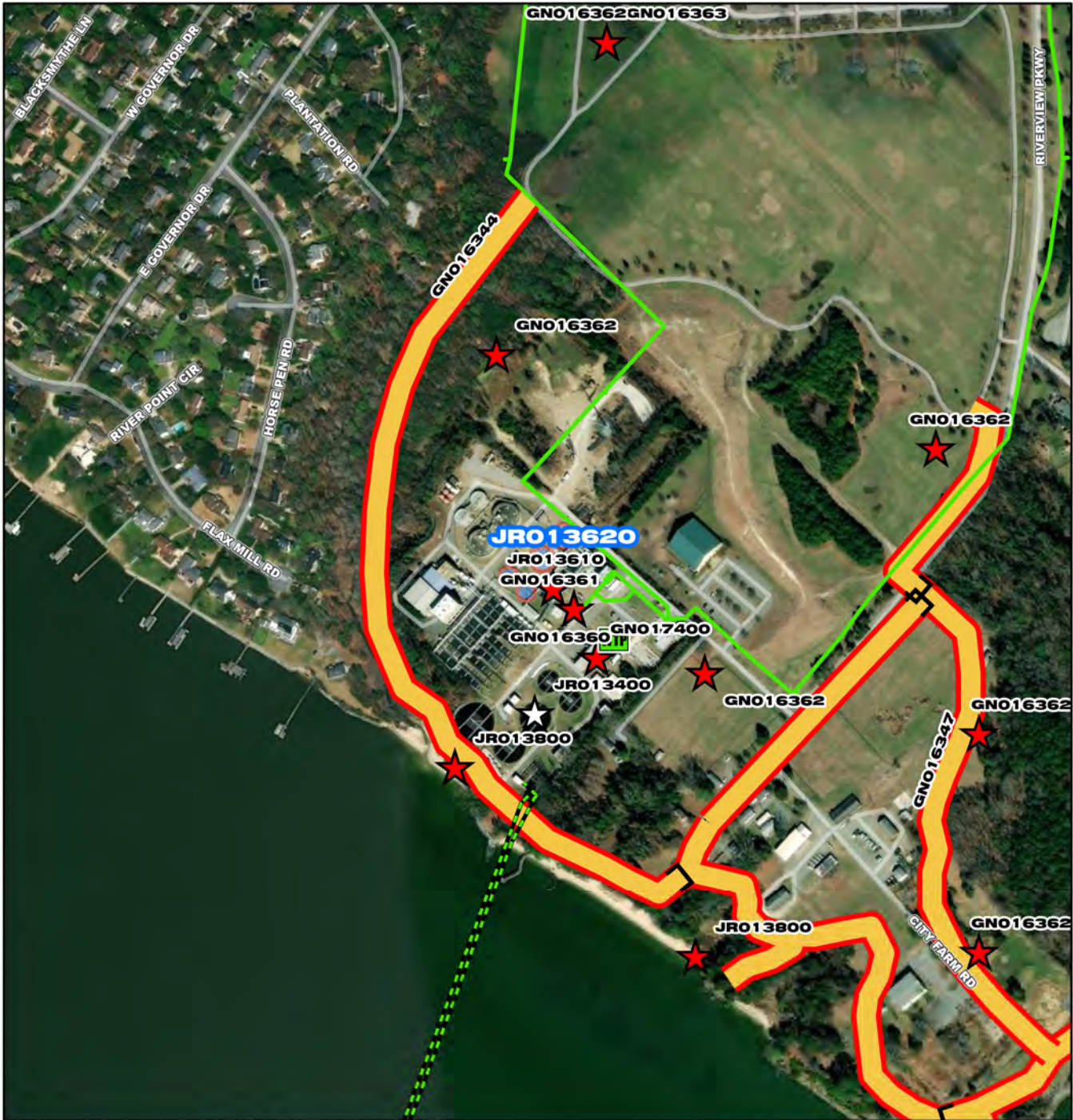
Contacts-Requesting Dept: Operations-Treatment  
Contacts-Dept Contacts: Robert Rutherford  
Contacts-Managing Dept: Engineering

**PROPOSED SCHEDULE START DATE**

PrePlanning  
PER 07/01/2021  
Design Delay 08/20/2021  
Design 04/29/2022  
Bid Delay 08/02/2022  
PreConstruction 05/01/2023  
Construction 08/01/2023  
Closeout 08/01/2024

**COST ESTIMATE**

**Cost Estimate Class:**  
PrePlanning \$0  
PER \$0  
Design \$507,186  
PreConstruction \$2,000  
Construction \$9,525,600  
Closeout \$10,000  
**Est. Program Cost \$10,044,786**  
Contingency Budget \$1,428,840  
**Est. Project Costs \$11,473,626**



**JRO 13620**

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

**Legend**

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

0 165 330 660 990 1,320 Feet

**JRO 13620**

**James River Treatment Plant  
Automation Improvements Phase II**

N  
W E  
S

**CIP Location**





System: James River  
Type: Wastewater Treatment

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

**PROGRAM CASH FLOW PROJECTION (\$,000)**

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$10,970	\$0	\$0	\$240	\$880	\$5,214	\$4,635	\$0	\$0	\$0	\$0	\$0

**PROJECT DESCRIPTION**

This project will replace the steel rake arm, peripheral feed baffle and effluent weirs on four primary clarifiers with stainless steel, scum removing rake arms, center feed piping, and peripheral weirs. A scum concentrator will be installed in a heated, odor-controlled building erected near the primary clarifiers to receive and concentrate pumped scum. This project will also provide for automation and control of the James River Treatment Plant's (JRTP) primary treatment and related systems.

**PROJECT JUSTIFICATION**

This project will extend the useful life of the JRTP primary clarifiers constructed in 1967 and 1973. Steel structures in the primary clarifiers are corroded and need to be replaced. Since steel structures require replacement, the clarifiers will be converted to a more efficient center feed, peripheral weir design with a scum removing rake arm. Currently, the scum removal process is labor intensive and with the aid of a vacuum truck estimated to cost \$30,000 annually. Installation of a scum concentrator will provide for proper dewatering and concentrating of scum for disposal. The primary treatment of the JRTP exist now with minimal automation, and to allow the plant operator to best manage the future facility as a whole, the distributed control system must be enhanced to be consistent with the Advanced Nutrient Removal Improvements and SWIFT Projects.

**FUNDING TYPE**

Funding Type: Revenue Bond

**CONTACTS**

Contacts-Requesting Dept: Operations-Treatment  
Contacts-Dept Contacts: Robert Rutherford  
Contacts-Managing Dept: Engineering

**PROPOSED SCHEDULE START DATE**

PrePlanning	09/02/2024
PER	01/02/2025
Design Delay	07/02/2025
Design	07/02/2025
Bid Delay	07/02/2026
PreConstruction	07/02/2026
Construction	10/01/2026
Closeout	03/02/2028

**COST ESTIMATE**

<b>Cost Estimate Class:</b>	
PrePlanning	\$0
PER	\$240,408
Design	\$879,550
PreConstruction	\$2,290
Construction	\$9,845,280
Closeout	\$2,290
<b>Est. Program Cost</b>	<b>\$10,969,817</b>
Contingency Budget	\$3,293,246
<b>Est. Project Costs</b>	<b>\$14,263,063</b>



System: James River  
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	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$1,761	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,761

**PROJECT DESCRIPTION**

High Priority Project (HPP) Round 2 Project 6 consists of the following RWWMP Project ID and general description:  
JR-RWWMP-11 Newport News Inflow and Infiltration (I&I) Reduction

**PROJECT JUSTIFICATION**

As part of the RWWMP submitted to the DEQ and EPA, HRSD developed an approach to recognize the highest-priority system improvements with the greatest relative environmental benefit. The result being the identification of High-Priority Projects (HPPs). The initial HPPs (Round 1) were identified in the RWWMP, submitted to EPA in September of 2017, and are scheduled to be constructed between plan approval and 2030. Further review of RWWMP projects was conducted in 2019 to find beneficial solutions to implement as a second set of HPPs (identified as Round 2). A prioritization methodology was used to identify improvements to minimize sanitary sewer overflow (SSO) volume.

Rounds 1 and 2 of High-Priority Projects were scheduled with consecutive 10-year implementation periods starting with Round 1 being completed between plan approval and 2030. Prior to commencement, HRSD will review the Round 2 projects to confirm that they are still expected to meet the desired result and confirm this in a check in with the EPA/DEQ. To modify the list of specific Round 2 HPP projects, HRSD will show that the revised set of projects will attain a minimum of the same percent reduction, or better.

**FUNDING TYPE**

Funding Type: Cash

**CONTACTS**

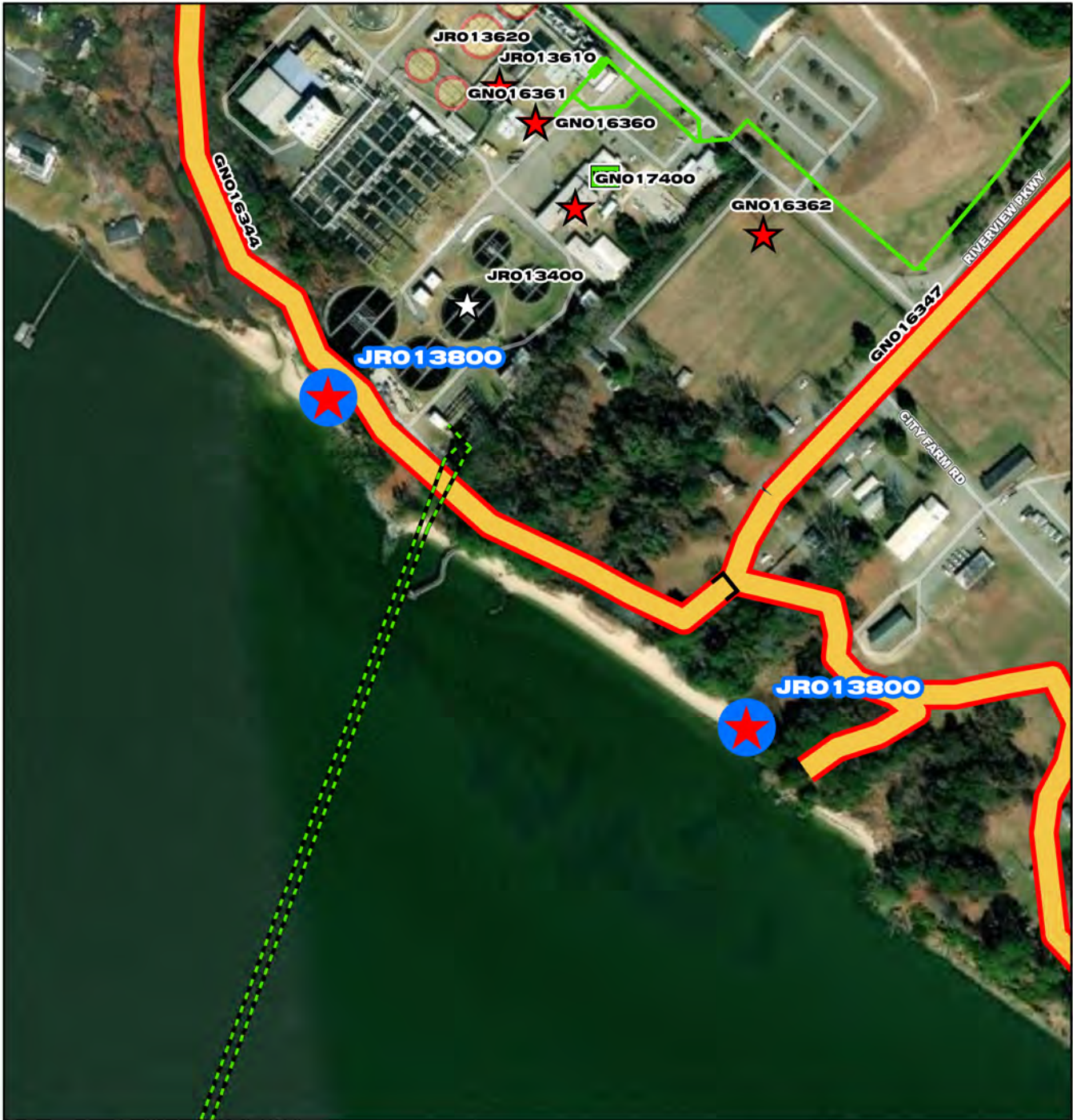
Contacts-Requesting Dept: Engineering  
Contacts-Dept Contacts: John Dano  
Contacts-Managing Dept: Engineering

**PROPOSED SCHEDULE START DATE**

PrePlanning	07/01/2032
PER	08/01/2032
Design Delay	10/01/2032
Design	06/01/2033
Bid Delay	09/01/2033
PreConstruction	05/01/2034
Construction	07/01/2034
Closeout	05/01/2035

**COST ESTIMATE**

<b>Cost Estimate Class:</b>	
PrePlanning	\$391,293
PER	\$978,232
Design	\$1,173,878
PreConstruction	\$195,646
Construction	\$16,629,937
Closeout	\$195,646
<b>Est. Program Cost</b>	<b>\$19,564,632</b>
Contingency Budget	\$0
<b>Est. Project Costs</b>	<b>\$19,564,632</b>



**JRO 13800**

- Project Interceptor Point
- Project Interceptor Point
- Project Pump Station Point
- Project Area

**Legend**

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

Feet

0 95 190 380 570 760

## JRO 13800

### James River Treatment Plant Shoreline Stabilization

**CIP Location**



System: James River  
Type: SWIFT

Driver Category: Performance Upgrades  
Project Phase: Pre Construction  
Regulatory: Integrated Plan-SWIFT

**PROGRAM CASH FLOW PROJECTION (\$,000)**

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$1,126	\$1,064	\$62	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

**PROJECT DESCRIPTION**

This project includes stabilization of approximately 1,200 linear feet of eroding shoreline along the James River. The project area is located along HRSD's property at the James River Treatment Plant (300 linear feet) and along the City of Newport News's property at the City Farm section of Riverview Farm Park (900 linear feet). The project will incorporate living and hardened shoreline design elements to stabilize the eroding banks.

**PROJECT JUSTIFICATION**

The James River Treatment Plant and City Farm shorelines are severe exposed soil embankments with heights of approximately 15 to 20 feet. This project's completion will provide long term protection of existing infrastructure assets necessary for operating James River Treatment Plant, protection of the City's infrastructure within City Farm, and will accommodate construction of a new park trail within HRSD's open space easement as committed to in the land purchase Agreement with the City.

**FUNDING TYPE**

Funding Type: Cash

**CONTACTS**

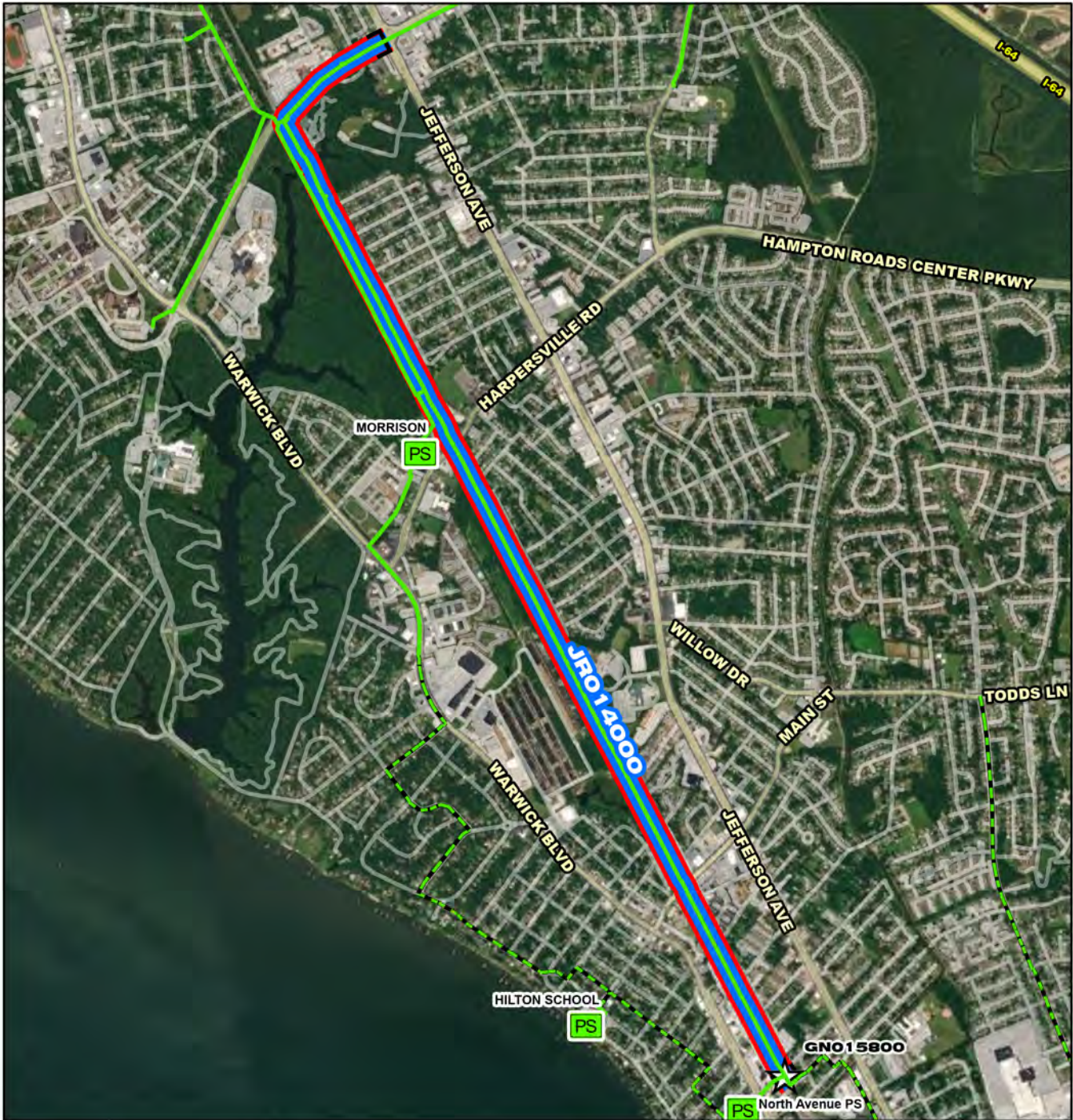
Contacts-Requesting Dept: Engineering  
Contacts-Dept Contacts: Lauren Zuravnsky  
Contacts-Managing Dept: Engineering

**PROPOSED SCHEDULE START DATE**

PrePlanning	
PER	09/01/2022
Design Delay	
Design	12/01/2020
Bid Delay	
PreConstruction	07/01/2022
Construction	10/01/2022
Closeout	08/01/2023

**COST ESTIMATE**

<b>Cost Estimate Class:</b>	<b>Class 1</b>
PrePlanning	\$0
PER	\$0
Design	\$178,482
PreConstruction	\$15,127
Construction	\$871,160
Closeout	\$0
<b>Est. Program Cost</b>	<b>\$1,064,769</b>
Contingency Budget	\$1,945,790
<b>Est. Project Costs</b>	<b>\$3,010,559</b>



**JRO 14000**

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

**Legend**

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

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

## JRO 14000

### Center Avenue Force Main Replacement

N  
W E  
S

**CIP Location**



System: James River  
Type: Pipelines

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

**PROGRAM CASH FLOW PROJECTION (\$,000)**

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$19,233	\$0	\$0	\$1,833	\$665	\$0	\$5	\$16,729	\$0	\$0	\$0	\$0

**PROJECT DESCRIPTION**

This project will replace 18,300 linear feet (LF) of 20-inch Asbestos Cement (AC) pipe from Center Avenue to NF-039 at the intersection of J. Clyde Morris Boulevard and Jefferson Avenue with 24-inch ductile iron pipe. This project will vacate the existing CSX Railroad right of way (ROW) and relocate the new force main down Jefferson Avenue or possibly another more appropriate alignment.

**PROJECT JUSTIFICATION**

The Center Avenue Force Main (NF-042) was installed in the mid-1970s. The force main follows the CSX railroad tracks from Center Avenue to J. Clyde Morris Boulevard and has extremely limited access across its entire run. The location of this force main also backs up directly behind residential areas with many privately owned encumbrances and encroachments. There have been two (2) emergency repairs completed on this pipeline since October of 2020 and both have involved failed full circle clamps that were used along this pipeline at unspecified locations. Both Spills were significant and had severe impacts on neighboring residential homes and properties.

**FUNDING TYPE**

Funding Type: Revenue Bond

**CONTACTS**

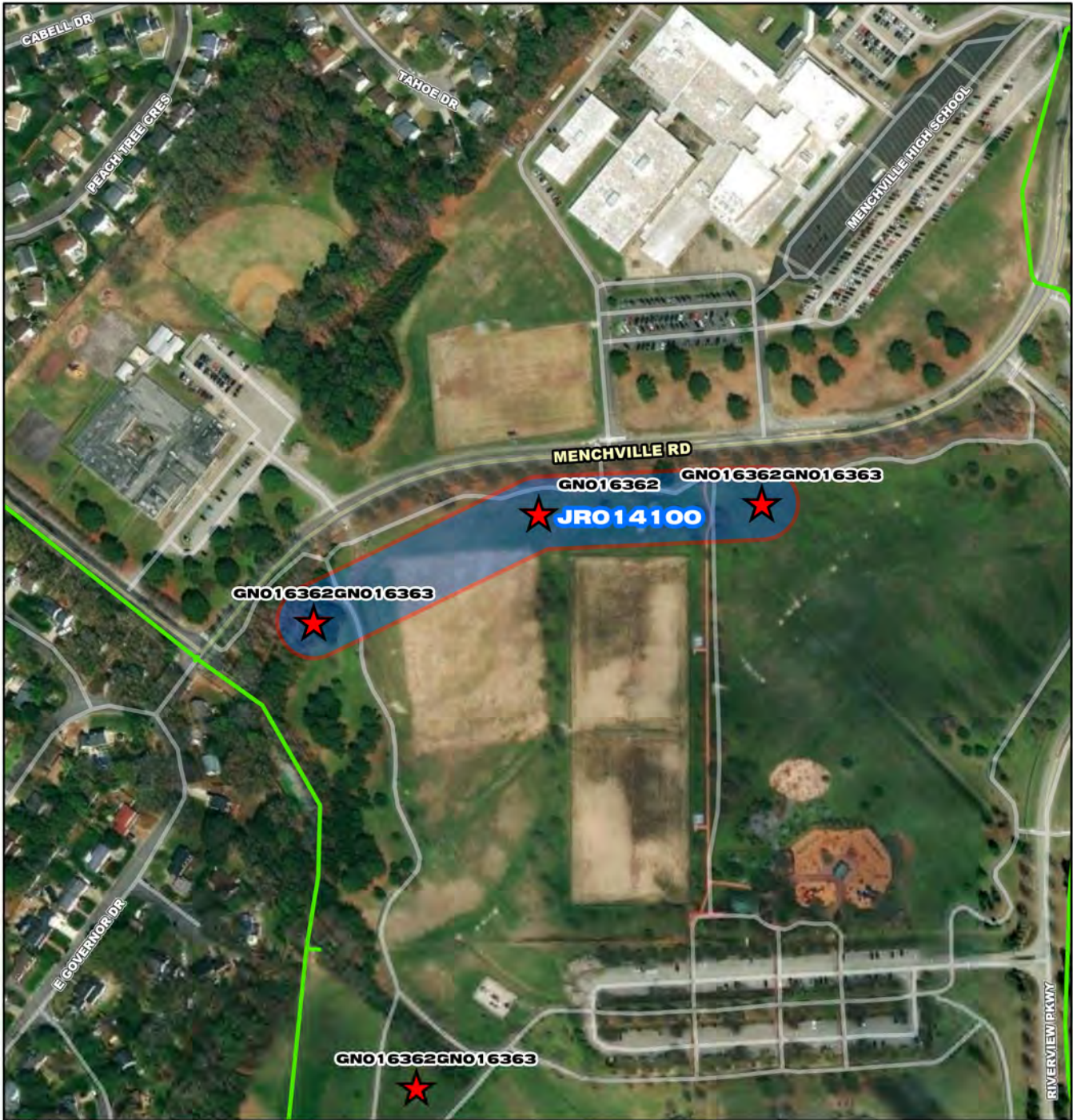
Contacts-Requesting Dept: Operations-Interceptors  
Contacts-Dept Contacts: Chris Stephan  
Contacts-Managing Dept: Engineering

**PROPOSED SCHEDULE START DATE**

PrePlanning	07/01/2024
PER	07/29/2024
Design Delay	09/17/2024
Design	05/27/2025
Bid Delay	08/28/2025
PreConstruction	05/01/2028
Construction	07/01/2028
Closeout	04/01/2029

**COST ESTIMATE**

<b>Cost Estimate Class:</b>	
PrePlanning	\$0
PER	\$501,698
Design	\$1,996,309
PreConstruction	\$5,300
Construction	\$16,723,938
Closeout	\$5,300
<b>Est. Program Cost</b>	<b>\$19,232,545</b>
Contingency Budget	\$3,344,883
<b>Est. Project Costs</b>	<b>\$22,577,428</b>

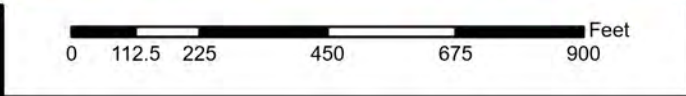


**JRO14100**

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

**Legend**

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



# JRO 14100

## James River Treatment Plant Viewshed Improvements

N  
W E  
S

**CIP Location**



System: James River  
Type: SWIFT

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

**PROGRAM CASH FLOW PROJECTION (\$,000)**

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$430	\$0	\$0	\$112	\$58	\$260	\$0	\$0	\$0	\$0	\$0	\$0

**PROJECT DESCRIPTION**

This project includes design and construction of improvements to the land surrounding James River Treatment Plant (JRTP) and Phase I trails. The project area is located within the recreation easement and along the perimeter of the JRTP fence boundary. The project will incorporate elements to reduce visibility of JRTP.

**PROJECT JUSTIFICATION**

The recent land purchase Agreement required that HRSD designed and constructed public access trails, which will be operated and maintained by the City of Newport News. A section of the Phase I trail, known as the Flax Mill Creek Trail, is located in a recreation easement closely adjacent to the perimeter of the James River Treatment Plant.

**FUNDING TYPE**

Funding Type: Cash

**CONTACTS**

Contacts-Requesting Dept: Engineering  
Contacts-Dept Contacts: Lauren Zuravnsky  
Contacts-Managing Dept: Engineering

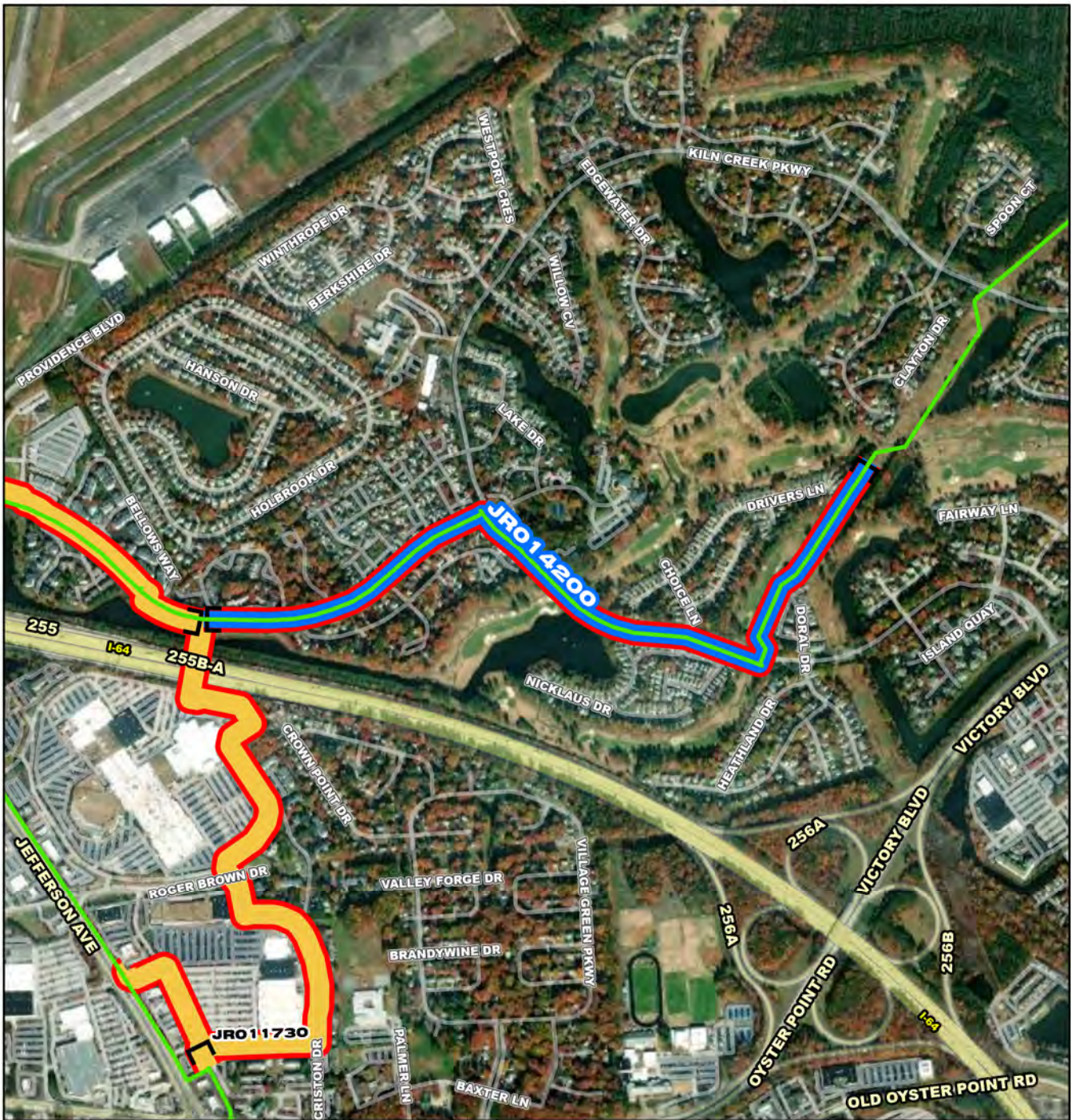
**PROPOSED SCHEDULE START DATE**

PrePlanning  
PER  
Design Delay  
Design 07/01/2024  
Bid Delay  
PreConstruction  
Construction  
Closeout

**COST ESTIMATE**

<b>Cost Estimate Class:</b>	<b>Class 5</b>
PrePlanning	\$75,000
PER	\$0
Design	\$100,000
PreConstruction	\$5,000
Construction	\$250,000
Closeout	\$0
<b>Est. Program Cost</b>	<b>\$430,000</b>
Contingency Budget	\$20,000
<b>Est. Project Costs</b>	<b>\$450,000</b>





**JRO 14200**

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

**Legend**

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

Feet

0    410    820    1,640    2,460    3,280

## JRO 14200

### Kiln Creek Interceptor Force Main Replacement

N  
W — E  
S

**CIP Location**



System: James River  
Type: Pipelines

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

**PROGRAM CASH FLOW PROJECTION (\$,000)**

Prog Cost	Exp to Previous Year	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33
\$10,734	\$0	\$705	\$1,013	\$6,361	\$2,655	\$0	\$0	\$0	\$0	\$0	\$0

**PROJECT DESCRIPTION**

This project will replace 7,100 linear feet of 24 inch Ductile Iron (DI) pipe along Brick Kiln Boulevard and Kiln Creek Parkway from the soon to be constructed Jefferson Avenue Phase III CIP to the Kiln Creek Interceptor Force Main Contract B. This project will upsize the existing pipeline from 24 inch to 30 inch.

**PROJECT JUSTIFICATION**

The Colony Area Interceptor Force Main Section B pipeline was constructed by a private developer in 1987 with the Kiln Creek residential neighborhood and turned over to HRSD. Due to complications with the developer, no as-builts were available and multiple air vents along this run were not installed at actual highpoints. This issue leads to large gas pockets that increase system pressures along with a greater risk of internal pipe corrosion. During a recent diversion these issues presented themselves in the form of significant hydraulic restriction. This project will upsize the existing Force Main to 30-inch to create a 30-inch force main loop within the James River (JR) and York River (YR) treatment plant service areas. In conjunction with Tabb Pressure Reducing Station and off-line storage infrastructure, this line will maximize wet weather capabilities and flow optimization between the JR and YR treatment plants.

**FUNDING TYPE**

Funding Type: Revenue Bond

**CONTACTS**

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

**PROPOSED SCHEDULE START DATE**

PrePlanning	07/01/2023
PER	07/01/2023
Design Delay	02/01/2024
Design	02/01/2024
Bid Delay	02/01/2025
PreConstruction	02/01/2025
Construction	06/01/2025
Closeout	12/01/2026

**COST ESTIMATE**

<b>Cost Estimate Class:</b>	<b>Class 5</b>
PrePlanning	\$0
PER	\$363,900
Design	\$818,700
PreConstruction	\$5,000
Construction	\$9,541,300
Closeout	\$5,000
<b>Est. Program Cost</b>	<b>\$10,733,900</b>
<b>Contingency Budget</b>	<b>\$1,819,300</b>
<b>Est. Project Costs</b>	<b>\$12,553,200</b>