Army Base Treatment Plant

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Photo Credit: J Zimba







System: Army Base Type: Pipelines Army Base 24-Inch and 20-Inch Transmission Main Replacements

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

PROGRAM CASH FLOW PROJECTION (\$,000)

Brog Cost	Exp to	EV25	EV26	EV 27	EV29	EV20	EV20	EV21	EV22	EV22	EV24
Prog Cost	Previous rear	F125	F120	FT2/	F120	F129	FT3U	FT31	FT32	FT33	F134
\$15,103	\$2,320	\$0	\$0	\$1,593	\$6,372	\$4,789	\$30	\$0	\$0	\$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		CONTACTS	
Funding Type:	Revenue Bond	Contacts-Requesting Dept Contacts-Dept Contacts: Contacts-Managing Dept:	t: Operations-Interceptors Shirley Smith Engineering
PROPOSED SC	HEDULE START DATE	COST ESTIMATE	
PrePlanning PER Design Delay Design Bid Delay PreConstruction Construction Closeout	11/01/2012 06/03/2013 12/03/2013 03/16/2021 01/01/2027 01/01/2027 04/01/2027 04/01/2029	Cost Estimate Class: PrePlanning PER Design PreConstruction Construction Closeout Est. Program Cost Contingency Budget	Class 3 \$0 \$158,936 \$1,734,577 \$0 \$13,169,758 \$40,000 \$15,103,271 \$1,982,200
		Est. Project Costs	<u>\$17,085,471</u>





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	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
\$2,885	\$207	\$1,600	\$1,070	\$8	\$0	\$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.

	CONTACTS		
Revenue Bond	Contacts-Requesting Dept: Contacts-Dept Contacts: Contacts-Managing Dept:	Operations-Interceptors Shirley Smith Engineering	
HEDULE START DATE	COST ESTIMATE		
11/01/2012 06/03/2013 12/03/2013 03/16/2021 01/01/2023 06/01/2024 10/01/2024 01/01/2026	Cost Estimate Class: PrePlanning PER Design PreConstruction Construction Closeout Est. Program Cost Contingency Budget Est. Project Costs	Class 2 \$0 \$19,644 \$184,833 \$7,262 \$2,657,856 \$15,000 \$2,884,595 \$482,000 \$3,366,595	
	Revenue Bond HEDULE START DATE 11/01/2012 06/03/2013 12/03/2013 03/16/2021 01/01/2023 06/01/2024 10/01/2024 01/01/2026	CONTACTSRevenue BondContacts-Requesting Dept: Contacts-Dept Contacts: Contacts-Managing Dept:HEDULE START DATECOST ESTIMATE11/01/2012Cost Estimate Class: PrePlanning 12/03/201306/03/2013PrePlanning PER 03/16/202103/16/2021Design PreConstruction Construction Construction 10/01/202401/01/2024Closeout Est. Program Cost Contingency Budget	CONTACTSRevenue BondContacts-Requesting Dept: Contacts-Dept Contacts: Contacts-Dept Contacts: Contacts-Managing Dept:Operations-Interceptors Shirley Smith EngineeringHEDULE START DATECOST ESTIMATE11/01/2012 06/03/2013Cost Estimate Class: PrePlanningClass 2 \$0 \$0 \$12/03/201312/03/2013 01/01/2023PER PER \$19,64403/16/2021 06/01/2024 01/01/2023Design PreConstruction \$184,83301/01/2024 01/01/2024Construction \$2,657,856 Construction \$15,00001/01/2026Est. Program Cost \$2,884,595 Contingency Budget \$482,000 Est. Project Costs





Army Base Treatment Plant Administration Building Renovation (2021)

System: Type: Army Base Facilities, Buildings and Capital Equipment

Driver Category:Aging Infrastructure/RehabilitationProject Phase:DesignRegulatory:None

Prog Cost	Exp to Previous Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
\$9,829	\$1,698	\$7,496	\$635	\$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		CONTACTS	
Funding Type:	Revenue Bond	Contacts-Requesting Dept: Contacts-Dept Contacts: Contacts-Managing Dept:	Operations-Treatment Tim Marsh Engineering
PROPOSED SCI	HEDULE START DATE	COST ESTIMATE	
PrePlanning PER Design Delay Design Bid Delay PreConstruction Construction Closeout	07/01/2020 02/01/2021 08/31/2022 08/31/2022 02/12/2024 02/12/2024 05/12/2024 08/12/2025	Cost Estimate Class: PrePlanning PER Design PreConstruction Construction Closeout Est. Program Cost Contingency Budget Est. Project Costs	Class 1 \$0 \$109,000 \$334,418 \$5,000 \$9,370,318 \$10,000 \$9,828,736 \$937,031 \$10,765,767





System:	Army Base
Type:	Electrical

Army Base Treatment Plant Generator Control Replacement

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

PROGRAM CASH FLOW PROJECTION (\$,000)

	Exp to	EVAL	51/00	51/05	51/00	51/00	51/00	EV64	Files	Fires	51/0 /
Prog Cost	Previous Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
\$4,111	\$185	\$1,407	\$2,001	\$518	\$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 has 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 supports 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		CONTACTS		
Funding Type:	Revenue Bond	Contacts-Requesting Dept: Contacts-Dept Contacts: Contacts-Managing Dept:	Operations-E&I Shirley Smith Operations-E&I	
PROPOSED SCI	HEDULE START DATE	COST ESTIMATE		
PrePlanning PER Design Delay Design Bid Delay PreConstruction Construction Closeout	08/01/2023 01/31/2024 02/01/2024 02/01/2024 08/01/2024 08/01/2024 11/01/2024 10/01/2026	Cost Estimate Class: PrePlanning PER Design PreConstruction Construction Closeout Est. Program Cost Contingency Budget Est. Project Costs	Class 5 \$0 \$0 \$222,326 \$35,539 \$3,835,355 \$17,594 \$4,110,814 \$703,735 \$4,814,549	



Army Base Treatment Plant PdNA Process Conversion

PR_AB012200

System: Type: General Wastewater Treatment Driver Category: Performance Upgrades Project Phase: Proposed Regulatory: None

PROGRAM CASH FLOW PROJECTION (\$,000)

Prog Cost	Exp to Previous Year	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34
\$1,672	\$0	\$0	\$1,672	\$0	\$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		CONTACTS		
Funding Type:	Revenue Bond	Contacts-Requesting Dept: Contacts-Dept Contacts: Contacts-Managing Dept:	: Operations-Treatment Matt Poe Operations-Treatment	
PROPOSED SC	HEDULE START DATE	COST ESTIMATE		
PrePlanning PER Design Delay Design Bid Delay PreConstruction Construction Closeout	07/01/2024 07/01/2024 07/01/2024 03/01/2025 03/01/2025 07/01/2025 07/01/2025	Cost Estimate Class: PrePlanning PER Design PreConstruction Construction Closeout Est. Program Cost Contingency Budget Est. Project Costs	Class 5 \$0 \$0 \$0 \$1,672,000 \$334,400 \$2,006,400	