Texas Water Development Board

# City of Grand Prairie

## CWSRF GREEN PROJECT RESERVE BUSINESS CASE EVALUATION

## STATE FISCAL YEAR 2012 INTENDED USE PLAN

## PROJECT NUMBER 73641

COMMITMENT DATE: July 19, 2012

DATE OF LOAN CLOSING: November 16, 2012

GREEN ESTIMATE AT CLOSING: $582,000

Texas Water Development Board

P.O. Box 13231, 1700 N. Congress Ave.
Austin, TX 78711-3231, www.twdb.state.tx.us
Phone (512) 463-7847, Fax (512) 475-2053

November 1, 2011

Ron McCuller,Director of Public Works
City of Grand Prairie
P.O. Box 534045
Grand Prairie, TX 75053-4045

Re: **State Fiscal Year 2012 Clean Water State Revolving Fund**
**Green Project Eligibility**

Dear Mr. McCuller:

The Texas Water Development Board (TWDB) received Green Project Information Worksheets from the City of Grand Prairie (City) for project #9446 in response to a request letter dated August 24, 2011. The letter states that the City is eligible for loan forgiveness in an amount up to 15% of the green component cost if it can demonstrate that the project has green costs that are 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 September 26, 2011 requested that $568,000 of the City's total unrounded IUP project cost of $578,508 be considered eligible for the CWSRF Green Project Reserve (GPR). The green element described includes replacement of approximately 3,400 linear feet of sewer lines in order to increase energy efficiency through inflow and infiltration (I/I) correction.
- The Environmental Protection Agency's (EPA's) *Green Project Reserve Guidance for Determining Project Eligibility* (TWDB-0161) lists energy efficiency projects such as I/I correction to save energy from pumping and reduced treatment costs and are cost effective as business case eligible for the GPR (Part A, 3.5-4).
- Additional information was received on October 19, 2011. Information presented on the Green Project Information Worksheets and its attachments provided sufficient information to confirm the eligibility of the proposed replacement of sewer lines for the GPR in accordance with TWDB-0161, Part A, 3.5-4.
- Therefore, at this time, the TWDB considers project costs associated with replacement of sewer lines in the amount of $578,508 (100%) to be eligible for the CWSRF GPR. This includes estimated construction costs in the amount of $497,000, $71,000 of project engineering, and $10,508 of loan origination.

- 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 TWDB commitment.

For SFY 2012, the TWDB is required by federal law to allocate no less than 20% of the capitalization grant toward green component costs (herein referred to as the Green Project Reserve). 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. A letter inviting the City to apply for Mainstream-Tier II funding with loan forgiveness will be sent separately.

If you have any questions regarding green project eligibility, please feel free to contact John Muras, Project Engineer, by phone at 512-463-1706 or by email at john.muras@twdb.state.tx.us.

The TWDB appreciates the City of Grand Prairie's interest in the CWSRF program.

Sincerely,

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

SB:rf

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

TEXAS WATER DEVELOPMENT BOARD

# Green Project Reserve

## Green Project Information Worksheets

**Clean Water State Revolving Plan**

**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-0162
Revised 12/2/2010

TEXAS WATER DEVELOPMENT BOARD
CLEAN WATER STATE REVOLVING FUND (CWSRF)
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 $ _____
- X Energy Efficiency $ 580,000
- ☐ Environmentally Innovative $ _____

Total Requested Green Amount $ 580,000

Total Requested Funding Amount $ 580,000

Type of Funding Requested:

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

Completed by:

Name: Ron McCuller Title: Director of Public Works

Signature: _____ Date: 10/19/11

TEXAS WATER DEVELOPMENT BOARD
CLEAN WATER STATE REVOLVING FUND (CWSRF)
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 A, Section 1.4 and 1.5 |
| Water Efficiency | Part A, Section 2.4 and 2.5 |
| Energy Efficiency | Part A, Section 3.4 and 3.5 |
| Environmentally Innovative | Part A, 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 Grand Prairie, Texas PIF #: 9446

Project Name: Project 20 and GP10

Contact Name: Ron McCuller, Director of Public Works, City of Grand Prairie

Contact Phone and e-mail: 972 237-8066 rmcculle@gptx.org

Total Project Cost: $580,000 Green Amount: $580,000
(Business Case Eligible)

Brief Overall Project Description:
The City of Grand Prairie entered into the TCEQ's Sanitary Sewer Overflow Initiative requiring the City to establish and implement a plan for reducing the potential for the occurrence of sanitary sewer overflows within the City's collection system. The City is a contracting party of the Trinity River Authority's Central Regional Wastewater System and pays for transportation and treatment of its wastewater flows based on the actual cost to TRA to transport and treat these flows. As part of the City's SSO Initiative Agreement with TCEQ, the City engaged Espey Consultants, Inc.(EC), to perform a collection system analysis of its wastewater collection system within the City. EC completed the 2008 Wastewater Master Plan for the City. This study identified infiltration in a number of the pipeline segments that were prioritized. The City has decided to advance the design of two segments demonstrated by hydraulic modeling prepared for the master plan to have substantial infiltration. The two segments named Project 20 and GP 10 are replacement segments within the City's collection system to remove infiltration which consists of the following:
1. Project 20 is a 1600 linear foot pipeline consisting of 12, 18, and 21-inch diameter pipeline which need to be increased in size to 18 and 24 inch new pipeline; and
2. GP 10 is a 1880 linear foot section of 21 and 24 inch pipeline which requires replacement but will remain the same size.

## 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. 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:

TWDB-0161, Part A – CWSRF, section 3.5-4 infiltration/inflow correction projects that save energy from pumping and reduced treatment costs and are cost effective

Detailed Description (attach additional pages if necessary):

The City of Grand Prairie's Project 20 and GP 10 are replacement segments within the City's existing collection system. The City's collection system discharges to the Trinity River Authority's Central Regional Wastewater System for transporting and treating all wastewater flows generated from the City's collection system. The City pays TRA $1.60/1000 gallons transported and treated to TRA for all flows received. This is the total rate TRA has established for handling all of its transport and treatment cost flows received from all of its 21 customer cities.

In 2008, Espey Consultants, Inc. built and calibrated a dynamic hydraulic model for the City's wastewater collection system. This model utilized actual flow measurement in the collection system using temporary flow meters. Each meter readout included five minute interval recorded measurements of flow throughout a three month period of time, which included multiple wet weather events. In receiving final meter records, we established a dry weather component and a wet weather component. Within the dry weather component we established a definition of the flow to distinguish base flow (domestic wastewater) and infiltration. The model was calibrated to allow for infiltration identification throughout the collection system, inclusive of the pipelines proposed for funding. Using these flow volumes, the following cost impact has been established:

1. For Project 20, infiltration was determined to be 4,282 gallons per day. The design criteria for the replacement is 50 years at a cost, conservatively estimated at the present TRA cost of $1.60/1000 gallons treated (actual future treatment cost is expected to be higher than the present cost). The total cost of the infiltration equates to $146,000 for the 50 year period.
2. For Project GP 10, infiltration was determined to be 22,000 gallons per day. Using 50 year design criteria for the replacement and a transportation and treatment cost of $1.60/1000 gallons, the cost of the infiltration to be removed is $642,820.

The total cost to be mitigated with the proposed improvements is $788,820. The cost of the two projects is $568,000, less than the costs of the infiltration to be removed, indicative that the benefit of the improvement exceeds the costs of the improvement. The payback period is estimated to be 36 years.

Green amount associated with water efficiency (business case eligible): $580,000
(Attach a detailed cost estimate if necessary)

| Project No: 20 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Location: Fargo St. (Fargo to TRA POE) | | | | | | | |
| | Pipe Length (ft) | Diameter (inch) | | Unit | Segment | Total Estimated | Total Estimated |
| | | Existing | Proposed | Price | Cost | Constr. Cost | Project Cost |
| | 405 | 12 | 18 | $93 | $37,746 | | |
| | 376.8 | 12 | 18 | $93 | $35,118 | | |
| | 227 | 18 | 24 | $122 | $27,694 | | |
| | 598 | 21 | 24 | $122 | $72,956 | | |
| **Totals** | **1606.8** | | | | **$173,514** | **$225,568** | **$257,147** |

| GP 10 | | | | | | | |
|---|---|---|---|---|---|---|---|
| Location: SW Corner of IH-30 & Beltline | | | | | | | |
| | Pipe Length (ft) | Diameter (inch) | | Unit | Segment | Total Estimated | Total Estimated |
| | | Existing | Proposed | Price | Cost | Constr. Cost | Project Cost |
| | 466 | 21 | 21 | $108.70 | $50,654 | | |
| | 327 | 21 | 21 | $108.70 | $35,545 | | |
| | 491 | 21 | 21 | $108.70 | $53,372 | | |
| | 233 | 21 | 21 | $108.70 | $25,327 | | |
| | 17 | 21 | 21 | $108.70 | $1,848 | | |
| | 236 | 24 | 24 | $122 | $28,792 | | |
| | 118 | 24 | 24 | $122 | $14,396 | | |
| **Totals** | **1888** | | | | **$209,934** | **$272,914** | **$311,122** |

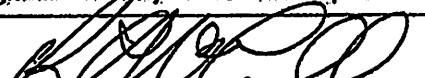
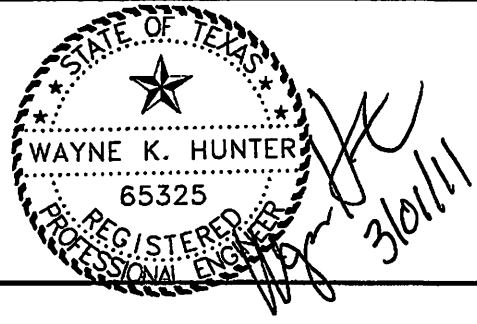
# Project Information Form

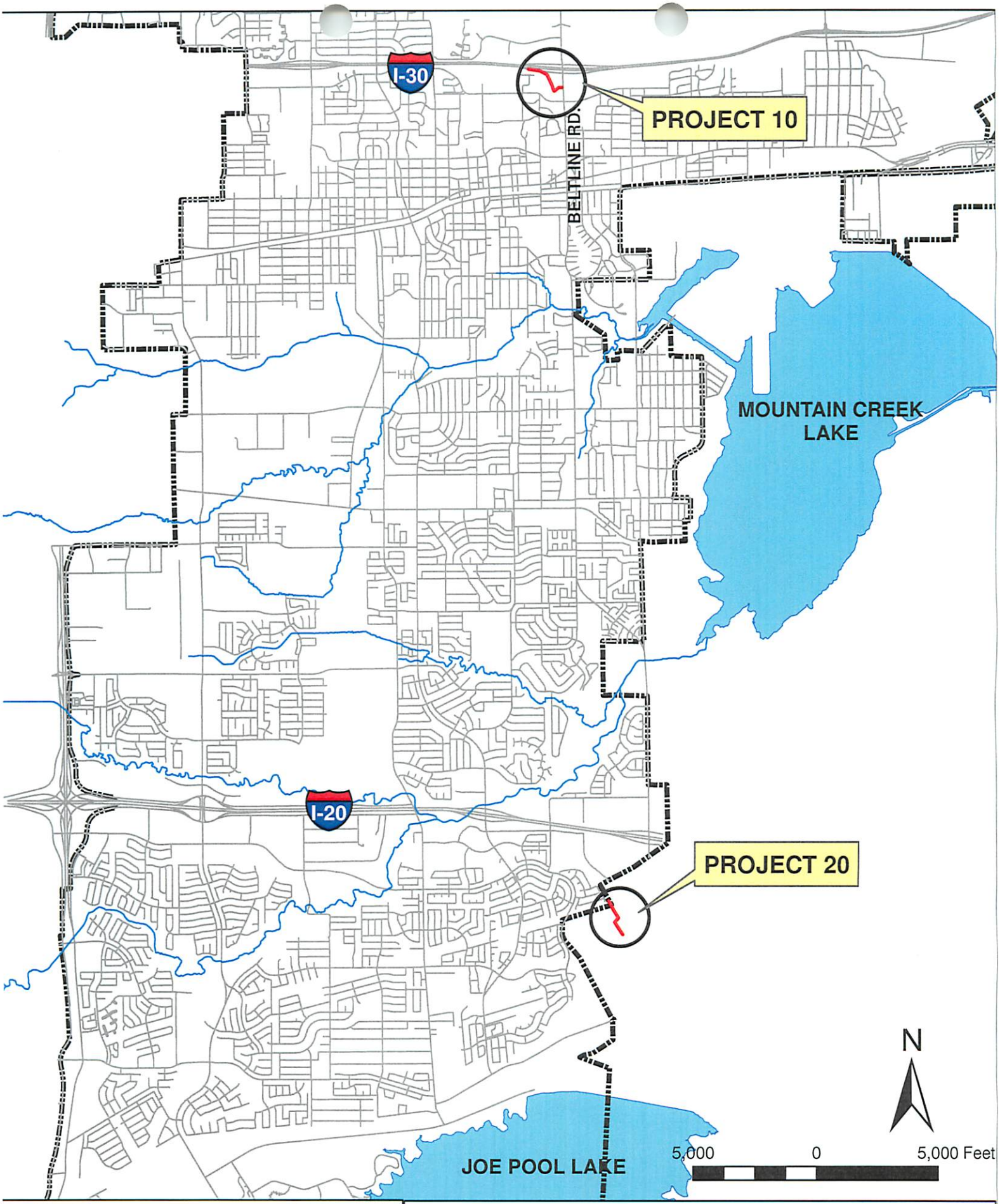
Name of Entity: City of Grand Prairie

## Section 12. ESTIMATED COSTS

| | Cost Category | (a) Planning | (b) Acquisition | (c) Design | (d) Subtotal (a)+(b)+(c) | (e) Construction | (f) Total (d)+(e) |
|---|---|---|---|---|---|---|---|
| A. | POTW Project: Treatment Project | | | | | | |
| B. | POTW Project: Collection Project | | | $71,000.00 | $71,000.00 | $497,000.00 | $568,000.00 |
| C. | NPS Project | | | | | | |
| D. | Estuary Management Project | | | | | | |
| E. | Engineering | | | | | | |
| F. | General, Legal, Financial | | | | | | |
| G. | Contingency | | | | | | |
| H. | Other (Describe cost.) | | | | | | |
| I. | Subtotal (Add Lines A-H.) | | | $71,000.00 | $71,000.00 | $497,000.00 | $568,000.00 |
| J. | Financing from Local Funds | | | | | | |
| K. | Financing from Other Sources | | | | | | |
| L. | Subtotal, SRF-Funded Amount (Subtract Lines J and K from Line I.) | | | $71,000.00 | $71,000.00 | $497,000.00 | $568,000.00 |
| M. | TWDB Loan Origination Fee (Calculate 1.85% of Line L.) | | | $1,313.00 | $1,313.00 | $9,194.00 | $10,508.00 |
| N. | Grand Total (Add Lines L and M.) | | | $72,314.00 | $72,314.00 | $506,185.00 | $578,508.00 |
| O. | Financial Assistance Amount (Round up Line N to the nearest $5,000.) | | | | $73,000.00 | $507,000.00 | $580,000.00 |
| P. | Green Portion [Identify the estimated cost of the green portion (from Question 9.B) as a percentage of Line O.] | | | | | | 100% |

## Section 13. AUTHORIZATION AND SIGNATURE

| Printed Name and Title of Entity's Authorized Representative | Telephone Number |
|---|---|
| Ron McCuller, Director of Public Works | 972-237-8066 |
| **Signature of Entity's Authorized Representative** | **Date (mm/dd/yyyy)** |
|  | 03/01/2011 |
| If the requested financial assistance amount (Section 12, Line O) is less than or equal to $100,000, include:<br>• Statement establishing the basis for the project cost.<br>• Signature of system operator. | If the requested financial assistance amount (Section 12, Line O) is greater than $100,000, include:<br>• Seal of registered professional engineer.<br>• Signature of registered Professional Engineer. |
| |  |




# EXHIBIT

## GREEN PROJECT LOCATION MAP

CITY OF GRAND PRAIRIE, TEXAS

# GREEN PROJECT COST SUMMARY

**PIF #** 9446
**Entity:** City of Grand Prairie
**Project Name:** Replacement of Sewer Lines - Projects No. 20 and GP 10
**Project Description:** Replacement of approximately 1,600 linear feet of a sewer line for project No. 20, and replacement of approximately 1,800 linear feet of a sewer line for project GP10.

**Green Description:** Business Case Energy Efficiency - To minimize unnecessary wastewater pumping and treatment through reduction of inflow and infiltration.

**Phases to be Funded:** DC

## PART I

| Construction, Engineering and Related Project Costs | Green Elements | Non-Green Elements | Total |
|---|---|---|---|
| 1. Construction (list elements below to sufficient detail) | | | |
| a) Project No. 20 | $ 225,000 | $ - | $ 225,000 |
| b) Project No. 10 | $ 272,000 | $ - | $ 272,000 |
| c) | $ - | $ - | $ - |
| d) | $ - | $ - | $ - |
| 2. Other Project Costs If Applicable (Land, easements, equipment, etc.) | | | |
| a) | $ - | $ - | $ - |
| b) | $ - | $ - | $ - |
| c) | $ - | $ - | $ - |
| 3. Engineering | $ 71,000 | $ 0 | $ 71,000 |
| **Total** | **$ 568,000** | **$ 0** | **$ 568,000** |

**100% Project Elements Considered Green**

## PART II

| Other Project Costs | Item Cost | Attributable to Green Elements |
|---|---|---|
| 1. Fiscal Services | | |
| a) Financial Advisor | $ - | $ - |
| b) Bond Counsel | $ - | $ - |
| c) Issuance Costs | $ - | $ - |
| d) Bond Insurance / Surety | $ - | $ - |
| e) Bond Reserve Fund | $ - | $ - |
| d) Other (Describe) | $ - | $ - |
| 2. Project Legal Expenses | $ - | $ - |
| 3. Contingency | $ - | $ - |
| **Total** | **$ -** | **$ -** |
| **Subtotal SRF Funded Amount** | **$ 568,000** | |
| 4. Loan Origination Fee (1.85%) | $ 10,508 | $ 10,508 |
| **Grand Total SRF Funded Amount** | **$ 578,508** | |

## PART III

**Part I Total Green Element Costs = $ 568,000**
**Part II Costs Attributable to Green Project Elements = $ 10,508**

**Eligible Green Project Reserve Amount = $ 578,508**

Green Review Notes: Project 20 proposes a nominal increase in diameter to better convey existing flows. Therefore, Project 20 effectively serves as a functional replacement and not a capacity expansion.

Reviewed By: Jonath Pi Date: 10/26/11
Checked By: JJM Date: 10-26-11