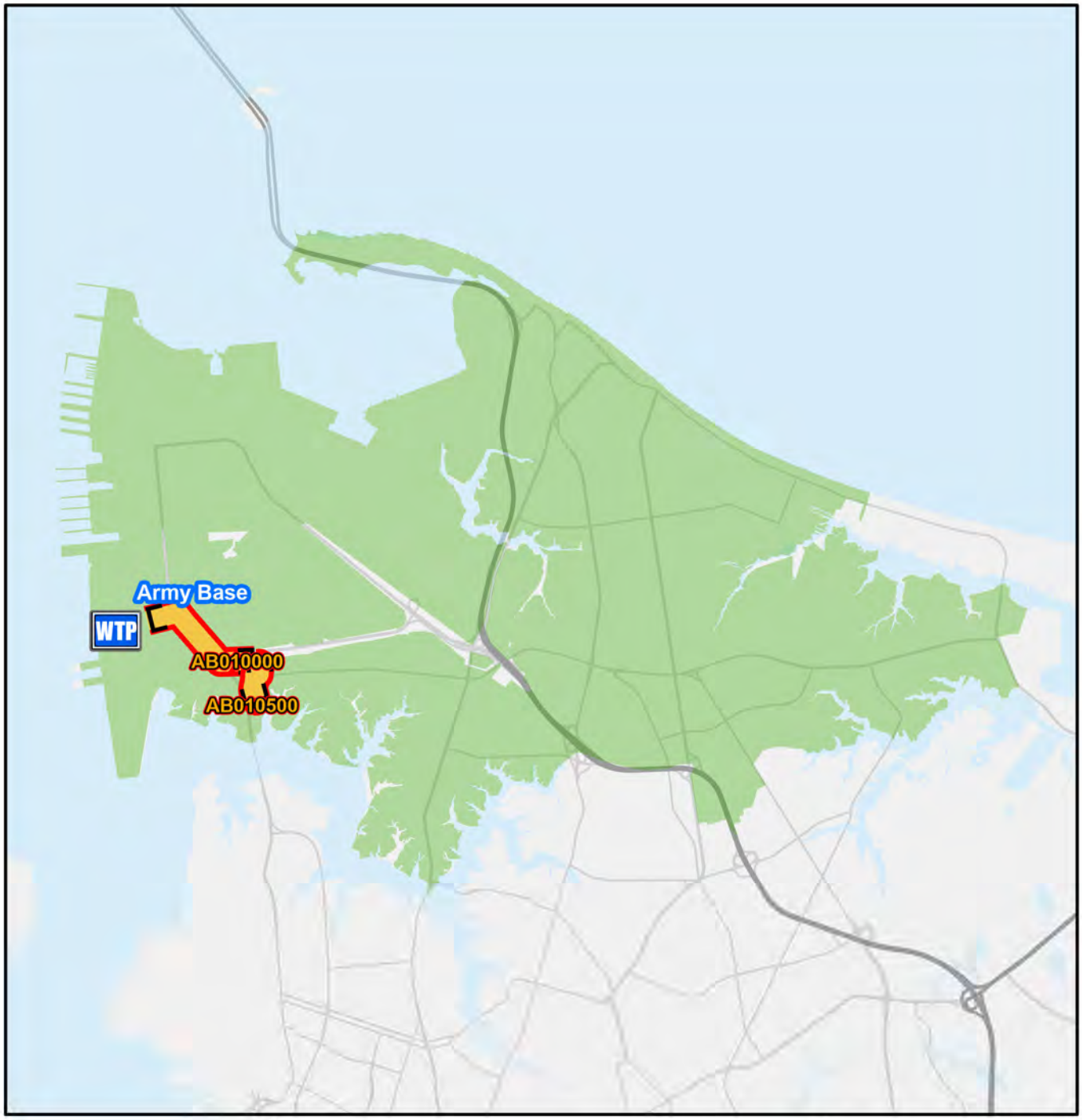
Army Base Treatment Plant

Photo Credit: J Zimba



Legend

WTP Army Base Treatment Plant

CIP Interceptor Point

CIP Pump Station Point

CIP Interceptor Line

CIP Abandonment

Treatment Plant Service Area

HRSD Interceptor Force Main

HRSD Interceptor Gravity Main

WTP HRSD Treatment Plant

PRS HRSD Pressure Reducing Station

PS HRSD Pump Station

0 1,500 3,000 6,000 9,000 12,000 Feet

Army Base Treatment Plant Service Area CIP Projects

Treatment Plant Projects

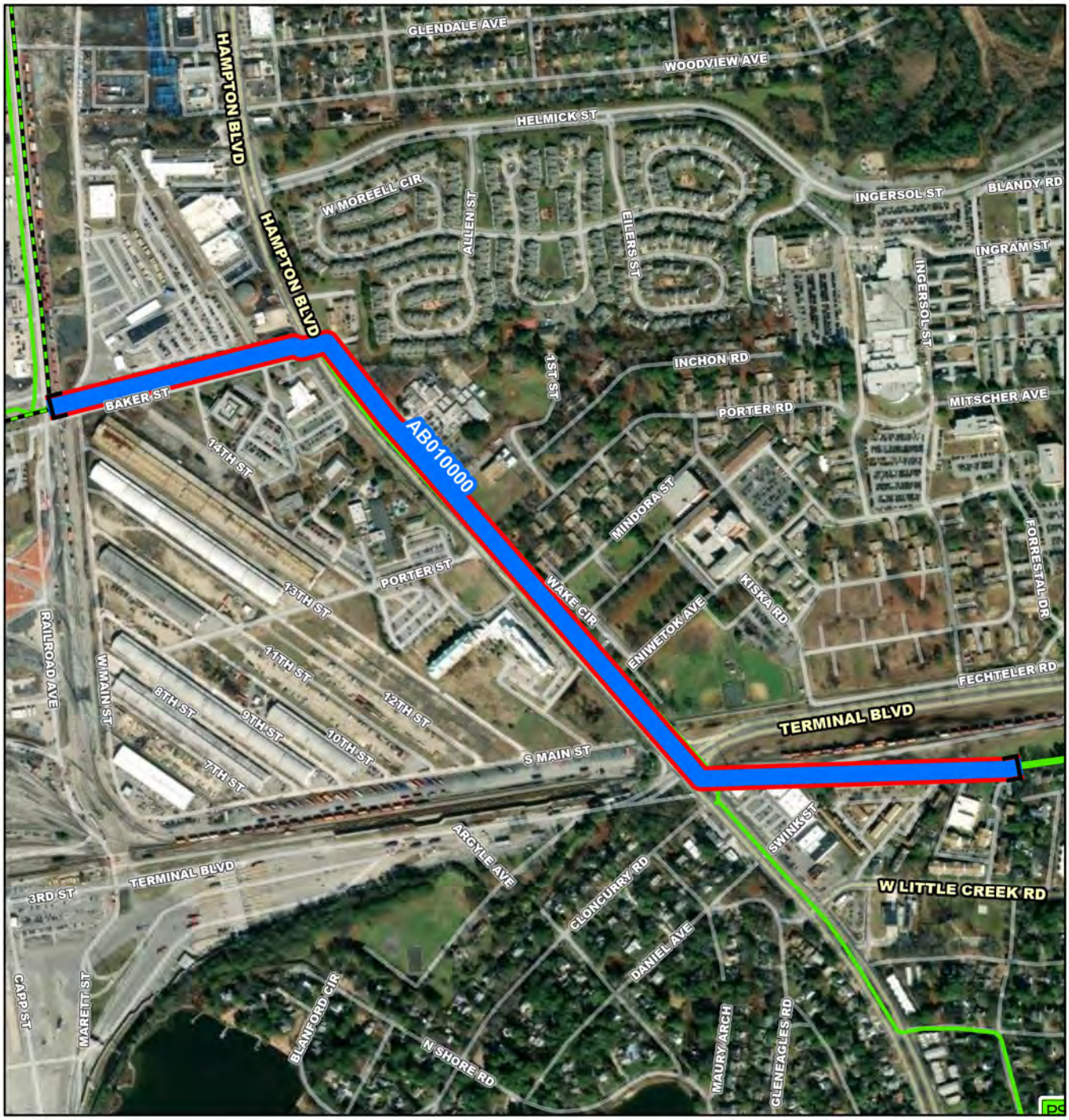
AB011900
AB012100
AB012400
GN017900

HRSD

N

CIP Location

Service Area



AB010000

- 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

AB010000

Army Base 24-Inch and 20-Inch Transmission Main Replacements

HRSD

N
W E
S

CIP Location

Army Base 24-Inch and 20-Inch Transmission Main Replacements

PR_AB010000

System: Army Base
Type: Pipelines

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35
$16,004	$2,333	$20	$20	$20	$20	$1,731	$6,754	$5,076	$30	$0	$0

PROJECT DESCRIPTION

This project is to study, design and construct a replacement interceptor for Line SF-004, 24-inch cast iron pipe and 20-inch cast iron pipe and Line SF-005, 20-inch reinforced concrete pipe from Baker Street to Newport Avenue, approximately 4,650 linear feet (LF). A single line is planned to replace these twin lines along the current alignment. This single pipeline is planned to be 36-inch in the Regional Wet Weather Management Plan. The original scope of the CIP included an additional 13,000 LF of pipeline replacement from Newport Avenue to Simons Drive. At this time, condition assessment of this additional pipe is only planned in an effort to prioritize funds on the highest risk assets. This project also includes abandoning a portion of line SG-003, a section of gravity pipe from MH-SG-003-3889 to MH-SG-003-3747 at the intersection of Baker Street and Hampton Boulevard that is not in service and is deteriorating. The EPA Rehabilitation Phase II portion of this original project has been addressed. This project is now in delay.

PROJECT JUSTIFICATION

This project will address specific sections of SF-004 that was designed and built in 1956 according to the plans inherited from the City of Norfolk. The same plans show an existing 20-inch concrete line, now HRSD line number SF-005. Since SF-005 was turned over to HRSD in 1956, it is at least 50 years old. Both lines have multiple repairs installed by HRSD and repair history prior to HRSD ownership is unknown. Multiple branch valves along this alignment are 1948 or 1956 valves that are difficult to repair or get replacement parts. The valve guide AB-2005 area will be included in the condition assessment portion of the CIP. This area has several valves indicated as inoperable and an abandoned dead-end section of pipe. These lines are the main interceptors conveying wastewater from the City of Norfolk to the Army Base Treatment Plant. This project also includes abandoning the gravity line SF-002. Flow is currently bypassing this section of pipe and the pipe is in poor condition from tuberculation and infiltration.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

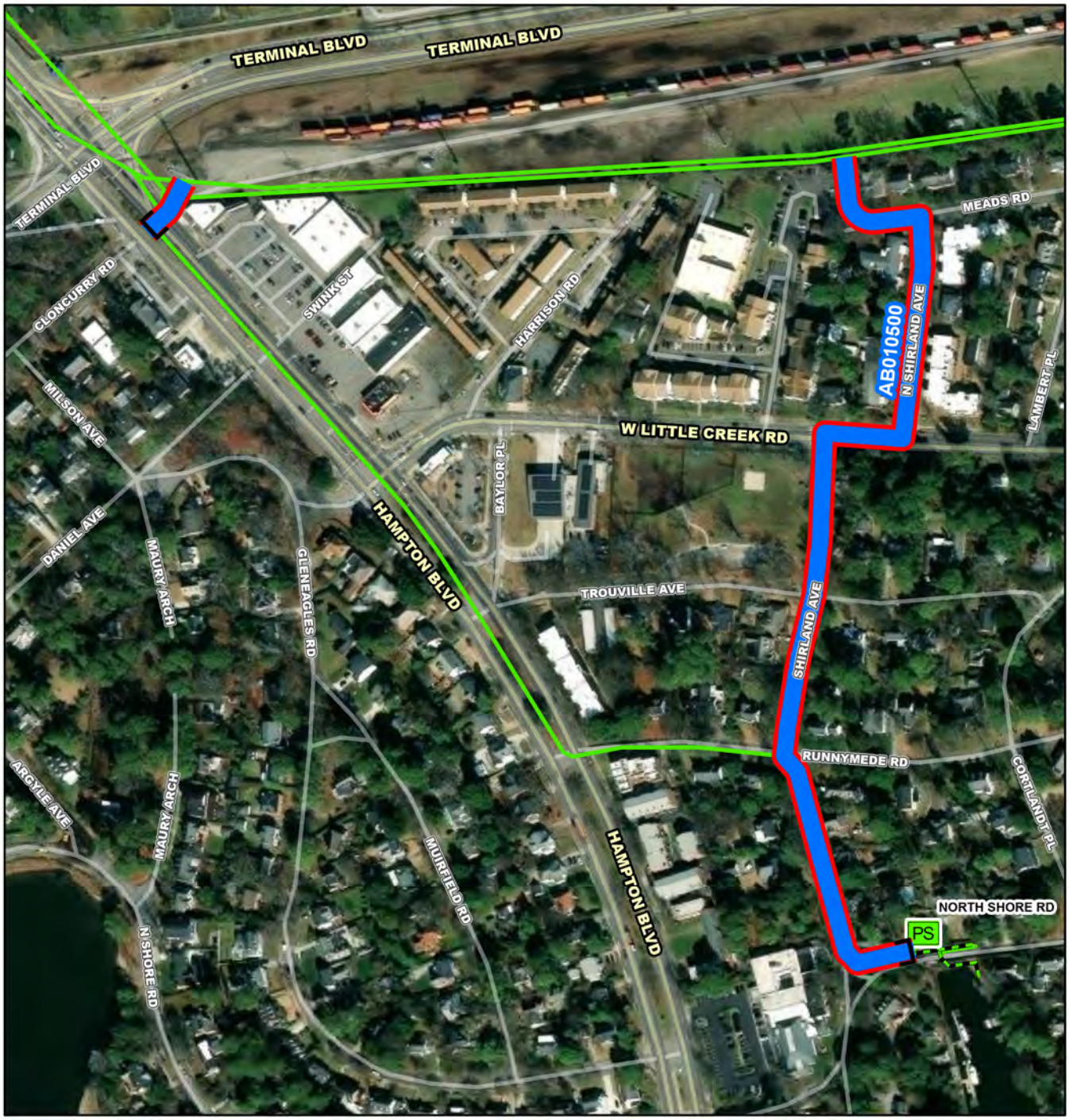
Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Kayla Rutherford
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	11/01/2012
PER	06/03/2013
Design Delay	12/03/2013
Design	03/01/2021
Bid Delay	01/01/2030
PreConstruction	01/01/2030
Construction	04/01/2030
Closeout	04/01/2032

COST ESTIMATE

Cost Estimate Class:	**Class 2 (-5% to +20%)**
PrePlanning	$0
PER	$158,936
Design	$1,837,833
PreConstruction	$32,962
Construction	$13,934,369
Closeout	$40,000
Est. Program Cost	**$16,004,100**
Contingency Budget	$2,090,155
Est. Project Costs	**$18,094,255**



AB010500

- 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

0 110 220 440 660 880 Feet

AB010500

Section W Force Main Replacement

HRSD

N
W E
S

CIP Location

Section W Force Main Replacement

PR_AB010500

System: Army Base
Type: Pipelines

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35
$4,894	$226	$2,485	$2,171	$8	$4	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project is to study, design and construct a replacement interceptor for Line SF-006, approximately 2,642 linear feet (LF) of 10-inch cast iron force main that is the discharge line from HRSD Pump Station #117 (North Shore Road). This project will include replacement main line valves, branch valves, associated appurtenances and replace the existing force main through the walls into the pump station. HART analysis has determined that this force main will be downsized from 10-inch to 8-inch.

PROJECT JUSTIFICATION

This project will replace the cast iron force main that was installed in 1948. There have been two documented repairs in 1964 and in 2005. Operations staff believes that there are additional undocumented repairs on the line, as well. The pipeline is of a material and age for which HRSD has seen recent repeated failures in other parts of the interceptor system due to wastewater chemistry and soil corrosion.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

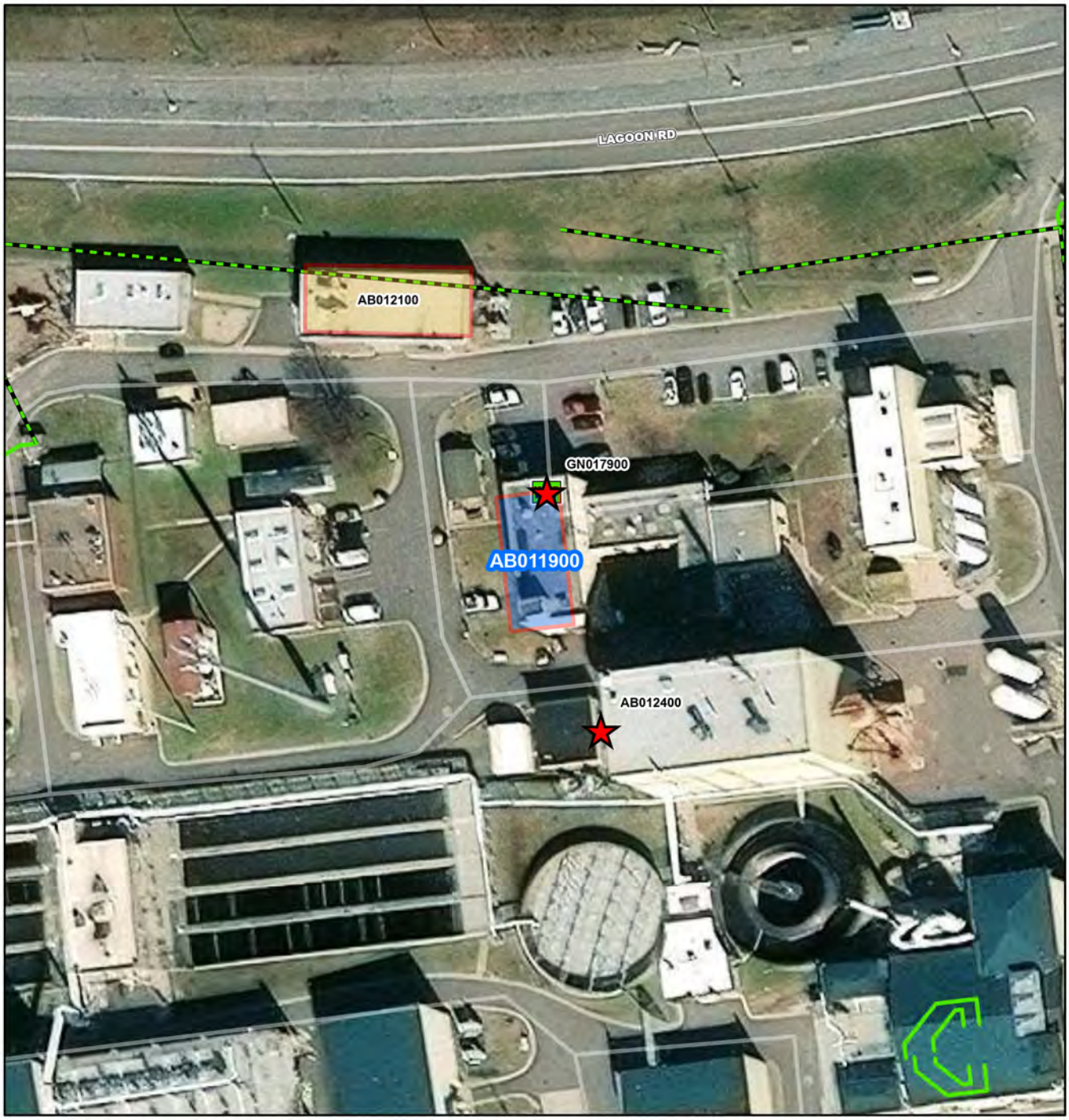
Contacts-Requesting Dept: Operations-Interceptors
Contacts-Dept Contacts: Kayla Rutherford
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	11/01/2012
PER	06/03/2013
Design Delay	12/03/2013
Design	03/01/2021
Bid Delay	07/01/2025
PreConstruction	07/01/2025
Construction	11/01/2025
Closeout	02/01/2027

COST ESTIMATE

Cost Estimate Class:	**Class 1 (-3% to +15%)**
PrePlanning	$0
PER	$19,644
Design	$205,723
PreConstruction	$7,262
Construction	$4,645,929
Closeout	$15,000
Est. Program Cost	**$4,893,558**
Contingency Budget	$464,593
Est. Project Costs	**$5,358,151**



AB011900

- 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

AB011900

Army Base Treatment Plant Administration Building Renovation (2021)

HRSD

Army Base Treatment Plant Administration Building Renovation (2021)

PR_AB011900

System: Army Base
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	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35
$9,582	$4,096	$5,486	$0	$0	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project is to renovate the existing administration building at the Army Base Treatment Plant.

PROJECT JUSTIFICATION

This project will provide additional administration offices, lunch room, conference room, lab and control area, women and unisex bathrooms.

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	09/06/2023
PER	02/01/2021
Design Delay	08/10/2023
Design	08/29/2022
Bid Delay	07/09/2024
PreConstruction	07/09/2024
Construction	09/01/2024
Closeout	02/01/2026

COST ESTIMATE

Cost Estimate Class:	**Class 1 (-3% to +15%)**
PrePlanning	$0
PER	$109,000
Design	$338,203
PreConstruction	$0
Construction	$9,129,663
Closeout	$5,185
Est. Program Cost	**$9,582,051**
Contingency Budget	$417,288
Est. Project Costs	**$9,999,339**

AB012100

- 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

AB012100

Army Base Treatment Plant Generator Control Replacement

HRSD

Army Base Treatment Plant Generator Control Replacement

PR_AB012100

System: Army Base
Type: Electrical

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35
$6,468	$247	$1,632	$4,567	$21	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project is to design and fabricate new generator controls by retrofitting the existing generator controls that have reached the end of its useful life. The redundant programmable logic controller (PLC) has failed, and replacement parts are no longer supported. The project will include a new digital master control (DMC) panel or Generator Control Panel (GCP) for monitoring, control, and protection. The existing switchgear doors and instruments will be retrofitted with new doors and instruments. In addition, control wire modifications are necessary to interface the new equipment. The project will include the installation, testing, and commissioning of the new switchgear system.

PROJECT JUSTIFICATION

The two 4.16KV 2000 kW standby diesel Cummins generators support the treatment plants process loads in the event of a utility power loss. The standby generators are critical to maintain public health, prevent process disruptions, provide ride thru capability during inclement weather, employee safety, and maintain regulatory compliance.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

Contacts-Requesting Dept: Operations-E&I
Contacts-Dept Contacts: Shirley Smith
Contacts-Managing Dept: Operations-E&I

PROPOSED SCHEDULE START DATE

PrePlanning	08/01/2023
PER	12/29/2023
Design Delay	10/01/2024
Design	02/01/2025
Bid Delay	12/01/2025
PreConstruction	12/01/2025
Construction	04/01/2026
Closeout	04/01/2027

COST ESTIMATE

Cost Estimate Class:	**Class 4 (-15% to +50%)**
PrePlanning	$0
PER	$0
Design	$296,145
PreConstruction	$63,265
Construction	$6,080,000
Closeout	$28,400
Est. Program Cost	**$6,467,810**
Contingency Budget	$1,136,000
Est. Project Costs	**$7,603,810**

Army Base Treatment Plant PdNA Process Conversion

PR_AB012200

System: General
Type: Wastewater Treatment

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35
$1,739	$0	$0	$1,304	$435	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project will involve the procurement and installation of materials to implement Partial Denitrification-Anammox (PdNA) at Army Base Treatment Plant (ABTP). The design and commissioning of this system will be led by HRSD Treatment Process Engineers, and the installation will be completed by the Operations Project Team.

PROJECT JUSTIFICATION

The implementation of PdNA at ABTP will lead to chemical savings and energy savings. Current projections include $50,000 per year in methanol, $120,000 per year in caustic and $11,000 per year in energy savings.

FUNDING TYPE

Funding Type: Revenue Bond

CONTACTS

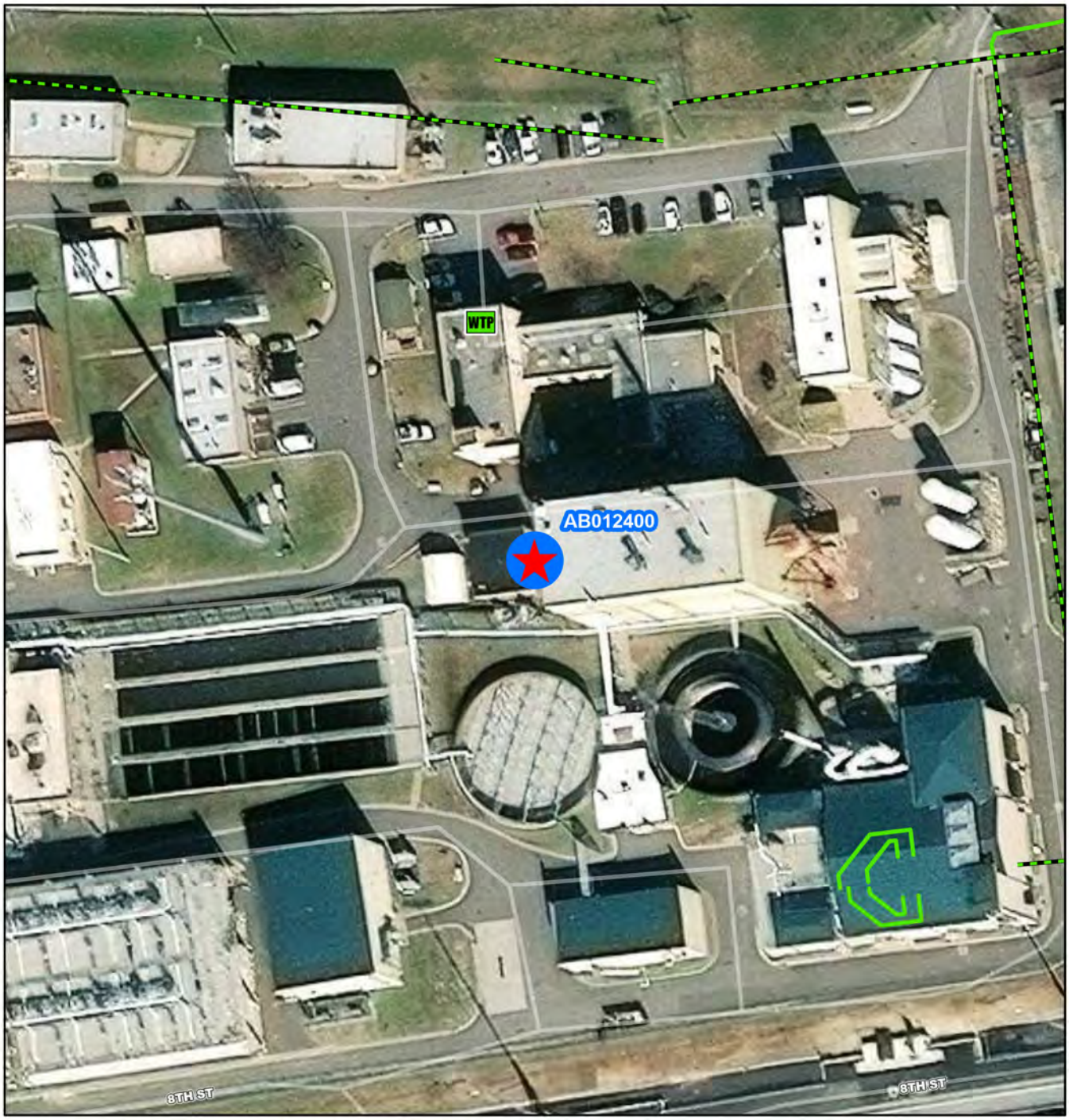
Contacts-Requesting Dept: Operations-Treatment
Contacts-Dept Contacts: Matt Poe
Contacts-Managing Dept: Operations-Treatment

PROPOSED SCHEDULE START DATE

PrePlanning	
PER	07/01/2024
Design Delay	07/01/2024
Design	11/01/2025
Bid Delay	07/01/2026
PreConstruction	07/01/2026
Construction	10/01/2026
Closeout	10/01/2027

COST ESTIMATE

Cost Estimate Class:	**Class 4 (-15% to +50%)**
PrePlanning	$0
PER	$0
Design	$0
PreConstruction	$0
Construction	$1,738,880
Closeout	$0
Est. Program Cost	**$1,738,880**
Contingency Budget	$347,776
Est. Project Costs	**$2,086,656**



AB012400

- 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

AB012400

Army Base Treatment Plant Fire Suppression System Upgrades

HRSD

Army Base Treatment Plant Fire Suppression System Upgrades

PR_AB012400

System: Army Base
Type: Wastewater Treatment

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

PROGRAM CASH FLOW PROJECTION ($,000)

Prog Cost	Exp to Previous Year	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35
$2,651	$0	$1,186	$1,460	$5	$0	$0	$0	$0	$0	$0	$0

PROJECT DESCRIPTION

This project will address the replacement or upgrades of the fire suppression system at the Army Base 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: Charles Bott
Contacts-Managing Dept: Engineering

PROPOSED SCHEDULE START DATE

PrePlanning	06/01/2025
PER	06/01/2025
Design Delay	08/01/2025
Design	08/01/2025
Bid Delay	12/01/2025
PreConstruction	12/01/2025
Construction	03/01/2026
Closeout	12/01/2026

COST ESTIMATE

Cost Estimate Class:	**Class 5 (-20% to +100%)**
PrePlanning	$0
PER	$0
Design	$0
PreConstruction	$23,990
Construction	$2,614,910
Closeout	$11,995
Est. Program Cost	**$2,650,895**
Contingency Budget	$662,724
Est. Project Costs	**$3,313,619**