

Texas Water Development Board

City of Arlington

CWSRF GREEN PROJECT RESERVE BUSINESS CASE EVALUATION

STATE FISCAL YEAR 2016 INTENDED USE PLAN

PROJECT NUMBER 73723

COMMITMENT DATE: February 18, 2016

DATE OF LOAN CLOSING: May 26, 2016

Green Estimate at closing is \$ 2,439,700

Subsidy awarded for Green components \$359,700

Green Project Reserve

Green Project Information Worksheets

**Clean Water State Revolving Plan
Intended Use Plan**

The Federal Appropriation Law for the current fiscal year Clean Water and Drinking Water State Revolving Fund programs contains the Green Project Reserve (GPR) requirement. The following Green Project Information Worksheets have been developed to assist TWDB Staff in verifying eligibility of potential GPR projects.

TEXAS WATER DEVELOPMENT BOARD
CLEAN WATER STATE REVOLVING FUND (CWSRF)
GREEN PROJECT INFORMATION WORKSHEETS

PART I – GREEN PROJECT INFORMATION

General Project Information

Applicant: City of Arlington Project #: 11083

Project Name: Collection System Improvements 2015

Contact Name: Wayne Hunter, P.E.

Contact Phone and e-mail: (214) 951-0807 wayne.hunter@rpsgroup.com

Brief Overall Project Description:

The City of Arlington's Collection System Improvements 2015 includes two sets of projects, improvements to Matlock and Tucker and Wren as a part of planned street improvements and Phase 2 of the 2014 Residential Rebuilds, all of which are replacement segments within the city's collection system. The City intends to replace approximately 16,525 linear feet of sanitary sewer mains ranging in size from 6-inches to 10-inches. The largest segment of sewer lines are located in the area northwest of East Mayfield Road and Allen Avenue. Additional segments are located southwest of California Lane and Medlin Drive and along Samuels Lane. Two other project locations are along Tucker Blvd and Wren Drive as well as along Matlock Road.

**TEXAS WATER DEVELOPMENT BOARD
CLEAN WATER STATE REVOLVING FUND (CWSRF)
GREEN PROJECT INFORMATION WORKSHEETS**

Check all that apply and complete applicable worksheets:

Categorically Eligible

- Green Infrastructure \$ _____
- Water Efficiency \$ _____
- Energy Efficiency \$ _____
- Environmentally Innovative \$ _____

Business Case Eligible

- Green Infrastructure \$ _____
- Water Efficiency \$ _____
- Energy Efficiency \$ 2,398,000
- Environmentally Innovative \$ _____

Total Requested Green Amount \$ 2,398,000

Total Requested Funding Amount \$ 2,398,000

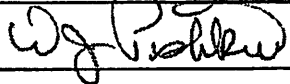
Type of Funding Requested:

- PAD (Planning, Acquisition, Design)
- C (Construction)

Completed by:

Name: Walter J. Pishkur

Title: Director of Utilities

Signature: 

Date: 10/19/15

3.0 Energy Efficiency

Certain energy efficiency improvements may be considered business case eligible for the GPR. Refer to EPA and TWDB GPR guidance for a complete list and description of business case eligible GPR Projects. A few common types of energy efficiency projects that may be considered business case eligible, such as projects for energy efficiency (less than 20% energy efficiency improvement) and projects that eliminate pump stations (lift stations) are listed below. Complete Sections 3.1 and 3.2 if applicable. For any other energy efficiency improvement being considered for business case eligibility, complete Section 3.3.

3.1 - Energy Efficiency Improvements (< 20% improvement)

Provide a detailed description of the proposed project that result in a substantial reduction in energy consumption. Describe operation of the existing system and provide sufficient information establishing the base energy demand. Describe the proposed improvements providing sufficient detail to demonstrate that the proposed efficiencies will be achievable. Quantify all energy and financial savings. Attach supporting calculations.

Energy efficiency improvements to be considered for business case eligibility should provide reference to completed planning material such as energy assessments, energy audits, optimization studies and design level project information.

Reference Completed Planning/Design Material:

- PEFR Collection System Improvements 2015
- _____
- _____

(Provide Business Case on following page)

Business Case (attach additional pages if necessary):

The City of Arlington's Collection System Improvements 2015 are replacement segments within the city's collection system. The City's collection system discharges to the Trinity River Authority's Central Regional Wastewater System for transporting and treating wastewater flows generated within the city's system. The city pays a cost of \$2.33/1000 gallons transported and treated to TRA for all flows received. A wastewater master plan was developed in 2009 by the City of Arlington, which included wastewater flow monitoring during dry and wet weather periods. When focusing on these five sets of proposed replacement segments making up the Collection System Improvements 2015 project pipelines to be replaced, this flow monitoring recorded an I/I amount totaling 96,178 gallons per day. The design criteria to be used for the replacement projects will have a design life of 50 years. It is appropriate to then apply the amount of I/I to be removed with the projects and the period of service life of the proposed pipelines to account for the benefit. This I/I equates to a cost to the city for transportation and treatment of \$4,089,720 over the service life of the improvements. The construction costs for implementing the Projects are \$2,837,424. This proposed construction cost is less than the cost of the I/I resulting from no action. However, as the construction bids for the project may be lower, only \$2,398,000 is being requested in this application. TWDB guidance TWDB-0161, Part A - CWSRF, section 3.5-4 establishes that the criteria for the required business case is cost effectiveness, which can be demonstrated with a benefit that exceeds the cost. Attached is detailed a breakdown of each project segment, including the opinion of probable construction costs and the predicted I/I to be removed as a result.

2014 Residential Rebuilds - Phase 2											
Location: North of East Mayfield Road and west of Allen Avenue											
Item Description	Quantity (ft) or (ea)	Diameter (inch)		Unit Price		Segment Cost		Total Estimated Constr. Cost		Total Estimated Project Cost	
		Existing	Upsized	Existing	Upsized	Replacement	Upsized	Replacement	Upsized	Replacement	Upsized
8" Pipe 0-8', Deep (ft)	4,615	6	8	\$85	\$100	\$392,275	\$461,500				
12" Pipe 8-16', Deep (ft)	2,070	6	12	\$105	\$125	\$217,350	\$258,750				
12" Pipe 8-16', Deep (ft)	3,910	10	12	\$125	\$150	\$488,750	\$586,500				
8" Pipe 0-8', Deep (ft)	2,160	6	8	\$85	\$100	\$183,600	\$216,000				
8" Pipe 0-8', Deep (ft)	200	6	8	\$85	\$100	\$17,000	\$20,000				
60" Diameter Manhole (ea)	52			\$5,000	\$5,000	\$259,100	\$259,100				
Totals	12,955					\$1,558,075	\$1,801,850	\$1,869,690	\$2,162,220	\$2,094,053	\$2,421,686
Upsizing Cost Increase							\$243,775		\$292,530		\$327,634

Total I/I (gal) 85,791 \$3,648,031

Tucker and Wren											
Location: Along West Tucker Blvd and Wren Drive											
Item Description	Quantity (ft) or (ea)	Diameter (inch)		Unit Price		Segment Cost		Total Estimated Constr. Cost		Total Estimated Project Cost	
		Existing	Upsized	Existing	Upsized	Replacement	Upsized	Replacement	Upsized	Replacement	Upsized
8" Pipe 0-8', Deep (ft)	1,685	6	8	\$85	\$100	\$143,225	\$168,500				
60" Diameter Manhole (ea)	7			\$5,000	\$5,000	\$33,700	\$33,700				
Totals	1,685					\$176,925	\$202,200	\$212,310	\$242,640	\$237,787	\$271,757
Upsizing Cost Increase							\$25,275		\$30,330		\$33,970

I/I (gal) 5,140 \$218,574

Matlock											
Location: Along Matlock Road between East Pioneer Parkway and East Mayfield Road											
Item Description	Quantity (ft) or (ea)	Diameter (inch)		Unit Price		Segment Cost		Total Estimated Constr. Cost		Total Estimated Project Cost	
		Existing	Upsized	Existing	Upsized	Replacement	Upsized	Replacement	Upsized	Replacement	Upsized
8" Pipe, Directional Drill (ft)	1,850	6	8	\$350	\$400	\$647,500	\$740,000				
8" Pipe, Boring and Casing (ft)	35	6	8	\$350	\$400	\$12,250	\$14,000				
60" Diameter Manhole (ea)	8			\$4,000	\$4,000	\$30,160	\$30,160				
Totals	1,885					\$689,910	\$784,160	\$827,892	\$940,992	\$927,239	\$1,053,911
Upsizing Cost Increase							\$94,250		\$113,100		\$126,672

I/I (gal) 5,750 \$244,518

TOTALS											
Item Description	Quantity (ft)					Segment Cost		Total Estimated Constr. Cost		Total Estimated Project Cost	
						Replacement	Upsized	Replacement	Upsized	Replacement	Upsized
TOTALS	16,525					\$2,424,910	\$2,788,210	\$2,909,892	\$3,345,852	\$3,259,079	\$3,747,354

I/I (gal) Removed 96,681 \$4,111,123