Texas Water Development Board

City of Willow Park

CWSRF GREEN PROJECT RESERVE BUSINESS CASE EVALUATION

STATE FISCAL YEAR 2015 INTENDED USE PLAN

PROJECT NUMBER 62682

COMMITMENT DATE: December 14, 2015

DATE OF LOAN CLOSING: April 14, 2016

Green Estimate at closing is $ 1,039,350

Subsidy awarded for Green components $44,350

TEXAS WATER DEVELOPMENT BOARD

Green Project Reserve

Green Project Information Worksheets

Drinking Water State Revolving Fund

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.

TWDB-0163
Revised 12/2/2010

TEXAS WATER DEVELOPMENT BOARD
DRINKING WATER STATE REVOLVING FUND (DWSRF)
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 $ 1,037,500
- ☐ Energy Efficiency $ _____
- ☐ Environmentally Innovative $ _____

Total Requested Green Amount $ 1,037,500

Total Requested Funding Amount $ 1,037,500

Type of Funding Requested:

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

Completed by:

Name: Derek Turner Title: Project Engineer

Signature: Derek Turner Date: 4/28/15

TEXAS WATER DEVELOPMENT BOARD
DRINKING WATER STATE REVOLVING FUND (DWSRF)
GREEN PROJECT INFORMATION WORKSHEETS

PART I – GREEN PROJECT INFORMATION SUMMARY

General Project Information

Applicant: City of Willow Park Project #: 10789

Project Name: Water System Improvements

Contact Name: Derek Turner, P.E.

Contact Phone and e-mail: 817-594-9880/adt@jacobmartin.com

Brief Overall Project Description:

Replacing approximately 10,700 linear feet of existing water distribution line, rehabilitation of approximately 4,100 linear feet of existing water line, two pressure reducing stations, and associated appurtenances.

Section 3.3- Other Water Efficiency Improvements

Complete this section for water efficiency improvements other than those listed above. Provide reference to the applicable sections of the EPA GPR guidance (TWDB-0161) that demonstrate GPR eligibility. Provide a detailed description of the proposed water efficiency improvements of sufficient detail that clearly demonstrates that the proposed improvements are consistent with EPA GPR guidance (TWDB-0161).

Guidance Reference:

Part B, Section 2.4 and 2.5

Detailed description of proposed water efficiency improvements (attach additional pages if necessary):

The project consists of replacing approximately 10,700 linear feet of deteriorated water line and rehabilitating approximately 4,100 linear feet of deteriorated water line. The project also includes replacing/adding valves and two pressure reducing stations. The proposed improvements are expected to reduce water loss in the system by approximately 7 million gallons per year.

The project involves replacing waterlines located in various sections of the City. These lines are responsible for approximately 30% of the line breaks addressed by the City over the last 24 months. This was ascertained through review of previous engineering studies and interviews with City utility staff who are responsible for repairing these breaks.

Total Water Loss within the studied 12 Months = 46,318,525 Gallons
Estimated 72 leaks per year at 100,000 gallons per leak
Loss Attributable to Lines to be Replaced = 7,200,000 Gallons

Estimated Cost to Produce Water: Pumping = $0.50 per 1,000 gallons
Disinfection = $0.20 per 1,000 gallons
Equipment Depreciation = $0.10 per 1,000 gallons
= $0.80 per 1,000 gallons = $5,760.00

Estimated Cost Due to Repairs: Overtime = 72 repairs at 3 hours = $ 4,320.00
Materials = $500 per Event (72) = $36,000.00

TOTAL ESTIMATED COST DUE TO IDENTIFIED LINES PER YEAR = $146 ,080

$1,037,500 / $146,080 = Payback period of approximately 7.1 yrs.

7.1 years is much less than the project design life of 40 years.

James Bronikowski

From: Derek Turner <adt@jacobmartin.com>
Sent: Monday, October 26, 2015 8:22 AM
To: James Bronikowski
Subject: RE: Willow Park: Water System Improvements - Green Review Comments

James,
The payback period on the project will probably not change from the 20 years on the proforma. The water loss savings would be used to fund equipment and materials replacement on an annual basis. This has been difficult in the past since so many funds have been used for the line repairs and water loss itself. The estimated life of the new water lines would be 40 years. Water loss is often compounded during a line break event because there are not sufficient valves to isolate the area so that water can be shut off temporarily. Adding valves will allow the City to shut off the area, stopping the leak while it's being fixed. Pressure reducing valves are placed in areas where the line pressure gets higher than 75% of the design rating of the pipe, or where pressures would be likely to blow out customer-side plumbing fixtures. This prevents both mainline and customer-side blowouts, thereby preventing water loss.

Please let me know if you need additional information.

Thanks,
Derek

DEREK TURNER, P.E.
JACOB & MARTIN, LTD.
817-594-9880

From: James Bronikowski [mailto:James.Bronikowski@twdb.texas.gov]
Sent: Friday, October 23, 2015 3:27 PM
To: Derek Turner <adt@jacobmartin.com>
Subject: Willow Park: Water System Improvements - Green Review Comments

Derek,

I have reviewed the green worksheets and other information provided in the City of Willow Park's application for DWSRF funding. The only comment I have is to provide a little more detail on what the estimated payback period is for the project based on the estimated annual savings of $146,080, and how does this time frame compare to the design life of the water lines. Also, could you provide some additional comments as to how the valves and pressure reducing stations would help address the water loss.

Let me know if you have any questions.

Thank you,

James Bronikowski, P.E.
Project Engineer
Regional Water Planning & Development
Texas Water Development Board
512-475-0145