

Texas Water Development Board



North San Saba WSC

DWSRF GREEN PROJECT RESERVE BUSINESS CASE EVALUATION

STATE FISCAL YEAR 2013 INTENDED USE PLAN

PROJECT NUMBER 62509

COMMITMENT DATE: FEBRUARY 28, 2013

DATE OF LOAN CLOSING: NOVEMBER 21, 2013

GREEN ESTIMATE AT CLOSING: \$1,513,484.00

Subsidy awarded for Green components, (if any) \$218,816.00

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**

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: North San Saba WSC PIF #: 9810

Project Name: 2013 Transmission line construction

Contact Name: Deana Sealy

Contact Phone and e-mail: 325-396-4949 sealy@wcc.net

Total Project Cost: \$2,783,000.00 Green Amount: 1,505,000.00
(Business Case Eligible)

Brief Overall Project Description:

This project will be to install a pump station and transmission line to move water from the City of San Saba to the North San Saba WSC standpipe on FM 500 where the water can be blended with water from the North San Saba WSC's well water to reduce the Combined Radium in the water. The remainder of the project will be to replace old leaking pipelines with new correctly sized water lines. The North San Saba WSC has high water loss due to the old lines that are constantly leaking.

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

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

- 2010 Water Loss Audit
- Water Loss May 2009 - April 2011
- _____

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
7920	PVC	31	2	3	PVC
10560	PVC	27	2	4	PVC
26400	PVC	32	2	4	PVC
10560	PVC	30	2	4	PVC
5280	PVC	30	2	2	PVC
10560	PVC	30	2	3	PVC
5280	PVC	25	2	3	PVC
15840	PVC	25	2	4	PVC
7920	PVC	25	2	2	PVC
15840	PVC	20	2	3	PVC

Percent of distribution lines being replaced: 24%

Number of breaks/leaks/repairs recorded in past 24 months for areas being replaced : 450

Estimated water loss from pipe being replaced (provide calculations on following page): 9,045,000

Estimated annual water savings (provide calculations on following page): 4,522,500 gallons

Estimated annual cost savings (provide calculations on following page): \$37,001.25

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 proposed improvements will replace 22 miles of 25+ year old pipeline that is contributing to at least 5 million gallons per year of water loss. The North San Saba WSC system was started in the 1970's and most of the pipe being replaced is 25 to 30+ years old and has leaks in numerous places on a monthly if not weekly basis. These areas of pipe to be replaced are based on the three factors: 1) number of leaks that have occurred in the past 24 months, 2) the causes of the leaks, and 3) the observed condition of the pipe. Over 90% of the leaks in the past 24 months have been in these pipelines. The manager of the North San Saba WSC has just continued to repair these leaking pipes and in one instance, on a 1 mile section of pipeline, 9 leaks were repaired in one week. All other leaks have been a result of damage (ex: line hit by fencing crews, etc.) or have been only one leak in an area and have been repaired. The entire length of pipe to be replaced is undersized as growth took place in the North San Saba WSC in the late 1980's and early 1990's. The system has not grown in the past 10 to 15 years, but pipes are undersized and pressures are very low in some areas because of the number of customers and length of very small diameter pipe. The system was not planned very well; it was put in as a necessity and simply added on to with any available pipe by the shortest route.

Please see attached Water Loss May 2009 - April 2011 for the calculations of the water loss in the proposed pipelines. Approximately 90% of the known water loss was due to leaks in the proposed pipes to be replaced. Although it cannot be proven, there may have been water loss in excess of these estimates from the proposed pipelines. Known water loss for this period of 24 months = 10,050,000 gallons.

$10,050,000 * 90\% = 9,045,000.$

At a minimum, an estimate of 4,522,500 gallons of water was lost last year due to the proposed pipelines to be replaced. $9,045,000 / 2 = 4,522,500$ gallons per year.

Estimated annual cost savings = \$ 37,001.25

$4,522,500$ gallons * \$1.70 per 1000 gallons = \$7,688.25 for water loss

Annual expenditure for parts for repair on these pipelines = \$29,313.00

$\$7,688.25 + \$29,313.00 = \$37,001.25$

Green amount associated with water line replacement: \$1,505,000.00

Line replacement - \$ 1,335,000

Contingency - \$ 125,000

Inspect. & Admin. - \$ 45,000

Green amount associated with water line replacement: \$1,505,000.00

(Attach detailed cost estimate if necessary)

PROJECT BUDGET

Uses	TWDB Funds Series 1	TWDB Funds Series 2	TWDB Funds Series 3	Total TWDB Cost	Other Funds	Total Cost
Fiscal Services						
Financial Advisor	\$5,000	\$0	\$0	\$5,000	\$0	\$5,000
Bond Counsel	\$10,000	\$0	\$0	\$10,000	\$0	\$10,000
Issuance Cost	\$0	\$0	\$0	\$0	\$0	\$0
Bond Insurance/Surety	\$0	\$0	\$0	\$0	\$0	\$0
Fiscal/Legal	\$0	\$0	\$0	\$0	\$0	\$0
Capitalized Interest	\$0	\$0	\$0	\$0	\$0	\$0
Bond Reserve Fund	\$0	\$0	\$0	\$0	\$0	\$0
Loan Origination Fee	\$0	\$0	\$0	\$0	\$0	\$0
Other **	\$0		\$0	\$0	\$0	\$0
Subtotal Fiscal Services	\$15,000	\$0	\$0	\$15,000	\$0	\$15,000
Contingency						
Contingency	\$328,000	\$0	\$0	\$328,000	\$0	\$328,000
Subtotal Contingency	\$328,000	\$0	\$0	\$328,000	\$0	\$328,000
TOTAL COSTS	\$2,783,000	\$0	\$0	\$2,783,000	\$0	\$2,783,000

Other ** description must be entered

+ For Planning applications under the EDAP Program, please break down Planning costs as follows:

Category A	0		0
Category B	0		0
Category C	0		0
Category D	0		0
Total Planning Costs	0	0	0

2010 Water Audit Report

D. Water Losses

23. Water Losses 29,705,721 gallons
(Line 17 minus Line 22)

E. Apparent Losses

24. Average Customer Meter Accuracy (Enter percentage)	<u>95.00</u> %	<u>0</u>
25. Customer Meter Accuracy Loss	<u>1,295,747</u> gallons	
26. Systematic Data Handling Discrepancy	<u>0</u> gallons	<u>0</u>
27. Unauthorized Consumption	<u>137,531</u> gallons	<u>0</u>
28. Total Apparent Losses	<u>1,433,279</u> gallons	

F. Real Losses

29. Reported Breaks and Leaks (Estimated volume of leaks & breaks repaired during the audit period)	<u>4,360,000</u> gallons	<u>0</u>
30. Unreported Loss (Includes all unknown water loss)	<u>23,912,442</u> gallons	<u>0</u>
31. Total Real Losses (Line 29, plus Line 30)	<u>28,272,442</u> gallons	
32. Water Losses (Apparent + Real) (Line 28 plus Line 31) = Line 23	<u>29,705,721</u> gallons	
33. Non-revenue Water (Water Losses + Unbilled Authorized Consumption) (Line 32, plus Line 20, plus Line 21)	<u>30,393,378</u> gallons	

G. Technical Performance Indicator for Apparent Loss

34. Apparent Losses Normalized 13 gallons
(Apparent Loss Volume / # of Retail Service
Connections/365)

H. Technical Performance Indicators for Real Loss

35. Real Loss Volume (Line 31)	<u>28,272,442</u> gallons
36. Unavoidable Annual Real Losses, volume (calculated)	<u>9,015,683</u> gallons
37. Infrastructure Leakage Index (calculated) (Equals real loss volume divided by unavoidable annual real losses)	<u>3.13590</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>263</u> gallons

TEXAS WATER DEVELOPMENT BOARD

P.O. BOX 13231, CAPITOL STATION

AUSTIN, TX 78711-3231

2010 Water Audit Report

39. Real Losses Normalized 1,033 gallons
 (Real Loss Volume/Miles of Main Lines/365)
 (This indicator applies if service connection density is less than 32/mile)

Assessment
Scale

I. Financial Performance Indicators

40. Total Apparent Losses (Line 28)	<u>1,433,279</u> gallons	
41. Retail Price of Water	<u>\$0.00170</u>	<u>0</u>
42. Cost of Apparent Losses (Apparent loss volume multiplied by retail cost of water, Line 40 x Line 41)	<u>\$2,436.57</u>	
43. Total Real Losses (Line 31)	<u>28,272,441.74</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>\$28,272.44</u>	
46. Total Assessment Scale		<u>0</u>
47. Total Cost Impact of Apparent and Real Losses	<u>\$30,709.01</u>	

TEXAS WATER DEVELOPMENT BOARD

P.O. BOX 13231, CAPITOL STATION

AUSTIN, TX 78711-3231

2011 Water Audit Report

D. Water Losses

23. Water Losses 14,877,445 gallons
 (Line 17 minus Line 22)

E. Apparent Losses

24. Average Customer Meter Accuracy (Enter percentage) 95.00 % 0

25. Customer Meter Accuracy Loss 2,093,437 gallons

26. Systematic Data Handling Discrepancy 0 gallons 0

27. Unauthorized Consumption 0 gallons 0

28. Total Apparent Losses 2,093,437 gallons

F. Real Losses

29. Reported Breaks and Leaks 4,090,000 gallons 0
 (Estimated volume of leaks & breaks repaired during the audit period)

30. Unreported Loss 8,694,008 gallons 0
 (Includes all unknown water loss)

31. Total Real Losses 12,784,008 gallons
 (Line 29, plus Line 30)

32. Water Losses (Apparent + Real) 14,877,445 gallons
 (Line 28 plus Line 31) = Line 23

33. Non-revenue Water 17,877,445 gallons
 (Water Losses + Unbilled Authorized Consumption)
 (Line 32, plus Line 20, plus Line 21)

G. Technical Performance Indicator for Apparent Loss

34. Apparent Losses Normalized 20 gallons
 (Apparent Loss Volume / # of Retail Service
 Connections/365)

H. Technical Performance Indicators for Real Loss

35. Real Loss Volume (Line 31) 12,784,008 gallons

36. Unavoidable Annual Real Losses, volume (calculated) 9,015,683 gallons

37. Infrastructure Leakage Index (calculated) 1.41800
 (Equals real loss volume divided by unavoidable annual real losses)

38. Real Losses Normalized 119 gallons
 (Real Loss Volume / # of Service Connections /
 365)
 (This indicator applies if service connection density
 is greater than 32 / mile)

TEXAS WATER DEVELOPMENT BOARD

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2011 Water Audit Report

39. Real Losses Normalized 467 gallons
 (Real Loss Volume/Miles of Main Lines/365)
 (This indicator applies if service connection density is less than 32/mile)

I. Financial Performance Indicators		Assessment Scale
40. Total Apparent Losses (Line 28)	<u>2,093,437</u> gallons	
41. Retail Price of Water	<u>\$0.00270</u>	<u>0</u>
42. Cost of Apparent Losses (Apparent loss volume multiplied by retail cost of water, Line 40 x Line 41)	<u>\$5,652.28</u>	
43. Total Real Losses (Line 31)	<u>12,784,007.90</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>\$0.00180</u>	<u>0</u>
45. Cost of Real Losses (Real Loss multiplied by variable production cost of water, Line 43 x Line 44)	<u>\$23,011.21</u>	
46. Total Assessment Scale		<u>0</u>
47. Total Cost Impact of Apparent and Real Losses	<u>\$28,663.49</u>	