Texas Water Development Board

New Ulm WSC

DWSRF GREEN PROJECT RESERVE BUSINESS CASE EVALUATION

STATE FISCAL YEAR 2013 INTENDED USE PLAN

PROJECT NUMBER 62571

COMMITMENT DATE: January 31, 2013

DATE OF LOAN CLOSING: May 10, 2013

GREEN ESTIMATE AT CLOSING: $500,716.00

Subsidy awarded for Green components, (if any)_____

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 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 $ 6,400.00
- ☒ Energy Efficiency $ 2,400.00
- ☐ Environmentally Innovative $ _____

Total Requested Green Amount $ 374,651.20

Total Requested Funding Amount $ 535,216.00

Type of Funding Requested:

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

Completed by:

Name: Lynette Frnka Title: Manager

Signature: Lynette Frnka Date: 10/8/2012

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: New Ulm Water Supply Corporation PIF #: 9806

Project Name: Water Line Replacement

Contact Name: Lynette Frnka

Contact Phone and e-mail: 979-992-3699 nuwsc@industryinet.com

Total Project Cost: $535,216.00 Green Amount: $374,651.20

Brief Overall Project Description:

This project will replace 12,400 feet of deteriorating and undersized distribution lines to reduce the amount of water loss due to leaks and line breakage, reduce costs associated with materials and man hours to make repairs, reduce energy consumption by having to pump and treat less water, and most importantly is to conserve on the amount of water taken out of the ground.

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:

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 Audit
- ☐ 2011 Water Use Survey
- ☐ Report on first 3 quarters of 2012

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
9,400	PVC	40+	2	6	C900
3,000	PVC	40+	2	4	SDR21

Percent of distribution lines being replaced: Approximately 25%

Number of breaks/leaks/repairs recorded in past 24 months for areas being replaced: 12

Estimated water loss from pipe being replaced (provide calculations on following page): 1.6 MG

Estimated annual water savings (provide calculations on following page): 1.6 MG

Estimated annual cost savings (provide calculations on following page): $8,800.00

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):

"See Attached"

Business Plan attached to original application.

Income lost on the 1.6 million gallons of water loss figured at $4.00/1,000 gallons is $6,400.00. This is a substantial amount of revenue to a very small system such as ours.

Green amount associated with water line replacement: $ 374,651.20

List any other energy efficiency improvements to pumping facility (VFDs, lighting, SCADA, etc.):

Component Description	Annual Energy Savings (if known)	Annual Financial Savings (if known)	Component Cost
Total:			

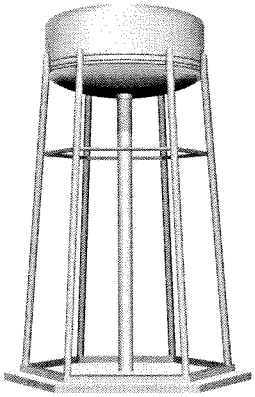
Provide a detailed description on the following page(s) of the proposed energy efficiency improvements. Information should be specific to the equipment being proposed and calculations should be provided demonstrating substantial energy and financial savings.

Detailed Description (attach additional pages if necessary):

The only energy efficiency involved with this project is the amount of electrical energy Consumption saved by reducing our water loss and possibly extending the life of the wellc and booster pumps by not having to pump millions of gallons of water which is lost.

Green amount associated with pumping facilities improvements: $ 2,400.00
(Attach detailed cost estimate if necessary)

"Part G3"



BUSINESS CASE
WATER LINE REPLACEMENT

NEW ULM WATER SUPPLY CORPORATION
P. O. BOX 73
1195 WALNUT STREET
NEW ULM, TEXAS 78950

AUGUST 27, 2012

1. EXECUTIVE SUMMARY

This Water Line Replacement Project consisting of replacing 12,400 feet of deteriorating and undersized distribution water lines to reduce the amount of water loss per year.

2. GENERAL PROJECT INFORMATION

There are 9,400 feet of 2" PVC lines that were installed in the late 1960's and during the 1970's that are to be replaced with 6" C900 piping. There are an additional 3,000 feet of 2" PVC lines that were installed in the late 1960"s that are to be replaced with 4" PVC piping. The system water loss in 2011 almost doubled the loss for each of the previous four (4) years. The water loss for 2011 was in excess of 2.25 million gallons, which represents a 14% of the total production and 69% of total system water loss.

The loan amount for this project = $535,216.00

Water savings (green) portion of the loan = 70%

Estimated average water savings = 1.6 million gallons (MG) per year

3. BACKGROUND

The water system includes approximately 15 miles of PVC distribution lines ranging from 2" to 6" in diameter. The treatment plant processed an average of 43.5 thousand gallons of water per day in 2011 and an average of 31 thousand gallons per day for each of the previous four (4) years. In 2011 there were six (6) repairs made to the same 200 ft. section of one of the distribution lines that is targeted to be replaced. The line that is to be replaced with the 4" piping is the one that has had the most repairs in the last several years. The lines that are due to be replaced with 6" lines are very undersized due to the number of connections that have been added during the last 30+ years.

4. CALCULATED WATER LOSS

The treatment plant processed 15.9 million gallons of water in 2011 (MGY) and there were 13.6 million gallons (MG) billed/consumed = 2.3 million gallons (MG) water loss. Out of the 2.3 MG there were 700 thousand gallons used for flushing and fire, which equals 1.6 million gallons (MG) water loss due to leaking and broken water lines = approximately 69%. Our water loss greatly increased in 2011 over the previous years.

5. CONCLUSION

By replacing the 12,400 feet of aging water line, the system anticipates greatly decreasing the amount of water loss and providing more uniform pressure on the outer most parts of the distribution lines. A conservative cost to pump/treat water of $1.50 per 1,000 gallons would be a cost savings of $2400.00 per year. Additional benefits would be a reduction in the cost of repair and maintenance and the down time for water service to our customers.

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

2010 Water Audit Report

A. Water Utility General Information

1. Water Utility Name: New Ulm WSC
2. Contact:
   - 2a. Name
   - 2b. Telephone #
   - 2c. Email Address
3. Reporting Period: From 1/1/2010 To 12/31/2010
4. Source Water Utilization, percentage: Surface Water 0.00 % Ground Water 100.00 %
5. Population Served:
   - 5a. Retail Population Served: 300
   - 5b. Wholesale Population Served: 0
6. Utility's Length of Main Lines, miles: 10.00 — Assessment Scale: 1
7. Number of Wholesale Connections Served: 0
8. Number of Retail Service Connections Served: 155
9. Service Connection Density (Number of retail service connections / miles of main lines): 15.50
10. Average Yearly System Operating Pressure (psi): 60.00 — Assessment Scale: 1
11. Volume Units of Measure: Gallons

B. System Input Volume

		Assessment Scale
12. Produced Water	10,288,610 gallons	4
13. Production Meter Accuracy (enter percentage)	99.00 %	5
14. Corrected Input Volume	10,392,535 gallons	
15. Water Imported	0 gallons	0
16. Water Exported	0 gallons	0
17. System Input Volume (Corrected input volume, plus imported water, minus exported water)	10,392,535 gallons	

C. Authorized Consumption

		Assessment Scale
18. Billed Metered	8,527,320 gallons	3
19. Billed Unmetered	0 gallons	0
20. Unbilled Metered	722,327 gallons	3
21. Unbilled Unmetered	129,907 gallons	0
22. Total Authorized Consumption	9,379,554 gallons	

TEXAS WATER DEVELOPMENT BOARD
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AUSTIN, TX 78711-3231

2010 Water Audit Report

D. Water Losses

23. Water Losses (Line 17 minus Line 22)	1,012,982	gallons	

E. Apparent Losses

24. Average Customer Meter Accuracy (Enter percentage)	99.00	%	4
25. Customer Meter Accuracy Loss	86,135	gallons	
26. Systematic Data Handling Discrepancy	0	gallons	1
27. Unauthorized Consumption	25,981	gallons	2
28. Total Apparent Losses	112,116	gallons	

F. Real Losses

29. Reported Breaks and Leaks (Estimated volume of leaks & breaks repaired during the audit period)	105,000	gallons	2
30. Unreported Loss (Includes all unknown water loss)	795,866	gallons	0
31. Total Real Losses (Line 29, plus Line 30)	900,866	gallons	
32. Water Losses (Apparent + Real) (Line 28 plus Line 31) = Line 23	1,012,982	gallons	
33. Non-revenue Water (Water Losses + Unbilled Authorized Consumption) (Line 32, plus Line 20, plus Line 21)	1,865,215	gallons	

G. Technical Performance Indicator for Apparent Loss

34. Apparent Losses Normalized (Apparent Loss Volume / # of Retail Service Connections/365)	2	gallons

H. Technical Performance Indicators for Real Loss

35. Real Loss Volume (Line 31)	900,866	gallons
36. Unavoidable Annual Real Losses, volume (calculated)	1,691,775	gallons
37. Infrastructure Leakage Index (calculated) (Equals real loss volume divided by unavoidable annual real losses)	0.53250	
38. Real Losses Normalized (Real Loss Volume / # of Service Connections / 365) (This indicator applies if service connection density is greater than 32 / mile)	16	gallons

2010 Water Audit Report

39. Real Losses Normalized (Real Loss Volume/Miles of Main Lines/365) (This indicator applies if service connection density is less than 32/mile)	247	gallons	
I. Financial Performance Indicators			Assessment Scale
40. Total Apparent Losses (Line 28)	112,116	gallons	
41. Retail Price of Water	$0.00300		3
42. Cost of Apparent Losses (Apparent loss volume multiplied by retail cost of water, Line 40 x Line 41)	$336.35		
43. Total Real Losses (Line 31)	900,865.77		
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.)	$0.00060		3
45. Cost of Real Losses (Real Loss multiplied by variable production cost of water, Line 43 x Line 44)	$540.52		
46. Total Assessment Scale			32
47. Total Cost Impact of Apparent and Real Losses	$876.87		