



## ***CITY OF SMYER***

***DWSRF GREEN PROJECT RESERVE BUSINESS CASE EVALUATION***

***STATE FISCAL YEAR 2013 INTENDED USE PLAN***

***PROJECT NUMBER 62579***

COMMITMENT DATE: JANUARY 31, 2013

DATE OF LOAN CLOSING: AUGUST 13, 2013

GREEN ESTIMATE AT CLOSING:

Subsidy awarded for Green components, (if any) \$188,500.00

# Green Project Reserve

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## Green Project Information Worksheets

**2012 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 \$ 16,600 \_\_\_\_\_
- Environmentally Innovative \$ \_\_\_\_\_

Business Case Eligible

- Green Infrastructure \$ \_\_\_\_\_
- Water Efficiency \$ 171,900 \_\_\_\_\_
- Energy Efficiency \$ 11,500 \_\_\_\_\_
- Environmentally Innovative \$ \_\_\_\_\_

Total Requested Green Amount \$ 200,000 \_\_\_\_\_

Total Requested Funding Amount \$ 550,000 \_\_\_\_\_

Type of Funding Requested:

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

Completed by:

Name: Fred Curnutt

Title: Project Engineer

Signature: 

Date: 22 Nov 2011

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

**PART II - CATEGORICALLY ELIGIBLE**

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

Green Infrastructure	Part B, Section 1.2
Water Efficiency	Part B, Section 2.2
Energy Efficiency	Part B, Section 3.2
Environmentally Innovative	Part B, Section 4.2

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 categorically eligible projects. Refer to **Information on Completing Worksheets** for additional information.

**Section 1 – General Project Information**

Applicant: City of Smyer PIF #: \_\_\_\_\_

Project Name: Water System Improvements

Contact Name: Fred Curnutt, P.E.

Contact Phone and e-mail: 806-794-1100; fred.curnutt@e-ht.com

Total Project Cost: \_\_\_\_\_ Green Amount: \$200,000

(Categorically Eligible)

**Brief Overall Project Description:**

Connect to the CRMWA's water line north of the City, install a 4 inch water line from the connection to the CRMWA water line to the elevated storage tank, install a pump building and pump system to supply water from the CRMWA's water line to the elevated storage tank to blend with the ground water, and provide SCADA system to control the blend pump station.

Replace the deteriorated 4 inch water line from the pump station at the ground storage tank to the north side of the Highway in Smyer with 6 inch pipe line, approximately 5,400 feet.

Replace water pumps at the ground storage tank with high efficiency pumps and SCADA control for the pump station.

**Section 2 – Green Infrastructure**

Proposed green infrastructure improvements such as pervious or porous pavement, bioretention, green roofs, rainwater harvesting, gray water use, xeriscape, landscape conversion programs and moisture and rain sensing irrigation equipment are considered categorically eligible for the GPR according to EPA GPR guidance (TWDB-0161) Part B, Section 1.2. List categorically eligible green infrastructure contained within the project in the table below. Also provide a detailed description of the proposed improvements. The detailed description should provide sufficient detail that clearly demonstrates that the proposed improvements are consistent with EPA GPR guidance (TWDB-0161).

Green Infrastructure Description	Project / Component Cost
Total:	

**Section 4.2 – NEMA Premium Efficiency Motors**

If NEMA Premium efficiency motors are to be used, provide total motor cost: \$16,600  
(attach a list of proposed motors to be installed including horsepower and efficiency rating)

**Section 4.3 –Other Energy Efficiency Improvements**

Complete this section for energy 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 energy efficiency improvements of sufficient detail that clearly demonstrates that the proposed improvements are consistent with EPA GPR guidance (TWDB-0161).

Guidance Reference:

Detailed Description (attach additional pages if necessary):

- Two 15 horse power high efficiency motor/pumps
- One 10 horse power high efficiency motor/pump

Green amount associated with energy efficiency improvements: \$16,600

**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 Smyer PIF #: \_\_\_\_\_

Project Name: Water System Improvements

Contact Name: Fred Curnutt, PE

Contact Phone and e-mail: 806-794-1100

Total Project Cost: \$550,000 Green Amount: \$200,000

(Business Case Eligible)

**Brief Overall Project Description:**

Connect to the CRMWA's water line north of the City, install a 4 inch water line from the connection to the CRMWA water line to the elevated storage tank, install a pump building and pump system to supply water from the CRMWA's water line to the elevated storage tank to blend with the ground water, and provide SCADA system to control the blend pump station.

Replace the deteriorated 4 inch water line from the pump station at the ground storage tank to the north side of the Highway in Smyer with 6 inch pipe line, approximately 5,400 feet.

Replace water pumps at the ground storage tank with high efficiency pumps and SCADA control for the pump station.

**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:**

Part B, Section 2.4 of the EPA GPR guidance (TWDB-0161)



Detailed Description (attach additional pages if necessary):

Replace the deteriorated 4 inch water line from the pump station at the ground storage tank to the north side of the Highway in Smyer with 6 inch pipe line, approximately 5,400 feet. The existing 4 inch line is problematic in its deteriorated condition with multiple leaks with associated loss of water, repair materials and time of personnel to repair. The increase in pipe size will reduce the pressure loss and associated pumping cost.

Green amount associated with green infrastructure (business case eligible): \$163,000  
(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:

- Water loss audit *(attached)*
- \_\_\_\_\_
- \_\_\_\_\_

**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
5,400	AC	50	4	6	C-900 PVC

Percent of distribution lines being replaced: \_\_\_\_\_

Number of breaks/leaks/repairs recorded in past 24 months for areas being replaced: 6

Estimated water loss from pipe being replaced (provide calculations on following page): 400,000

Estimated annual water savings (provide calculations on following page): 300,000 gallons

Estimated annual cost savings (provide calculations on following page): \$950<sup>00</sup>

Provide detailed description of the proposed 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 City's well field is approximately 2 miles from the elevated water storage tank (1 mile south of town). A four inch line provides the water from the well field to the City/distribution system. The transmission line has had multiple leaks each year which disrupt service, requires maintenance, results in considerable water loss, and introduces potential safety issues. This project will reduce water loss and result in a reduction in energy consumption.

The project is to replace the deteriorated 4 inch AC line from the well field 1 mile south of the city with new 6 inch C-900 PVC or HDPE. The new pipeline will reduce the water loss due to leaks thus conserving the precious commodity as well as preventing the loss of electrical energy which would have been used to pump the leaked water. The City has lost approximately 300,000 gallons per year due to leaks in this section of transmission line. The new line (HDPE welded joints) will reduce the transmission line loss to essentially 0 gallons per year from leaks due to pipe deterioration. Thus the energy avoidance to pump 500,000 gallons of water would be approximately 25 hours of a 50 hp pump operation. In addition to correcting the deteriorated pipe and preventing the loss of associated water, the new pipeline will reduce the friction loss incurred during the pumping process.

The new pipe will reduce the friction loss considerably compared to the existing line as well as eliminate leaks on the existing line. It will take approximately 5,400 LF of pipe to replace the deteriorated line. The existing pumps are 160 gpm pumps which have a developed head of 86 feet in the existing line. The new line will reduce the head in the line to 11.2 feet at 160 gpm. This would reduce the pumping head for the well field pump station approximately 87 percent. For this segment of pipe.

Water loss from leaks in transmission line in 2009 – 254,000 gallons

Water loss from leaks in transmission line in 2010 – 320,000 gallons

Cost avoidance not pumping 520,000 gallons 3,250 hours at 11000 kW/hr (0.10/kWH) = \$35.75

The amount of water used by Smyer (16 MG) would equal approximately 100,000 hours of pump operation if all the water is ground water. The cost avoidance is illustrated for 100,000 hours. The total cost avoidance will be based on the 2010 volumes.

Cost avoidance new line pumping 100000 hours/year at 11000 kW/hr (0.10/kW) = \$1,100.00

100000 hours/year at 1870 kW/hr (0.10/kW) = \$187.00

**Total cost avoidance (\$35.75 + \$1,100.00 - \$187.00) = \$948.75/yr**

Green amount associated with water line replacement: \$171,900

**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:

Detailed description of proposed water efficiency improvements (attach additional pages if necessary):  
SCADA control of the pumps at the pump station.

Green amount associated with water efficiency improvements: \$11,500



**2010 Water Audit Report**

**D. Water Losses**

**23. Water Losses** 1,787,500 gallons  
 (Line 17 minus Line 22)

**E. Apparent Losses**

24. Average Customer Meter Accuracy (Enter percentage)	<u>100.00</u> %	<u>0</u>
25. Customer Meter Accuracy Loss	<u>0</u> gallons	
26. Systematic Data Handling Discrepancy	<u>0</u> gallons	<u>0</u>
27. Unauthorized Consumption	<u>42,500</u> gallons	<u>0</u>
<b>28. Total Apparent Losses</b>	<u>42,500</u> gallons	

**F. Real Losses**

29. Reported Breaks and Leaks (Estimated volume of leaks & breaks repaired during the audit period)	<u>10,000</u> gallons	<u>0</u>
30. Unreported Loss (Includes all unknown water loss)	<u>1,735,000</u> gallons	<u>0</u>
<b>31. Total Real Losses</b> (Line 29, plus Line 30)	<u>1,745,000</u> gallons	
32. Water Losses (Apparent + Real) (Line 28 plus Line 31) = Line 23	<u>1,787,500</u> gallons	
33. Non-revenue Water (Water Losses + Unbilled Authorized Consumption) (Line 32, plus Line 20, plus Line 21)	<u>2,000,000</u> gallons	

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

34. Apparent Losses Normalized 1 gallons  
 (Apparent Loss Volume / # of Retail Service  
 Connections/365)

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

35. Real Loss Volume (Line 31)	<u>1,745,000</u> gallons
36. Unavoidable Annual Real Losses, volume (calculated)	<u>1,223,663</u> gallons
37. Infrastructure Leakage Index (calculated) (Equals real loss volume divided by unavoidable annual real losses)	<u>1.42600</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>25</u> gallons

**2010 Water Audit Report**

39. Real Losses Normalized 683 gallons  
 (Real Loss Volume/Miles of Main Lines/365)  
 (This indicator applies if service connection density is less than 32/mile)

<b>I. Financial Performance Indicators</b>		<b>Assessment Scale</b>
40. Total Apparent Losses (Line 28)	<u>42,500</u> gallons	
41. Retail Price of Water	<u>\$0.00200</u>	<u>0</u>
42. Cost of Apparent Losses (Apparent loss volume multiplied by retail cost of water, Line 40 x Line 41)	<u>\$85.00</u>	
43. Total Real Losses (Line 31)	<u>1,745,000.00</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>\$0.00100</u>	<u>0</u>
45. Cost of Real Losses (Real Loss multiplied by variable production cost of water, Line 43 x Line 44)	<u>\$1,745.00</u>	
<b>46. Total Assessment Scale</b>		<u>0</u>
<b>47. Total Cost Impact of Apparent and Real Losses</b>	<u>\$1,830.00</u>	

October 2, 2012

The Honorable Mary Beth Sims  
City of Smyer  
P.O. Box 203  
Smyer, TX 79367-0203

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

Dear The Honorable Sims:

The Texas Water Development Board (TWDB) received Green Project Information Worksheets from the City of Smyer (City) for project #9593 in response to an invitation letter dated August 22, 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 November 22, 2011 requested that \$200,000 of the City's total project cost of \$365,375 be considered eligible for the DWSRF Green Project Reserve (GPR). The general element(s) described includes the replacement of approximately 5,400 linear feet of water line to address water and pressure loss and the installation of NEMA Premium Efficiency Motors with pumps at the City's pump station.
- 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.
- The EPA's *Green Project Reserve Guidance for Determining Project Eligibility* (TWDB-0161) lists the installation of NEMA Premium Efficiency Motors as categorically eligible for the GPR (Part B, 3.2-3), 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 and 3.2-3.

**Our Mission**

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

**Board Members**

Edward G. Vaughan, Chairman  
Joe M. Crutcher, Vice Chairman  
Melanie Callahan, Executive Administrator

Thomas Weir Labatt III, Member  
Lewis H. McMahan, Member

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Monte Cluck, Member



The Honorable Mary Beth Sims

October 2, 2012

Page 2

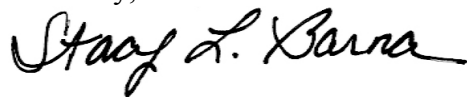
- Therefore, at this time the TWDB considers project costs associated with the Water Adsorption Treatment System the amount of \$231,781 to be eligible for the DWSRF GPR. This includes estimated construction and applicable soft costs for the items.
- Please note that the City's application for financial 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. 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 Smyer interest in the DWSRF.

Sincerely,



Stacy L. Barna  
Director of Program Development  
Program and Policy Development

SB:rf

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