

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

Applicant: Genesee County Dr. Comm. Div. WWS Project No: 7341-01  
Project Name: Dalton Subdivision

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 13.

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, 30 water main breaks have occurred on the water mains that are proposed for replacement, an average of 2.9 breaks/mile/year.
2. Identify the length, diameter, age and type of pipe to be replaced: 5,510 L.F.

Diameter = 6" and 8" watermain  
Age = 1950s  
Type = Cast Iron

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3. Each break is estimated to result in the average loss of 16,000 gallons of water, calculated to total 46,000 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. Replacing the current cast iron watermain with ductile iron watermain will greatly improve the leakage and breaks that occur.  
Even though there have only been an average of 3 breaks a year in the past year, this does not account for other "slow" leaks that may also be present.
  5. The energy savings from pumping/delivering water through the new water mains versus the old ones is estimated at 29 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:  
As witnessed, the old mains most likely have a "C" factor between 65-75, the new ductile iron watermain will have a "C" factor of 120 (cement lined).  
Future mains will be wrapped, per specifications with polyethylene wrap to protect from any potential corrosion from corrosive soils.
  7. Total projects costs for the water main replacement component of the project are \$ 1,061,550.
  8. Identify the source of data used for these calculations: Genesee County Drain Commissioner's Office - Div. Water & Waste Services' Operations and Maintenance Department and Engineering Department

Submitted by:

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Name

3/4/14  
Date

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Title