

Agency: Commerce, Community and Economic Development**Grants to Municipalities (AS 37.05.315)****Grant Recipient: Juneau****Project Title:****Project Type:** Maintenance and Repairs

Juneau - Sewage System Major Repairs & Expansion

State Funding Requested: \$3,000,000
One-Time Need**House District:** Juneau Areawide (3-4)**Brief Project Description:**

Design and installation of a new steel replacement shell for the sludge incinerator vessel at the Juneau-Douglas Treatment Plant (JDTP).

Funding Plan:**Total Cost of Project:** \$3,000,000*There is no other funding needed***Detailed Project Description and Justification:**

Public Need and Benefit: The fluidized sand-bed incinerator at the JDTP is the sole disposal method for sanitary sewer sludge for the City and Borough of Juneau. This project involves major structural rehabilitation to the sludge incinerator by "over-skinning", or replacing, the steel reactor vessel shell. The existing steel shell has experienced substantial thinning due to corrosion caused by condensing internal acidic vapors. This work will restore adequate shell thickness and structural strength to the reactor vessel and will permit replacement of damaged sections of insulating materials just within the shell wall. These repairs are critical for the incinerators continued use and are estimated to extend the incinerator vessel life 10 to 15 years.

Project Scope: Design, bid, manufacture and install a new steel (stainless grade) replacement shell for the sludge incinerator vessel.

Project Timeline: Work must be completed by December 2010.

Project Timeline:

FY 2011

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

City and Borough of Juneau, Public Works Department

Grant Recipient Contact Information:

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Total Project Snapshot Report

FY 2011 Capital Budget

TPS Report 54191v1

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

Waste incinerator needs \$3 million

Sample of corroded facility's outer wall less than thick

By Mary Catharine Martin | *JUNEAU EMPIRE*, Tuesday – February 9, 2010

The gray wall of the Juneau-Douglas Treatment Plant's incinerator is speckled with numbers. The wall reads ".198," ".159," ".082," ".096," ".203."

That's the thickness to which the incinerator's outer shell, originally a quarter of an inch thick, has corroded in those places.

The incinerator, which has already lasted for 18 years out of a projected 15 to 20, is corroding more quickly than expected, prompting the city to apply for a \$3 million loan from the Alaska Department of Environmental Conservation to coat the outside of the incinerator with a .25" thick stainless steel shell. Monday, the city's Public Works and Facilities Committee forwarded the recommendation on to the full Assembly, which has to express its support for the project via a resolution for the loan.

Despite its \$3 million price tag, the project is a money-saver compared to the two alternatives - replacing the combustion reactor entirely, which would cost \$7.5 million plus sludge shipping costs for between eight to 12 weeks (the plant has the capacity to store about 30 days worth of sludge) or waiting too long to replace the shell - which would mean shipping the sludge to Washington or Oregon to the tune of \$5,000 to \$10,000 per day.

"It's an economic danger area," said water and wastewater utility engineer Jim Heumann. "The public would be safe (if it broke), but at the cost of a lot of money until you got the machine fixed... like with Snettisham, you would start paying a lot more."

Heumann wrote a memo in January outlining the problem. "It (the incinerator) is in bad condition as a result of the deterioration of its insulation material and corrosion metal loss of the outer steel shell which is accelerated by the presence of seawater in the local sewage stream," he said. "At present, plant staff is keeping the incinerator running by welding on temporary patches when cracks and pitting occur."

Engineering Department Director Rorie Watt said the patches are actually stronger than the wall of the incinerator. The danger is that the wall could get so thin patches could no longer be attached.

Heumann describes the incinerator as "like an air popcorn popper" or a wood stove.

Hot air feeds a bed of sand in the unit, which bounces around inside as it dries up and burns between 4 and 5 tons of sludge per day. The incinerator heats up to about 1200 to 1500 degrees on the inside and 300 to 400 degrees on the outside and is composed of about .25" of mild steel on the outside - unlike stainless steel, mild steel rusts - with internal layers of about 4½ inches of insulation, and about 9 inches of heat-resistant brick.

Heumann said the brick is in good condition.

"We'll see the need to put additional money in upcoming years - but this will meet the most pressing need," he said of renovations.

Watt said city staff is "95 percent sure" the \$3 million in renovations will be enough.

The loan would last between 10 and 15 years. The city has \$500,000 in its draft budget for the project. City Manager Rod Swope is asking for an earmark from Juneau's state legislative delegation to cover the entire cost.

Another possibility to pay for the renovations would be a 5 percent increase in sewer rate fees, which would work out to about \$3 extra per month.

Staff has recommended the work "proceed expediently" and be completed within 12 months.

The Assembly approved \$110,000 for incinerator repairs and replacement last February.