



UTILITIES IMPROVEMENTS FEASIBILITY STUDY

CLIENT

Village Safe Water

CONTRACT

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YEAR COMPLETED

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Thorne Bay, Alaska

USKH prepared a comprehensive study to identify, evaluate and recommend feasible improvements to upgrade the water, sewer, and solid waste facilities for this Southeast community of approximately 450 people.

The City of Thorne Bay provides a number of utilities to its residents and has an increasing number of regulatory problems with these utilities. The water system uses a surface water source with very soft water, very low alkalinity, and moderately high levels of organic carbon, resulting in biofilm growth, unacceptable disinfection byproduct levels exceeding regulatory limits, low chlorine residuals, and corrosive water. The wastewater system has a different set of issues, as the collection system is literally taking on water, diluting the wastewater, and making treatment compliance a problem. The landfill is operating well; however, it faces re-permitting, cell closure, space, funding, and possible relocation issues. Thorne Bay and VSW asked USKH to address all these issues with the development of a comprehensive Utilities Improvement Feasibility Study.

The project includes alternatives for additional treatment at the water plant, a new water storage tank, repair of inflow and infiltration in the collection system, and improvements to public works to reduce maintenance and operations costs. In order to accomplish the necessary analysis to determine needed improvements and provide justification for funding, USKH developed a WaterCAD model to analyze water system aging; an environmental report to support funding by US Department of Agriculture –Rural Development; and a landfill analysis to determine remaining cell life. Onsite investigations included distribution system water quality sampling, hydrant flow testing, and lift station assessments. Samples of a variety of coagulants were tested on site to evaluate the effectiveness of the existing system and provide alternatives improvements.

1. System and source water analysis
2. Jar testing for optimization of water treatment
3. Landfill analysis, permitting, design, and planning
4. Water system modeling, calibration, and flow testing

