

Energy Efficiency Upgrades for Sanitation Facilities in Selawik, Alaska



DOE Program Review
November 2011

Alaska Native Tribal Health Consortium
Division of Environmental Health & Engineering



Selawik Overview



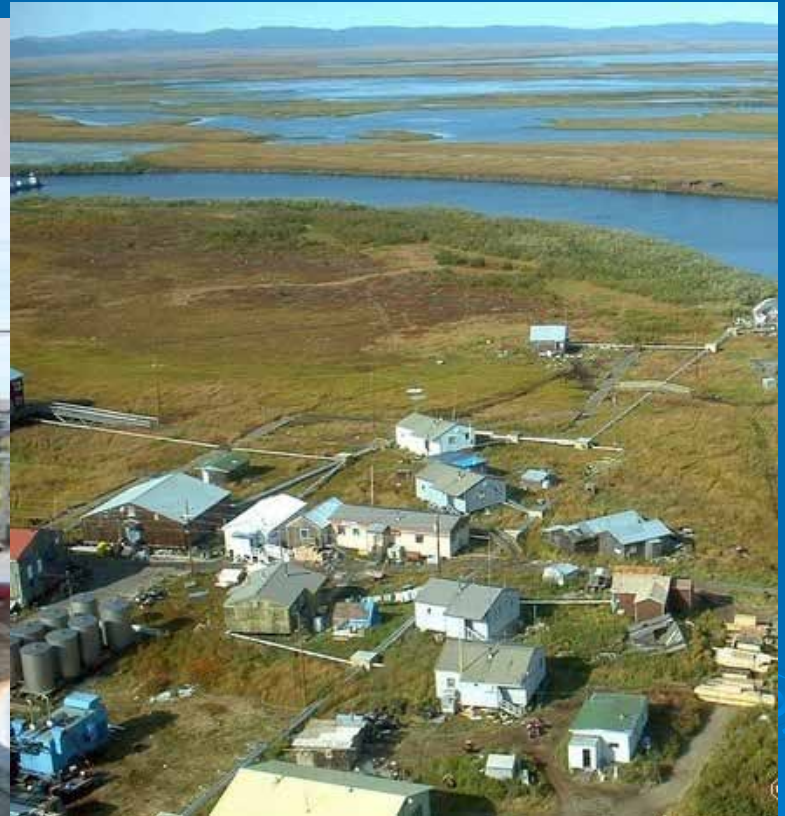


Selawik Overview





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Selawik Overview: Energy Use & Costs

Electricity

- FY 2010 \$91,559
- Total = 337,829 kWh
- Average = \$0.271/kWh

Fuel

- FY 2010 \$38,902
- Total = 10,514 gal
- Average = \$3.70/gal

Heat Recovery

- FY 2010 \$7,688
- Total = 5,125 equiv. gal
- Average = \$1.50/gal





Project Objectives

- Ø Part of a larger effort to upgrade utility
- Ø Improve Overall Energy Efficiency
- Ø Reduce Dependence on Fuel
- Ø Promote Affordable & Sustainable Utility

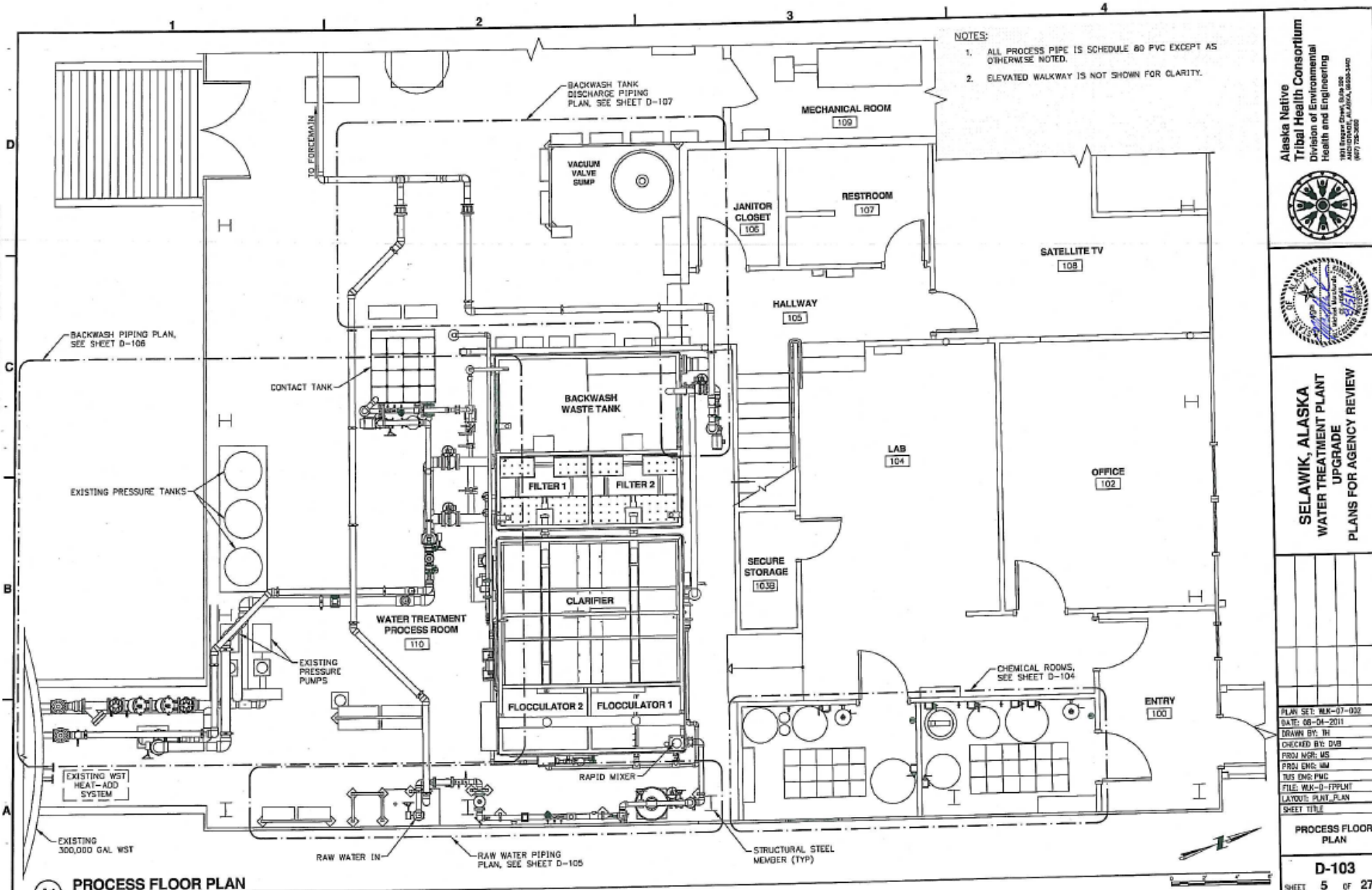




Project Objectives



Project Objectives





Current Project





Project Objectives

Utility	Recommended Retrofit Measures
Water Treatment/Vacuum Sewer Plant	<ol style="list-style-type: none">1. Maximize use of recovered heat2. Upgrade all heat-add system components3. Replace interior lighting4. Eliminate heat trace on water loops
Vacuum Sewer Collection System	<ol style="list-style-type: none">1. Leak detection testing and repairs for the glycol heat trace and vacuum sewer collection lines2. Re-commission vacuum pumps



Maximize Heat Recovery

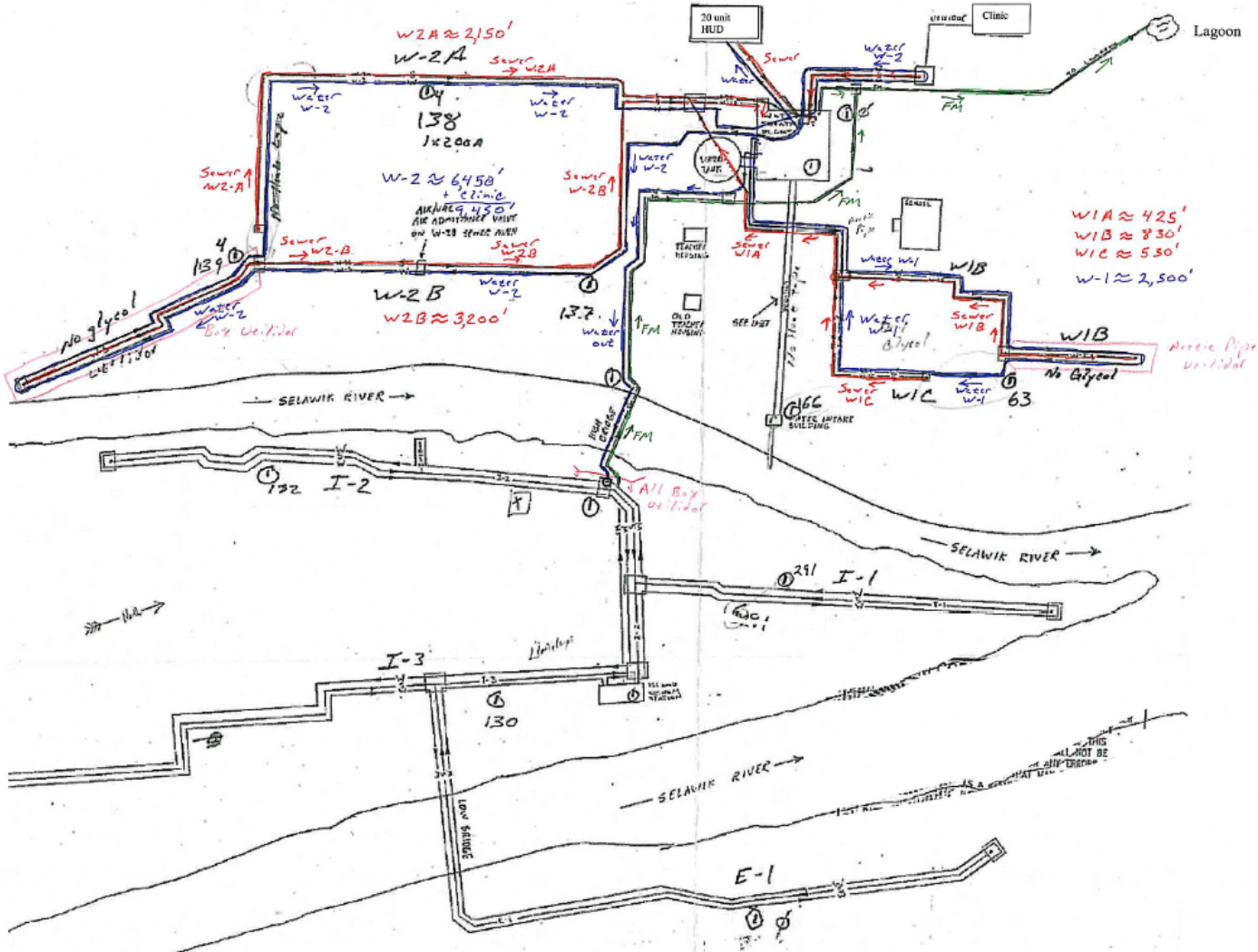




Upgrade Heat-Add System Components

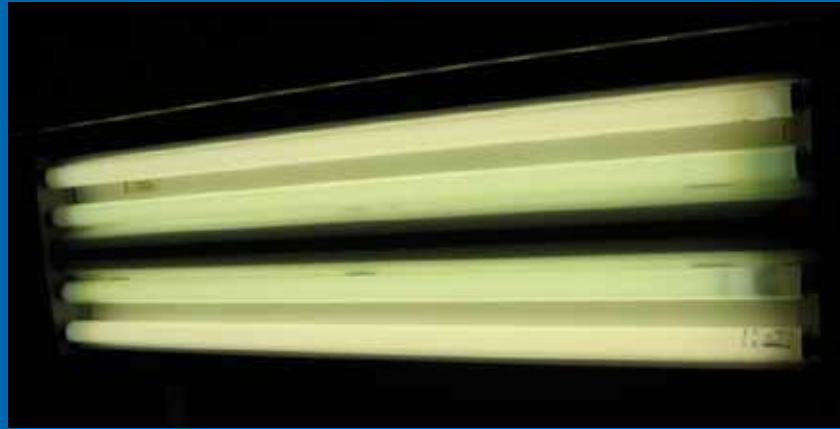


Electric Heat Tape on Water Loops





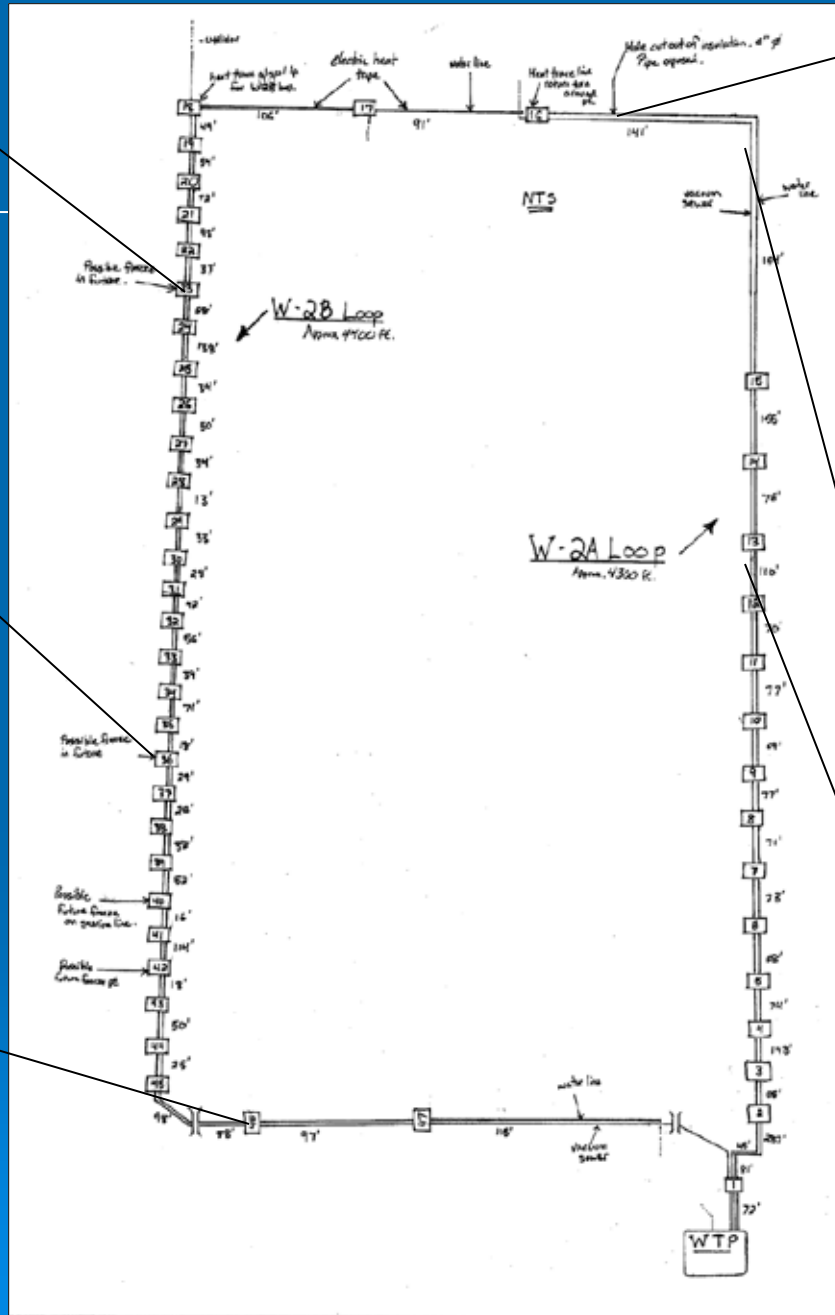
Replace Interior Lighting





Vacuum Sewer Lines







Re-commission Vacuum Pumps





Progress to Date

- Ø Gathered additional information on site
- Ø Surveyed utilidors
- Ø Finalized Project Work Plan





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