

STATE OF ALASKA
ALASKA CLEAN/DRINKING WATER FUND
GREEN PROJECT ASSESSMENT FORM

As applicable under the EPA annual capitalization grants provided to the Alaska Clean Water Fund (ACWF) and Alaska Drinking Water Fund (ADWF) loan programs, a portion of funds appropriated shall be for projects to address green infrastructure, water or energy efficiency improvements or other environmentally innovative activities.” To meet this condition under the federal grant for administering these funds, this assessment form is provided to document this eligibility or what is termed a “Categorical” or “Business Case” justification, which will be reviewed by DEC for provisional compliance. For more information on green infrastructure development, please review the following EPA web site:

http://cfpub.epa.gov/npdes/home.cfm?program_id=298

For those projects requiring a “Business Case,” Part 2 will require completion to qualify a “traditional project” as green; justification is broken down into two parts, technical and financial. The technical part should use information from a variety of sources such as maintenance or operation records, engineering studies, project plans or other applicable documentation to identify problems (including any data on water and/or energy inefficiencies) in the existing facility, and that clarifies the technical benefits from the project in water and/or energy efficiency terms. Financial justification needs to show estimated savings to a project based on the technical benefits, and demonstrate that the green component of the project provides a substantial savings and environmental benefit.

For more information and assistance in completing this assessment form, please contact the Municipal Matching Grants & Loans program in Anchorage at 907-269-7673, or in Juneau at 907-465-5300.

GENERAL INFORMATION

Name of Community Haines Borough
Address P.O. Box 1209
Haines, AK 99827
Contact Name Krista Title Deputy Telephone (907) 766-2231
Kielsmeier Clerk ext. 36

PROJECT INFORMATION

Project Name AC Pipe Replacement - Location Haines, AK
Muncaster
Project Type: New Construction Upgrades
 Stormwater Infrastructure Energy Efficiency Project
 Water Efficiency Project Innovative Environmental Project

Green Project Description: The Muncaster waterline is a primary feeder within the Skyline/Highlands area of Haines. This line is on the main feeder system that provides pumped water to Young Road and Skyline water tanks. The Muncaster waterline was fractured from long-term stress. Additional leaks are suspected in the area. Pipe replacement significantly reduces electrical costs for pumping water as well as reduces risk of losing water to customers.

PART 1 – GREEN PROJECT CATEGORY & COSTS

Identify the most appropriate “Green” Clean Water or Drinking Water category project type. Note, any selection with (BC) at the end will require a Business Case demonstration.

ENERGY EFFICIENCY – the use of improved technologies and practices to reduce the energy consumption of water quality projects.

- Wastewater/water utility energy audits Clean power for public owned facilities
- Leak detection equipment Retrofits/upgrades to pumps & treatment processes (BC)
- Replace/rehabilitation of distribution (BC) Other: _____ (BC)

WATER EFFICIENCY – the use of improved technologies and practices to deliver equal or better services with less water.

- Water meters Fixture Retrofit Landscape/Irrigation
- Graywater or other water recycling Replace/rehabilitation of distribution (BC)
- Leak detection equipment OTHER: _____ (BC)

GREEN INFRASTRUCTURE – Practices that manage and treat stormwater and that maintain and restore natural hydrology by infiltrating, evapotranspiring and capturing and using stormwater.

- Green Streets Water harvesting and reuse
- Porous pavement, bioretention, trees, green roofs, water gardens, constructed wetlands
- Hydromodification for riparian buffers, floodplains, and wetlands
- Downspout disconnection to remove stormwater from combined sewers and storm sewers
- OTHER: _____ (BC)

ENVIRONMENTALLY INNOVATIVE PROJECTS – Demonstrate new/innovative approaches to managing water resources in a more sustainable way. This may include projects that achieve pollution prevention or pollutant removal with reduced costs and projects that foster adaptation of water protection programs and practices to climate change.

- Wetland restoration Decentralized wastewater treatment solutions
- Water reuse Green stormwater infrastructure Water balance approaches
- Adaptation to climate change Integrated water resource management
- OTHER: _____ (BC)

PROJECT & GREEN COMPONENT COSTS

	<u>TOTAL PROJECT COSTS</u>	<u>TOTAL "GREEN" COMPONENT COSTS</u>
Administration	\$ <u>\$ 52,500</u>	\$ <u>\$ 52,500</u>
Legal	\$ _____	\$ _____
Preliminary Studies/Reports	\$ _____	\$ _____
Engineering Design	\$ <u>\$ 52,500</u>	\$ <u>\$ 52,500</u>
Inspection/Surveying/Construction Management	\$ <u>\$ 52,500</u>	\$ <u>\$ 52,500</u>
Construction	\$ <u>\$ 525,000</u>	\$ <u>\$ 525,000</u>
Equipment	\$ _____	\$ _____
Contingencies	\$ <u>\$ 105,000</u>	\$ <u>\$ 105,000</u>
Other _____	\$ _____	\$ _____
Total Costs	\$ <u>\$ 787,500</u>	\$ <u>\$ 787,500</u>

PART 2 – PROJECT “BUSINESS CASE” TECHNICAL/FINANCIAL ASSESSMENT

TECHNICAL ANALYSIS OF BENEFITS*

In addition to this form, a supporting technical and financial analysis is required to verify energy and water saving efficiencies for any green component of the project. For green infrastructure and innovative environmental type projects, the analysis should include any applicable efficiency and environmental benefits. For assisting MGL in evaluating “Business Case” assessments of water main, meter, and pump facility replacement type projects, the attached form titled “ADWF - Water/Energy Efficiency Determination - Water Main Replacement/Meter/Pump Facility” is required to be completed. Once the form is complete along with any supporting documentation, please submit documentation to the MGL program for review and concurrence. Note, only water/energy efficiencies that achieve a 20% or greater increase in efficiency will categorically qualify as a Green project.

CERTIFICATION STATEMENT:

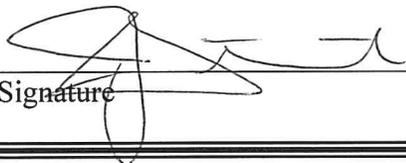
I certify the above information is current and accurate.

Jila Stuart

Name

Chief Fiscal Officer

Title



Signature

9/10/15

Date

Submit Completed Form to:

Alaska Department of Environmental Conservation
Municipal Matching Grants & Loans
555 Cordova Street
Anchorage, AK 99501-2617

**ADWF - Water/Energy Efficiency Determination
Water Main Replacement/Meter/Pump Facility**

General Information

Community/System Name	Haines Borough
Project Name	A/C Pipe Replacement - Muncaster (ADWF# 39516)
Estimate Total Cost	\$787,500

Water Main Replacement

(See Attached)

1	Percent loss within the distribution system?	
2	Water main material & C-values of pipe to be replaced?	
3	Water main age?	
4	Approximately what pipe length is to be replaced and what percentage of total distribution mains will the project replace?	
5	Number of breaks recorded in past twelve months for the area to be replaced? (based on O&M records)	
6	Estimated water lost due to breaks and leaks	
7	Primary reason for breaks?	
8	How much of an impact on distribution system water loss is this project expected to have?	
9	Are there other efficiencies to be gained by the replacement? (i.e. reduced head and therefore less energy loss in an upstream pump station, etc.)	

Meter Installation/Replacement

10	Is meter installation/replacement part of this project?	No
11	Reason for replacement?	N/A
12	If so, estimated cost of meter installation/replacement?	N/A

Pump Facilities

13	Are pumps or pumping facilities part of the project?	No
14	Age of existing pumps or pumping facilities?	N/A
15	Existing pump/motor efficiency rating, if known?	N/A
16	New pump/motor efficiency rating.	N/A
17	List the manufacture, make, and model of key components (motors, pumps, etc.)	N/A
18	Document that the energy efficiency specifications for the proposed equipment demonstrate substantial savings over other currently available equipment	N/A

Information Provided by:

Name and Title of persons providing above information?	Jim Dorn, P.E., Principal
Affiliation?	Carson Dorn, Inc. Environmental/Engineering Services
Address (both mailing & location if different)?	Carson Dorn, Inc. 712 W. 12th Street Juneau, AK 99801
Contact Phone Number?	(907) 586-4447
E-Mail Address	jdorn@carsondorn.com

**ADWF WATER/ENERGY EFFICIENCY DETERMINATION
WATER MAIN REPLACEMENT/METER/PUMP FACILITY**

**HIGHLAND ESTATES 2013 WATER SYSTEM UPGRADE
(MUNCASTER ROAD)**

WATER MAIN REPLACEMENT

1. Percent loss within the distribution system?

Other asbestos cement pipe replacement projects have corrected many small, unidentified leaks in the water system. Some have resulted in reduction of water demand in excess of 10 percent of the total flow. It is expected that this project will provide similar reductions.

2. Water main material and C-values of the pipe to be replaced?

Asbestos cement pipe is to be replaced with new AWWA C-900 PVC pipe. The C-values for both asbestos cement and PVC pipe are about 145.

3. Water main age?

The asbestos cement pipe water distribution system was constructed in 1973.

4. Approximately what pipe length is to be replaced and what percentage of the total distribution system mains will the project replace?

This project will replace approximately 3,800' of old brittle, failing asbestos cement pipe with new AWWA C-900 PVC pipe. The approximate total length of the Haines Borough water distribution system mains is 94,500'. This project replaces about 4.0% of the water distribution system.

5. Number of breaks recorded in the past 12 months?

There have been at least 2 major breaks over the last several years.

6. Estimated water lost due to breaks and leaks?

There have been known leaks in this section of line that have had to be repaired. There are undoubtedly many small leaks that are not known. Asbestos cement pipe is brittle and with age more and more small leaks and cracks occur in the pipe, causing increased water loss in the system. Based on an estimate of just 10 leaks averaging 2 gpm each, the line may be leaking up to 28,800 gallons per day.

7. Primary reason for the breaks?

The project area currently has brittle asbestos cement pipe that is past its anticipated useful life. Slight settlement in the line causes the line to break.

8. How much of an impact on distribution system water loss is this project expected to have?

If 10 leaks consisting of 2 gpm each are corrected by this project, the water demand in the system will be reduced by approximately 10 percent. This will allow the water system to better meet the demand of its customers.

9. Are there other efficiencies to be gained by the replacement? (i.e. reduced head and therefore less energy loss in and upstream pump station, etc.)

The Highland Estates, Muncaster Road area is at a higher elevation that requires all water serving the area to be pumped. Replacing the old leaky asbestos cement pipe in the area with new AWWA C-900 PVC pipe is expected to significantly reduce the power costs associated with pumping water to serve the area. It is expected that the power costs could be reduced by over 50% as result of having to pump less water once the older leaking asbestos cement pipe has been replaced.