



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

Under the EPA annual capitalization grants provided to the Alaska Clean/Drinking Water Fund loan programs, it is stated that “To the extent there are sufficiently eligible project applications, not less than 20 percent of the funds appropriated herein for the Revolving (loan) funds 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](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 Field of View Subdivision Wasilla

Address NE Corner of S18, T18, NR1E and SW 17 acre portion of S7, T18, NR1E

Contact Name David Kranich Title Member Telephone (907) 346-1901     

**PROJECT INFORMATION**

Project Name Field of View Subdivision New Well Location Wasilla

Project Type:  New Construction  Upgrades

Stormwater Infrastructure  Energy Efficiency Project

Water Efficiency Project  Innovative Environmental Project

Green Project Description: **\*\*\*NOTE\*\*\* This is a revision to a previously submitted “Green project assessment” for the same project.** The current well only produces 3-6 GPM. Because of the low production of the well, the well pump starts and stops many times (at least 16 times) a day in an attempt to fill (3) 2500 gallon storage tanks and keep up with daily demand. The well does not meet daily demand and approximately 6000 gallons of water is hauled from the city of Palmer each week and pumped into the storage tanks. The new well system will utilize two pumps to deliver unlimited water at up to 160 gallons per minute from the new well directly into the distribution system. The elimination of routine booster pumping and water hauling will reduce overall pumping energy consumption by approx 78%.

## 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.

- |  |  |
|--|--|
| <input type="checkbox"/> Wastewater/water utility energy audits      | <input type="checkbox"/> Clean power for public owned facilities                           |
| <input type="checkbox"/> Leak detection equipment                    | <input checked="" type="checkbox"/> Retrofits/upgrades to pumps & treatment processes (BC) |
| <input type="checkbox"/> Replace/rehabilitation of distribution (BC) | <input checked="" type="checkbox"/> Other: <u>New Well and Pumping Design</u> (BC)         |

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

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> Water meters                       | <input type="checkbox"/> Fixture Retrofit                            | <input type="checkbox"/> Landscape/Irrigation |
| <input type="checkbox"/> Graywater or other water recycling | <input type="checkbox"/> Replace/rehabilitation of distribution (BC) |   |
| <input type="checkbox"/> Leak detection equipment           | <input type="checkbox"/> 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.

- |   |   |
|---|---|
| <input type="checkbox"/> Green Streets  | <input type="checkbox"/> Water harvesting and reuse |
| <input type="checkbox"/> Porous pavement, bioretention, trees, green roofs, water gardens, constructed wetlands |   |
| <input type="checkbox"/> Hydromodification for riparian buffers, floodplains, and wetlands                      |   |
| <input type="checkbox"/> Downspout disconnection to remove stormwater from combined sewers and storm sewers     |   |
| <input type="checkbox"/> 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.

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Wetland restoration          | <input type="checkbox"/> Decentralized wastewater treatment solutions |   |
| <input type="checkbox"/> Water reuse                  | <input type="checkbox"/> Green stormwater infrastructure              | <input type="checkbox"/> Water balance approaches |
| <input type="checkbox"/> Adaptation to climate change | <input type="checkbox"/> Integrated water resource management         |   |

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### **PROJECT & GREEN COMPONENT COSTS**

	<b><u>TOTAL PROJECT COSTS</u></b>	<b><u>TOTAL "GREEN" COMPONENT COSTS</u></b>
Administration	\$ 20,000	\$ 20,000
Legal	\$	\$
Preliminary Studies/Reports	\$	\$
Engineering Design	\$	\$
Inspection/Surveying/Construction Management	\$ 5000	\$ 5000
Construction	\$ 601,000	\$601,000
Equipment	\$ 27,000	\$ 27,000
Contingencies	\$ 95,000	\$ 95,000
Total Costs	\$ 748,000	\$ 748,000

## **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.

_____ Name <i>David Kranich</i> _____ Signature	_____ Title      Utility Manager _____ Date      9/13/2013
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Submit Completed Form to:

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

**General Information**

Community/System Name	Field of View Subdivision/Oasis Water, LLC
Project Name	Field of View Subdivision new well
Estimate Total Cost	\$748,000

**Water Main Replacement**

1	Percent loss within the distribution system?	No loss due to breaks or leaks know at this time. This project involves installing 2600 feet of NEW main line, not replacement. The new line is required to deliver water from the new water wells/source to the subdivision.
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?	None
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.)	NO

**Meter Installation/Replacement**

10	Is meter installation/replacement part of this project?	Yes-Main meters only, no individual meters
11	Reason for replacement?	Ground Water Rule requirement

12	If so, estimated cost of meter installation/replacement?	\$500
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**Pump Facilities**

13	Are pumps or pumping facilities part of the project?	Yes. 2 new wells and 2 new well pumps in the new wells. Old wells and pumps to be abandoned
14	Age of existing pumps or pumping facilities?	7 years
15	Existing pump/motor efficiency rating, if known?	<p>Calculation :(amps x volts x hr/1000 =Kwh)  Well Pump 11 amps@ 230V x 10 hr/1000 =25.3 Kwh/day Production is 3578 gpd or 141 gallon /kwh  Booster Pump 13.4 amps @ 230V x1.37hr/1000 = 4.2 Kwh/day. Production is 4112 gpd or 979 gallons per Kwh</p> <p>Total consumption per day to produce 4112 gallons 33.3 Kwh or 123.5 gallons per KWH</p>
16	New pump/motor efficiency rating?	<p>New configuration eliminates booster pumping except during periods of extreme demand, providing average system demand with one well pump.</p> <p>Well Pump 7.5 amps @ 230Vx 4.28hr/1000 =7.38Kwh to produce 4112 gallons or 557 gallons per Kwh</p>
17	List the manufacture, make, and model of key components (motors, pumps, etc.)	Goulds Model 16S15-14
18	Document that the energy efficiency specifications for the proposed equipment demonstrate substantial savings over other currently available equipment.	Pumping energy efficiency with the new facility will increase from 123.5 gallons/Kwh to 557 gallons/kwh, a 7% increase in pumping efficiency.

**Information Provided by:**

Name and Title of persons providing above information?	David Kranich
Affiliation?	Utility Manager
Address (both mailing & location if different)?	Box 233368 Anchorage, Ak 99523
Contact Phone Number?	907-346-1901

E-Mail Address	Dave@nusalaska.com
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**Water Main Replacement**

1	Percent loss within the distribution system?	Determine from information in surveys or obtain from water system. If cannot be calculated due to lack of meters or other reason note as unknown.
2	Water main material & C-values of pipe to be replaced?	Based on project description or plans.
3	Water main age?	Age alone does not make a project green but may be used for supporting information for an overall case.
4	Approximately what pipe length is to be replaced and what percentage of total distribution mains will the project replace?	This information used to determine impact of project on line 8.
5	Number of breaks recorded in past twelve months for the area to be replaced? (based on O&M records)	Water system will need to document the number of breaks through O&M reports.
6	Estimated water lost due to breaks and leaks?	Estimated water loss will need to be provided by operators. May be determined from water tower level drop or booster station run time increases, etc. for major breaks.
7	Primary reason for breaks?	Reasons alone does not make a project green but may be used for supporting information for an overall case.
8	How much of an impact on distribution system water loss is this project expected to have?	Line 1 – (ADD X line 1 – line 6)/ADD=overall water loss decrease OR Total volume water saved on an annual basis.
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.)	Reduced head and therefore less energy loss in an upstream pump station, or few hours (estimate number) of pumps will need to operate to supply demand, etc.

**Meter Installation/Replacement**

10	Is meter installation/replacement part of this project?	
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11	Reason for replacement?	Replacement due to inefficient/inaccurate meters qualify however replacement for remote read alone wouldn't.
12	If so, estimated cost of meter installation/replacement?	

**Pump Facilities**

13	Are pumps or pumping facilities part of the project?	If so note if a new facility or a replacement
14	Age of existing pumps or pumping facilities?	
15	Existing pump/motor efficiency rating, if known?	(Head X Capacity X 8.34 / 3956)/HP needed based on pump curve X motor efficiency (if unk. Use 0.85) X 100%  Head (ft.) = (psi out – psi in)/2.31 Capacity = actual output in gpm HP = horsepower
16	New pump/motor efficiency rating?	Best if provided by engineer or a similar Calc. can be used as in line 15.
17	List the manufacture, make, and model of key components (motors, pumps, etc.)	
18	Document that the energy efficiency specifications for the proposed equipment demonstrate substantial savings over other currently available equipment.	Energy efficiency should not be established by simply comparing the new equipment to equipment being replaced, since any replacement equipment would be expected to be more efficient than existing equipment.