

**Drinking Water Revolving Fund
Green Project Reserve Qualification Template**

Applicant: Beecher Metropolitan District Project No: 7376-01
Project Name: Beecher Metropolitan District Water System Improvements

Identify by page number from the project plan, or attach excerpts, where water efficiency or energy efficiency improvement justification is provided or discussed to support the need for the recommended green project reserve component: Pages 3, 4, 8, 9, 16, 17.

Please ensure all requested information is provided to enable an assessment by the Michigan Department of Environmental Quality (DEQ) of whether the project or project component can qualify for funding from the green project reserve.

Meter Replacements with Conventional Meters

1. Over the last five years, water lost or unaccounted for in the system has averaged _____ gallons per year and is _____ percent of the water produced each year.
2. Identify the source of this information (i.e. water audit, water conservation study, production and billing records): _____
3. Identify the portion of the water loss that is likely due to inaccurate meters: _____
4. The expected reduction in water loss by installing replacement traditional water meters in all or a portion of the system is _____ gallons per year, reducing the water loss percentage to _____.
5. It takes _____ kilowatt hours (kWh) of electricity to produce and distribute 1,000 gallons of water. At a cost of \$ _____ per kWh, the estimated annual electrical cost for the water loss due to inaccurate meters based on the five-year average is \$ _____.
6. Based on the average cost per year for the loss and the estimated cost of _____ for replacing the meters, the project will pay for itself in _____ months/years.
7. Attached all relevant data and calculations that were used to provide answers to these questions.

Water Main Replacement

1. Over the last ten years, 172 water main breaks have occurred on the water mains that are proposed for replacement, an average of 8 breaks/mile/year.
2. Identify the length, diameter, age and type of pipe to be replaced: 11,540 feet of 4", 6", and 8" diameter cast iron pipe which is 60 to 70 years old.

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3. Each break is estimated to result in the average loss of 400,000 gallons of water, calculated to total 7,040,000 gallons/year of water lost for those water mains.
 4. Present the data indicating how this is a significant source of water loss in the system and how the pipes proposed for replacement are likely to generate the greatest return in leak reduction. The 2010 water loss for the Beecher Metropolitan District was 98,661,254 gallons. The proposed pipes to be replaced are 3.5% of the distribution system and result in 7.2% of the water loss.
 5. The energy savings from pumping/delivering water through the new water mains versus the old ones is estimated at 211 KWH/year.
 6. Describe the condition of the replaced mains with respect to friction/head loss etc from tuberculation or other deterioration issues. As appropriate, identify if the soils are corrosive and contributing to the deterioration/breaks or leaks in the mains, and how the replacement mains are designed to address future corrosion:
The replaced mains have increased friction/head losses due to accumulated deposits from iron and minerals from the ground water source. Soils do not appear to be contributing to the deterioration of the pipes. The replacement main will have a manufactured protective coating on the outside surface of the pipe and will be wrapped with a plastic protective wrap during
 7. Total projects costs for the water main replacement component of the project are installation.
\$ 1,530,000
 8. Identify the source of data used for these calculations: Beecher Metropolitan District records, Water Reliability Study prepared by Fleis & VandenBrink Engineering, Inc., DWRP Project Plan prepared by Fleis & VandenBrink Engineering, Inc.

Submitted by:

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Name

6-25-12
Date

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Title