Agency: Commerce, Community and Economic Development

Grants to Municipalities (AS 37.05.315)

Grant Recipient: Skagway

Project Title: **Project Type:** Remodel, Reconstruction and Upgrades

Skagway - Municipal Wastewater Treatment Facility Improvements Due to Seasonal Impacts

State Funding Requested: $800,000 **House District:** 5 / C

One-Time Need

Brief Project Description:

POSSIBLE CRUISE SHIP PROJECT: REGIONAL CRUISE SHIP IMPACT FUND

The Municipality of Skagway owns & operates a primary treatment waste water facility which currently has a301(h)waiver. However,Biological Oxygen Demand removal at the facility is not as consistent that43% of the time removal not achieved.

Funding Plan:

Total Cost of Project: $5,600,000

	Funding Secured		Other Pending Requests		Anticipated Future Need	
	Amount	*FY*	*Amount*	*FY*	*Amount*	*FY*
Federal Funds	$1,728,000	2010				
State Funds	$2,500,000	2010				
Local Funds	$575,000	2010				
Total	$4,803,000					

Detailed Project Description and Justification:

POSSIBLE CRUISE SHIP PROJECT: REGIONAL CRUISE SHIP IMPACT FUND

The Municipality of Skagway has long had problems with its wastewater treatment plant. Its most recent violation notice from the Environmental Protection Agency (EPA) was received on June 5, 2008. Many of the issues in the EPA complaint stem from the difficulty the Municipality has had with the agency. The greater issue for the community is the existing facility's ability to cope effectively with the massive influx of visitor that arrive each summer.

The permanent resident population of Skagway is just over 800 people. In the brief summer tourism season that lasts for about five months, more than a thousand temporary workers arrive in town and over 800,000 cruise ship passengers disembark at in Skagway. On a busy day, there can be four large cruise ship moored at the dock and often there are smaller cruise vessels and a state ferry in port during the same period of time. It is realistic to expect 10,000 people to visit the community in one day.

This influx of cruise ship passengers creates the problems experienced by the wastewater treatment plant. The facility does not effectively handle the surge in volume caused by the increase in traffic. An initial problem the facility had was excessive numbers of E. coli bacteria being present at the discharge point. A new chlorination system was engineered, purchased and

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Contact Number: 465-3732

For use by Co-chair Staff Only:

$800,000 Approved

6:20 PM 5/4/2010

installed that now solves this problem and created a new one. Regulations require the chorine be neutralized before the treated effluent is discharged. The chemical used in this process falsely impacts readings on biological oxygen demand that furthers the EPA violation problems experienced in the facility.

The essence of this project justification is the Municipality of Skagway owns and operates a primary treatment waste water facility which currently has a 301(h) waiver which allows it to provide prmary treatment of our waste water prior to discharging to a marine waterway.Plant records indicate the facility consistently removes Total Suspended Solids consistent with the standards required for the discharge permit. However, Biological Oxygen Demand(BOD) removal at the facility is not as consistent. Records indicate nearly 43% of the time the removal criteria for BODS was not achieved.

In short the project description is the Municipality contracted with an Engineering firm to conduct the Skagway Waste Water Treatment Plant Feasibility Study. Three alternatives were studied:1-to modify the existing process for increase solids removal, 2-replace existing primary clarifiers with enhanced sedimentation units,3-to provide tertiary treatment with membrane bioreactors (MBR). The alternative that was selected was the addition of enhanced sedimentation units with fine influent screens and new high solids dewatering equipment to increase solids removal from the facility.The Municipality wanted to take advantage of American Recovery and Reinvestment Act(ARRA) funds available for the project($1.428 million loan-90% forgivable). The Municipality was granted permission to use the ARRA funds to pre-purchase only major equipment specified in the feasibilty study and it was furthered required these funds must be obligated by Jan. 15,2010 -which they were. Design for the remaing Plant upgrades will commence after equipment procurement. This allows for specific equipment to be integrated into the design for the facility upgrades which include:1-installation of pre-purchased influent screens, enhanced primary clarification units, and biosolids dewatering equipment, 2- modifications to aerobic digesters to reduce solids recycling in the plant, 3-modifications to chlorine contact chamber. Timeline for completion and startup is March 2011.

Project Timeline:

The Project timeline is the following:
-Notice to Proceed with design: 12/4/09
-Issue Equipment Procurement Specifications:12/31/09
-Notice of Award for Equipment Procurement:1/15/10
-DEC Plan Review: 5/15/10
-Award Construction Contract8/1/10
-Completion/Start-up 3/31/11

Expenditures for Engineering & Equipment Procurement are occurring now.
Expenditures for for Plant Upgrades will commence after 8/1/10 Construction Contract is awarded.

Entity Responsible for the Ongoing Operation and Maintenance of this Project:

The Municipality of Skagway

Contact Name: Kaci Schroeder Hotch
Contact Number: 465-3732

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6:20 PM 5/4/2010

Grant Recipient Contact Information:

Name:	Tom Smith
Address:	700 Spring Street
	Skagway, AK 99840
Phone Number:	(907)983-2297
Email:	t.smith@skagway .org

Has this project been through a public review process at the local level and is it a community priority? [X] Yes [ ] No

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Proposed by:	Assembly		
Vote:	6 Aye	0 Nay	0 Absent

MUNCIPALITY OF SKAGWAY, ALASKA

RESOLUTION NO. 09-29R

A RESOLUTION OF THE MUNICIPALITY OF SKAGWAY, ALASKA SETTING THE PRIORITY LIST FOR CAPITAL IMPROVEMENT PROJECTS.

WHEREAS, the Municipality of Skagway would like to establish a capital improvement projects priority list;

NOW THEREFORE BE IT RESOLVED, that the Municipality of Skagway establishes the following projects as the Capital Improvement Projects Priority List:

1. Sewer Treatment Plant
2. Renovation of Small Boat Harbor
3. Port Gateway Project
4. Main Street Sidewalk Replacement
5. Public Safety Building
6. Liarsville Bike Path
7. Main Street Repaving

PASSED AND APPROVED by a duly constituted quorum of the Borough Assembly of the Municipality of Skagway this 17th day of September, 2009.

Thomas D. Cochran, Mayor

ATTEST:

Marjorie D. Harris, Municipal Clerk

(SEAL)

Skagway Improvements to Wastewater Treatment Plant - Membrane Bioreactors

The Municipality of Skagway has long had problems with its wastewater treatment plant. Its most recent violation notice from the Environmental Protection Agency (EPA) was received on June 5, 2008. Many of the issues in the EPA complaint stem from the difficulty the Municipality has had with the agency. The greater issue for the community is the existing facility's ability to cope effectively with the massive influx of visitor that arrive each summer.

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This influx of cruise ship passengers creates the problems experienced by the wastewater treatment plant. The facility does not effectively handle the surge in volume caused by the increase in traffic. An initial problem the facility had was excessive numbers of E. coli bacteria being present at the discharge point. A new chlorination system was engineered, purchased and installed that now solves this problem and created a new one. Regulations require the chorine be neutralized before the treated effluent is discharged. The chemical used in this process falsely impacts readings on biological oxygen demand that furthers the EPA violation problems experienced in the facility.

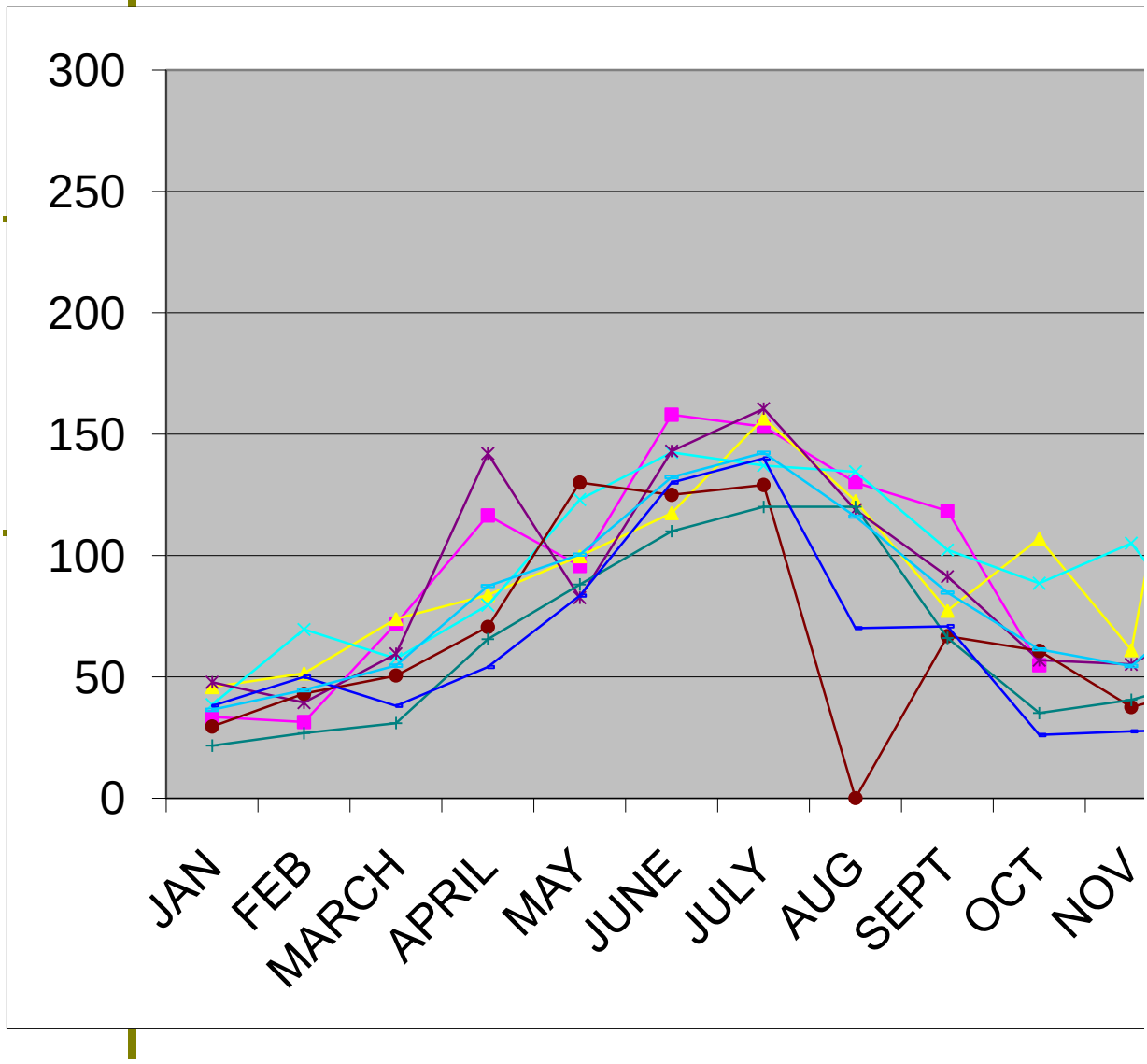
The solution for the wastewater treatment plant is a retrofit that adds an additional level of treatment to the effluent using a membrane bioreactor system. This retrofit would solve problems in community with wastewater treatment now and for the future. We don't believe any community in Alaska is seeking to raise their wastewater treatment to this standard.

Membrane bioreactors (MBR) combine activated sludge treatment with a liquid/solid separation process that uses a membrane filter. The ultra filtration membrane eliminates clarification and tertiary filtration of wastewater. The membrane is immersed in an aeration tank that overcomes the problems associated with poor settling in a conventional activated sludge system that is overloaded by peak volumes of effluent. The technology allows the wastewater treatment plant to handle effluent that is carrying higher than normal levels of suspended solids. Membrane bioreactors are very effective at removing both soluble and particulate biodegradable material a higher load rates. MBR systems also ensure better nitrification in cold weather environments. Initial construction costs of MBR systems are high, but the technology is giving a level of acceptance.

MBR systems have a small footprint and are known for producing a high quality effluent that is reused in many regions. A complete system can be dropped into a treatment cell in the existing wastewater treatment plant. The Municipality has moved forward with a request for engineering design and hopes to complete the project pending funds in this calendar year.

BOD INFLUENT

	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY
2005	94.20	73.65	145.90	159.00	155.50	327.50	285.50
2004	84.30	62.05	96.40	143.75	178.50	212.00	314.50
2003	56.00	99.00	74.00	91.50	145.00	148.50	170.50



AUG	SEPT	OCT	NOV	DEC
209.50	120.90	117.25		
172.50	137.50	132.00	111.95	359.50
161.00	169.00	136.30	104.00	76.90