



Division of Water Resources / State Revolving Fund Loan Program

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FINDING OF NO SIGNIFICANT IMPACT
Approval of Facilities Plan
Smith Utility District (Smith County), Tennessee
Loan No. DW5 2016-182

October 7, 2016

The National Environmental Policy Act requires federally designated agencies to determine whether a proposed major agency action will significantly affect the environment. One such major action, defined by the Safe Drinking Water Act (SDWA), is the approval of a facilities plan prepared pursuant to EPA 816-R-97-005, Final Guidelines. In making this determination, the State Revolving Fund Loan Program assumes that all facilities and actions recommended by the plan will be implemented. The State's analysis concludes that implementing the plan will not significantly affect the environment; accordingly, the State Revolving Fund Loan Program is issuing this Finding of No Significant Impact (FNSI) for public review.

The Smith Utility District (UD) has completed the facilities plan entitled "Smith Utility District Water Line Improvements" dated January 2016. The facilities plan provides recommendations for improvements to the existing water distribution system serving the Smith UD (Smith County), Tennessee. This project will consist of replacing approximately 19,350 linear feet (LF) of existing 8-inch and 6-inch diameter polyvinyl chloride (PVC) water lines in South Carthage in areas along South Main Street and Downtown Cedar Street with high-density polyethylene (HDPE) and/or PVC water lines. The total estimated project cost is \$1,464,500. A Drinking Water State Revolving Fund (DWSRF) loan in the amount of \$1,464,500 has been requested for this project. This project will be funded with a \$1,098,375 loan and \$366,125 in principal forgiveness that will not have to be repaid by the Smith UD.

Attached is an Environmental Assessment containing detailed information supporting this action. Comments supporting or disagreeing with this proposed action received within 30 days of the date of this FNSI will be evaluated before we make a final decision to proceed.

If you wish to comment or to challenge this FNSI, send your written comment(s) to:

Mr. Sam R. Gaddipati, Environmental Manager
Division of Water Resources, State Revolving Fund Loan Program
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312 Rosa L. Parks Avenue, Nashville, TN 37243

or call or e-mail (615) 532-0462 or sam.gaddipati@tn.gov.

ENVIRONMENTAL ASSESSMENT

**Smith Utility District (Smith County), Tennessee
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A. PROPOSED FACILITIES AND ACTIONS; FUNDING STATUS

The Smith Utility District (UD) has completed the facilities plan entitled “Smith Utility District Water Line Improvements” dated January 2016. The facilities plan provides recommendations for improvements to the existing water distribution system serving the Smith UD (Smith County), Tennessee. This project will consist of replacing approximately 19,350 linear feet (LF) of existing 8-inch and 6-inch diameter polyvinyl chloride (PVC) water lines in South Carthage in areas along South Main Street and Downtown Cedar Street with high-density polyethylene (HDPE) and/or PVC water lines. The service area and project location are indicated on Figure No. 1 of this Environmental Assessment.

FUNDING STATUS

The facilities described above comprise the scope of the Loan Nos. DW5 2016-182 scheduled for funding in fiscal year 2017. The estimated project costs are summarized in the following tabulation:

<u>PROJECT CLASSIFICATIONS</u>	<u>COSTS (\$)</u>
Administrative & Legal	\$10,000
Planning Fees	\$7,500
Design Fees	\$85,000
Engineering Basic Fees	\$18,000
Other Engineering Fees	\$9,000
Resident Inspection	\$90,000
Construction	\$1,132,000
Contingencies	\$113,000
TOTAL	\$1,464,500
Drinking Water State Revolving Fund (DWSRF) Loan	\$1,098,375
Amount Designated for Principal Forgiveness (Will not have to be repaid)	\$366,125

The Smith UD has requested a \$1,464,500 DWSRF loan for this project. This project will be funded with a \$1,098,375 loan and \$366,125 in principal forgiveness that will not have to be repaid by the Smith UD.

B. EXISTING ENVIRONMENT

The Smith UD’s Service Area is located in Smith County in the middle part of Tennessee. Existing environmental features are described below:

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SURFACE WATERS

Surface waters within the proposed service area include the Caney Fork River and its unnamed tributaries. Designated uses for the Caney Fork River include domestic water supply, industrial water supply, fish and aquatic life, recreation, irrigation, livestock watering and wildlife, and navigation. The Smith UD's Water Treatment Plant (WTP) obtains raw water from a surface water intake on the Caney Fork River. Treated effluent from the Town of Gordonsville's and Town of Carthage's Wastewater Treatment Plants is discharged into the Cumberland River, downstream of the confluence of the Caney Fork River.

GROUNDWATER

The Smith UD's Service Area is located in the Highland Rim aquifer system, which consists primarily of Mississippian limestone. Groundwater is transmitted along joints, fractures, bedding planes, and weathered zones in this limestone. There are no known sources of groundwater intakes for drinking water within the proposed project area. Wells or groundwater sources in the proposed project area are currently used for watering livestock, gardens, and purposes other than human consumption.

SOILS

Soil associations occurring predominantly in the Smith UD's Service Area include the Armor-Arrington, Mimosa-Ashwood-Rock Outcrop and Sandhill-Inman-Hicks.

Armor-Arrington soils consists of very deep loamy soils found on moderately steep slopes. These soils are well drained soils formed in silty alluvium.

Mimosa-Ashwood-Rock Outcrop soils consists of deep to moderately deep clayey soils and limestone outcrops found on sloping to steep slopes. These soils are formed in material weathered from limestone on hills and ridges.

Sandhill-Inman-Hicks soils consists of deep to moderately deep loamy or clayey subsoil found on gently sloping to steep slopes. These soils are formed in weathered interbedded limestone, shale and siltstone on hills and ridges.

TOPOGRAPHY

The Smith UD's Service Area is located in the Highland Rim Physiographic Province and consists of flat to moderately hilly terrain with ten percent or less slopes. Outcroppings of hard limestone are common. The elevation ranges from approximately 495 to 750 feet above mean sea level.

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OTHER ENVIRONMENTAL FEATURES

No wild or scenic rivers or unique agricultural, scientific, cultural, ecological, or natural areas were identified in the Smith UD's Service Area.

C. EXISTING WATER FACILITIES

The Smith UD owns and operates a 3.0 million gallons per day (MGD) WTP and distribution system. The Smith UD provides drinking water to approximately 9,020 customers in South Carthage, Hickman, Gordonsville, Pope's Hill, Elmwood, Pea Ridge, and Grant. The 25 UD, William L. Bonnell Company, the Town of Alexandria, and the Southside UD all purchase water from the Smith UD.

Smith UD's WTP was originally constructed in 1963, and last upgraded in 2007 to its 3.0 MGD capacity. The WTP is a conventional filtration plant with anthracite/sand filters that consists of a raw water intake on the Caney Fork River and two 2,100 gallon per minute (GPM) high service pumps.

The water distribution system consists of 127 miles of 2-inch through 16-inch diameter polyvinyl chloride (PVC) and high-density polyethylene (HDPE) water lines; six pump stations; and eight storage tanks with a total capacity of 2.37 million gallons.

D. NEED FOR PROPOSED FACILITIES AND ACTIONS

The existing water lines on South Main Street and the Downtown Cedar Street areas of South Carthage are aging and at the end of their useful life. Many of the existing water lines are over 50 years old. The number of leaks has become more frequent. The Smith UD has repaired leaking water lines on South Main Street, Bright Street, South Davis Street, Cedar Street, and Read Avenue approximately ten times within the last year. These leaks result in large volumes of unaccounted water and a disruption of service to the customers in the area. The replacement of these old water lines will reduce water loss and provide the Smith UD's customers with a safe and dependable supply of drinking water.

Existing and projected facility conditions are shown in the following chart:

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EXISTING AND PROJECTED FACILITY CONDITIONS

<u>POPULATION</u>	<u>EXISTING (2016)</u>	<u>PROJECTED (2036)</u>
Smith UD Service Area	7,686	9,915
Percent Served	95%	98%
Service Area Excluding Smith UD	1,334	1,374
Percent Served	100%	100%
Total Service Area	8,636	11,091
Percent Served	96%	98%

<u>WATER NEEDS (gpd)</u>	<u>EXISTING (2016)</u>	<u>PROJECTED (2036)</u>
Residential	458,000	555,000
Commercial/Industrial	658,000	798,000
Unaccounted for Water	116,000	140,000
TOTAL	1,232,000	1,493,000

E. ALTERNATIVES ANALYSIS

Several alternatives were evaluated in the January 2016 Facilities Plan. Discussions of the evaluation of these alternatives and the recommended plan are following:

NO-ACTION

The no-action alternative is not a viable option. The existing water lines along South Main Street and the Downtown Cedar Street areas of South Carthage will continue to need repairs. Repeated repairs in the same area are costly and time consuming. Therefore this alternative is rejected.

SYSTEM POINT REPAIRS

This alternative consists of completing point repairs to short segments of water lines where leaks and breaks occur. Using this method to eliminate multiple leaks and breaks in a water line is a temporary fix and does not improve the overall condition of the old water lines. Therefore, this alternative is not the most cost-effective alternative and is rejected.

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REPLACEMENT OF EXISTING PVC WATER LINES WITH WATER LINES USING PIPE BURSTING METHODS

This alternative consists of replacing the old and leaking water lines with lines using pipe bursting methods. The replacement of existing water lines with this method will have a greater capital cost. Therefore this alternative is not the most cost-effective alternative and is rejected.

REPLACEMENT OF THE PVC WATER LINES WITH NEW PVC OR HDPE WATER LINES

This alternative consists of replacing the old and leaking water lines with new lines having approximately the same diameter as the lines being replaced. Replacement of water lines with new water lines would alleviate repeated maintenance and repairs and would provide the Smith UD's customers with a safe and dependable supply of drinking water. This alternative is the most cost-effective and is selected.

F. ENVIRONMENTAL CONSEQUENCES; MITIGATIVE MEASURES

The environmental benefits of this project will be the reduced water losses and a more reliable source of drinking water for the Smith UD customers.

During the construction phase, short-term environmental impacts due to noise, dust, mud, disruption of traffic, runoff of silt with rainfall, etc., are unavoidable. Minimization of these impacts will be required; however, many of these minimization measures will only be temporary. Using the following measures to prevent erosion will minimize impacts on the environment:

1. Specifications will include temporary and permanent measures to be used for controlling erosion and sediment.
2. Soil or landscaping maintenance procedures will be included in the specifications.
3. The contractor will develop an Erosion Control Plan. It should contain a construction schedule for each temporary and permanent measure controlling erosion and sediment. It should include the location, type, and purpose for each measure and the times when temporary measures will be removed or replaced.

These measures, along with requiring the contractor to return the construction site to as-good-as or better-than its original condition, will prevent any adverse impacts due to erosion.

A Section 10 and/or a Section 404 Permit will be obtained from the U.S. Army Corps of Engineers, if required, prior to the start of construction.

No adverse impacts on the floodplain are anticipated since only buried pipe is proposed in the floodplain.

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G. PUBLIC PARTICIPATION; SOURCES CONSULTED

A Public Meeting was held on June 23, 2016 at 7:00 p.m., local time. The selected plan for water treatment and distribution and user charges were described to the public, and their input was received. This agency is not aware of any unresolved public objections that may have been voiced before or after the public meeting regarding this project.

The annual median household income for the Smith UD is \$46,211. The current user rate for the typical residential user (5,000 gallons per month) will increase from \$33.40 to \$35.38 per month on January 1, 2017. The total incremental annual cost for this project is \$23.76, which is less than 0.05 percent of the current annual household median income.

Sources consulted about this project for information or concurrence were:

1. Tennessee Department of Agriculture
2. Tennessee Department of Economic and Community Development
3. Tennessee Department of Environment and Conservation (TDEC), Division of Air Pollution Control
4. Tennessee Department of Transportation
5. TDEC, Division of Water Resources
6. Tennessee Historical Commission
7. TDEC, Division of Archaeology
8. Tennessee Geological Survey
9. TDEC, Division of Solid Waste Management
10. Tennessee Wildlife Resources Agency
11. United States Army Corps of Engineers (USACE)
12. United States Fish and Wildlife Service
13. Smith Utility District (Smith UD)
14. Smith County
15. Warren & Associates Engineering

H. SPECIAL CONDITIONS

The State Revolving Fund loan agreement will have the following special condition:

The Smith UD shall obtain applicable Section 10/404 Permits from the USACE to meet the requirements of wetlands protection and stream-crossing statutes. A letter from the USACE stating that the permits are not needed will obviate this requirement.