

# Texas Water Development Board



## City of Willow Park

**DWSRF GREEN PROJECT RESERVE BUSINESS CASE EVALUATION**

**STATE FISCAL YEAR 2013 INTENDED USE PLAN**

**PROJECT NUMBER 62588**

COMMITMENT DATE: April 18, 2013

DATE OF LOAN CLOSING: April 29, 2014

GREEN ESTIMATE AT CLOSING: \$669,927

October 18, 2012

Ms. Candice J. Scott  
City of Willow Park  
516 Ranch House Rd  
Willow Park, TX 76087

**Re: SFY 2012 Drinking Water State Revolving Fund  
Green Project Eligibility**

Dear Ms. Scott:

The Texas Water Development Board (TWDB) received Green Project Information Worksheets from the Willow Park (City) for project #9549 in response to an invitation letter dated September 4, 2012. The letter states that should funding be available, the City is eligible for loan forgiveness in an amount up to 15% of the green component cost (also referred to as the Green Project Reserve) if it can demonstrate that the project has green costs greater than or equal to 30% of the total project cost. After reviewing the worksheets, TWDB staff determined the City meets the 30% green cost threshold based on the following:

- The City's Green Project Information Worksheets dated August 30, 2012 requested that \$685,000 of the City's total project cost of \$685,000 be considered eligible for the DWSRF Green Project Reserve (GPR). The general element(s) described includes the replacement of approximately 21,000 linear feet of water line to address water and pressure.
- The Environmental Protection Agency's (EPA's) *Green Project Reserve Guidance for Determining Project Eligibility* (TWDB-0161) lists distribution pipe replacement or rehabilitation to reduce water loss and prevent water main breaks as business case eligible for the GPR (Part B, 2.5-2), Water Efficiency.
- Information presented on the Green Project Information Worksheets and attachments previously submitted with the Project Information Form provided sufficient information to confirm the eligibility of the proposed improvements for the GPR in accordance with TWDB-0161 Part B, 2.5-2.
- Therefore, at this time the TWDB considers project costs associated with the Distribution Line Replacement project in the amount of \$669,927 to be eligible for the DWSRF GPR. This includes estimated construction and applicable soft costs for the items. Please note that the proposed project has been limited to receiving funding for the planning and design phases only during this State Fiscal Year.

**Our Mission** : **Board Members**

To provide leadership, planning, financial assistance, information, and education for the conservation and responsible development of water for Texas

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Ms. Candice J. Scott

October 18, 2012

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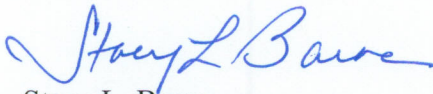
- Please note that the City's application for financial assistance must be consistent with the project scope presented on the Green Project Information Worksheets. Inclusion of the green elements within the project will be verified prior to Board commitment. If the project scope or budget related to the approved green components changes during application review, the City should update and resubmit the Green Project Information Worksheets as necessary.

For SFY 2013, the TWDB has a goal to allocate 10% of the capitalization grant toward green component costs. Therefore, the TWDB gives first preference for invitations to entities that have a documented percentage of green component cost of at least 30% of the total project cost. The City has demonstrated that it meets/exceeds the 30% green cost threshold. However, there is currently no green subsidy available. Green subsidy may become available if other invitees on the Fundable Projects List do not meet the required deadlines. If this occurs, any available subsidy will be offered to eligible applicants in priority order. Please continue working with the TWDB on your financial assistance application.

If you have any questions regarding green project eligibility, please feel free to contact James Bronikowski, Project Engineer, by phone at 512-475-0145 or by email at [james.bronikowski@twdb.texas.gov](mailto:james.bronikowski@twdb.texas.gov).

The TWDB appreciates the City of Willow Park interest in the DWSRF.

Sincerely,



Stacy L. Barna  
Director of Program Development  
Project Finance Division

SB:rf

- Attachments:
1. Green Project Information Worksheets, Approved
  2. Green Project Cost Summary

# Green Project Reserve

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## Green Project Information Worksheets

**2013 Intended Use Plan  
Drinking Water State Revolving Fund**

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

**PART I – GREEN PROJECT INFORMATION SUMMARY**

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 \$ 685,000
- Energy Efficiency \$ \_\_\_\_\_
- Environmentally Innovative \$ \_\_\_\_\_

Total Requested Green Amount \$ 685,000

Total Requested Funding Amount \$ 685,000

Type of Funding Requested:

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

Completed by:

Name: Derek Turner, P.E.

Title: Project Engineer

Signature: 

Date: 8-30-12

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

**PART III - BUSINESS CASE ELIGIBLE**

Complete this worksheet for projects being considered for the Green Project Reserve (GPR) as business case eligible. Business case eligible projects or project components are described in the following sections of the EPA GPR guidance (TWDB-0161):

Green Infrastructure	Part B, Section 1.4
Water Efficiency	Part B, Section 2.4 and 2.5
Energy Efficiency	Part B, Section 3.4 and 3.5
Environmentally Innovative	Part B, Section 4.4 and 4.5

Information provided on this worksheet should be of sufficient detail and should clearly demonstrate that the proposed improvements are consistent with EPA and TWDB GPR guidance for business case eligible projects. Refer to **Information on Completing Worksheets** for additional information.

**Section 1 - General Project Information**

Applicant: City of Willow Park PIF #: 9549

Project Name: Water System Improvements

Contact Name: Derek Turner, P.E.

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

Total Project Cost: \$685,000 Green Amount: \$685,000  
(Business Case Eligible)

**Brief Overall Project Description:**

The Project consists of replacing approximately 21,000 linear feet of old, deteriorated water lines with new PVC lines. The Project also includes associated valves and appurtenances.

**Section 2 – Green Infrastructure**

Certain green infrastructure 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. Provide reference to the applicable sections of the EPA GPR guidance (TWDB-0161) that demonstrate GPR eligibility. Provide a detailed description of the proposed green infrastructure improvements of sufficient detail that clearly demonstrates that the proposed improvements are consistent with EPA GPR guidance (TWDB-0161).

Guidance Reference:  
TWDB - 0161, Part B, Section 2.5-2

Detailed Description (attach additional pages if necessary):  
The Project consists entirely of replacing existing water lines to reduce water loss and prevent water main breaks as described in TWDB - 0160, Part B, Section 2.5-2.

Green amount associated with green infrastructure (business case eligible):         \$ 685,000          
(Attach a detailed cost estimate if necessary)



**Section 3 - Water Efficiency**

Certain water 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. For all water efficiency business case eligible projects Section 3.1 must be completed. A common water efficiency project that may be considered business case eligible is water line replacements to address water loss. For this type of project complete Section 3.2 of the worksheet. For any other water efficiency improvement being considered for business case eligibility, complete Section 3.3.

**Section 3.1 - System and Water Loss Information**

Section 3.1 is required for all water efficiency business case eligible projects. Attach a copy of most recent Water Audit, if available. Otherwise, complete and attach Water Audit Worksheet or provide water audit data in a similar format. Additional information on water loss and water audits as well as a copy of the Water Audit Worksheet is available at:

[http://www.twdb.state.tx.us/assistance/conservation/Municipal/Water\\_Audit/wald.asp](http://www.twdb.state.tx.us/assistance/conservation/Municipal/Water_Audit/wald.asp)

Reference and attach water loss audit and/or any other completed planning or engineering studies:

- 2011 Water Use Data Sheets
- Previous 12 Month Water Loss Analysis
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**Section 3.2 - Water Line Replacement**

Proposed pipe to be replaced:

Length (LF)	Existing Pipe			Proposed Pipe	
	Material	Age (yr)	Dia. (in)	Dia. (in)	Material
21,000	Cast Iron	40+	6	6	PVC

Percent of distribution lines being replaced: Approximately 8%

Number of breaks/leaks/repairs recorded in past 24 months for areas being replaced: 72 (Estimated)

Estimated water loss from pipe being replaced (provide calculations on following page): 3,600,000

Estimated annual water savings (provide calculations on following page): 3,600,000

Estimated annual cost savings (provide calculations on following page): \$14,680

Provide detailed description of the propose improvements and provide supporting calculations. Description should include a description of the methodology used to select pipes for replacement (attach additional pages if necessary):

The project involves replacing waterlines located on Ranch House Road and in the West Oak Subdivision. These lines are responsible for approximately 75% 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 Last 12 Months = 46,318,525 Gallons

Estimated 36 leaks per year at 100,000 gallons per leak

Loss Attributable to Lines to be Replaced = 3,600,000 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

= \$0.40 per 1,000 gallons = \$2,88.00

Estimated Cost Due to Repairs: Overtime = 40 repairs at 3 hours = \$ 1,800.00

Materials = \$500 per Event (20) = \$10,000.00

TOTAL ESTIMATED COST DUE TO IDENTIFIED LINES = \$14,680 PER YEAR

Green amount associated with water line replacement:         \$685,000        

(Attach detailed cost estimate if necessary)

**CITY OF WILLOW PARK  
WATER USE DATA  
SEPTEMBER 2011 TO AUGUST 2012**

Water sold/produced in Gallons

	sold	produced	Lost
August-12	27,221,200	18,724,236	-8,496,964
July-12	22,357,900	29,097,436	6,739,536
June-12	18,945,000	20,866,757	1,921,757
May-12	16,054,200	23,370,311	7,316,111
April-12	9,945,400	16,054,168	6,108,768
March-12	9,236,400	13,673,345	4,436,945
February-12	8,357,000	12,260,349	3,903,349
January-12	9,719,600	13,649,744	3,930,144
December-11	9,607,900	15,548,293	5,940,393
November-11	12,975,900	17,926,144	4,950,244
October-11	14,858,700	20,190,685	5,331,985
September-11	17,981,500	22,217,265	4,235,765
	177,260,700	223,578,733	46,318,033



**TEXAS WATER DEVELOPMENT BOARD**  
P.O. BOX 13231, CAPITOL STATION  
AUSTIN, TX 78711-3231

**2011 Water Audit Report**

**D. Water Losses**

23. Water Losses 45,753,440 gallons  
(Line 17 minus Line 22)

**E. Apparent Losses**

24. Average Customer Meter Accuracy (Enter percentage)	<u>99.00</u> %	<u>2</u>
25. Customer Meter Accuracy Loss	<u>1,790,512</u> gallons	
26. Systematic Data Handling Discrepancy	<u>0</u> gallons	<u>0</u>
27. Unauthorized Consumption	<u>564,593</u> gallons	<u>0</u>
<b>28. Total Apparent Losses</b>	<u><b>2,355,105</b></u> gallons	

**F. Real Losses**

29. Reported Breaks and Leaks (Estimated volume of leaks & breaks repaired during the audit period)	<u>40,000,000</u> gallons	<u>3</u>
30. Unreported Loss (Includes all unknown water loss)	<u>3,398,335</u> gallons	<u>0</u>
<b>31. Total Real Losses</b> (Line 29, plus Line 30)	<u><b>43,398,335</b></u> gallons	
32. Water Losses (Apparent + Real) (Line 28 plus Line 31) = Line 23	<u>45,753,440</u> gallons	
33. Non-revenue Water (Water Losses + Unbilled Authorized Consumption) (Line 32, plus Line 20, plus Line 21)	<u>48,576,404</u> gallons	

**G. Technical Performance Indicator for Apparent Loss**

34. Apparent Losses Normalized 4 gallons  
(Apparent Loss Volume / # of Retail Service  
Connections/365)

**H. Technical Performance Indicators for Real Loss**

35. Real Loss Volume (Line 31)	<u>43,398,335</u> gallons
36. Unavoidable Annual Real Losses, volume (calculated)	<u>9,830,363</u> gallons
37. Infrastructure Leakage Index (calculated) (Equals real loss volume divided by unavoidable annual real losses)	<u>4.41470</u>
38. Real Losses Normalized (Real Loss Volume / # of Service Connections / 365) (This indicator applies if service connection density is greater than 32 / mile)	<u>66</u> gallons



**TEXAS WATER DEVELOPMENT BOARD**  
P.O. BOX 13231, CAPITOL STATION  
AUSTIN, TX 78711-3231

**2011 Water Audit Report**

39. Real Losses Normalized 2,378 gallons  
(Real Loss Volume/Miles of Main Lines/365)  
(This indicator applies if service connection density is less than 32/mile)

		Assessment Scale
<b>I. Financial Performance Indicators</b>		
40. Total Apparent Losses (Line 28)	<u>2,355,105</u> gallons	
41. Retail Price of Water	<u>\$36.50000</u>	<u>3</u>
42. Cost of Apparent Losses (Apparent loss volume multiplied by retail cost of water, Line 40 x Line 41)	<u>\$85,961,328.12</u>	
43. Total Real Losses (Line 31)	<u>43,398,335.36</u>	
44. Variable Production Cost of Water* (*Note: in case of water shortage, real losses might be valued at the retail price of water instead of the variable production cost.)	<u>\$3.05000</u>	<u>3</u>
45. Cost of Real Losses (Real Loss multiplied by variable production cost of water, Line 43 x Line 44)	<u>\$132,364,922.85</u>	
<b>46. Total Assessment Scale</b>		<u>29</u>
<b>47. Total Cost Impact of Apparent and Real Losses</b>	<u>\$218,326,250.97</u>	