City and Borough of Wrangell
Water Treatment Plant Upgrades Project
USDA Environmental Report

Prepared for:
City and Borough of Wrangell

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1.0 Purpose and Need

1.1 Project Description

USDA, Rural Development is a mission area that includes three federal agencies – Rural Business-Cooperative Service, Rural Housing Service, and Rural Utilities Service. The agencies have in excess of 50 programs that provide financial assistance and a variety of technical and educational assistance to eligible rural and tribal populations, eligible communities, individuals, cooperatives, and other entities with a goal of improving the quality of life, sustainability, infrastructure, economic opportunity, development, and security in rural America. Financial assistance can include direct loans, guaranteed loans, and grants in order to accomplish program objectives.

The City and Borough of Wrangell (CBW) is seeking U.S. Department of Agriculture (USDA) Rural Development Program funding to upgrade Wrangell's water treatment plant (WTP) in order to increase capacity and improve treatment for a design life of 20 years. Wrangell is located on Wrangell Island, approximately 200 miles south of Juneau and 100 miles northwest of Ketchikan. The WTP is located about 1 mile south of downtown Wrangell (Copper River Meridian; Township 62; Range 84; Section 31; Exhibit A Figure 1).

Currently, raw (untreated) water from two mountain lake reservoirs is routed to the existing WTP via an intake at the lower reservoir and 1,500 linear feet of 12-inch diameter pipeline (Exhibit A Figure 2). The existing WTP, comprised of the roughing filters building, control building, and slow sand filter building, treats raw water through the following process:

1) pH is adjusted through the injection of sodium hydroxide.
2) Ozone is injected to initiate oxidation.
3) Suspended solids are reduced by passing the water through roughing filters.
4) Particulates are removed and dissolved solids are biologically treated by conveying the water through slow sand filters.
5) Chlorine is added to disinfect the water and provide residual disinfection so that the water stays potable throughout the distribution system.
6) Water is collected in a central clearwell, which acts as a temporary storage tank.
7) After being treated, clean drinking water is pumped from the WTP to two water storage tanks with a capacity of 850,000-gallons via a 12-inch diameter pipeline.
8) Water is provided to the public through the existing distribution system.
9) A separate pipeline connects water from the storage tanks directly to clean out the roughing filter. The "backwash" water flows downward through the roughing filters and to a drainage sump that discharges to an outside ditch.

The CBW is proposing to upgrade the WTP by replacing the existing slow-sand filtration system with a dissolved air flotation (DAF) and multimedia filtration system (Exhibit A Figure 3). The new DAF system would include the following processes:

1) pH would be adjusted using soda ash.
1) A pre-filtering process would occur using DAF—a process that uses minute air bubbles to suspend and facilitate the removal of low-density solids.
2) Contaminants would be removed using multimedia filtration.
3) Chlorine would be added to disinfect the water and provide residual disinfection so that the water stays potable throughout the distribution system.
4) Water would be stored in new clearwells.
5) Filter backwash waste water from cleaning out the multimedia filtration filters would be treated through a clarifying tank and secondary dewatering and recycled through the WTP.
6) Sludge from the backwash would be hauled to the barge dock and transported via barge to a landfill in Washington for final disposal.

The upgrades would require the following changes to the existing WTP facility.

Roughing Filter Building Expansion/Conversion to Treatment Building

The roughing filter building would be expanded to approximately 44 feet by 104 feet and converted to house two parallel DAF plants which would integrate both DAF and multimedia filtration. Chemical feed tanks and associated pumps and control systems would also be located in the treatment building.

The building would be within the existing site, and no additional land acquisition will be required. Approximately 1,600 square feet (40 feet by 40 feet) will need to be cleared and drilling and blasting of approximately 1,400 cubic yards of bedrock south of the site would likely be required to accommodate the expansion.

Slow Sand Filter Building Conversion

The existing slow sand filters would be converted into clearwells to provide CBW with additional water storage. All building materials removed during the building renovation would be disposed of properly. No ground disturbing activities outside the existing building pad would occur.

Other Upgrades Installation

A standby electric generator and an aboveground bulk fuel tank would be installed. The bulk fuel tank would provide for any building or process heating needs (as well as powering the emergency generator). The generator would provide emergency power during a power outage.

Backwash Waste Disposal System Installation
An insulated above-ground 30,000 bolted steel clarifier tank (20-foot diameter) would be installed adjacent to treatment building. Backwash waste water from the WTP would be piped to the tank where polymer would be injected into the backwash waste water to improve settling of solids. Supernatant from the clarifier would be routed to the water treatment process upstream of the filters and raw water chemical injection. The backwash water would be recycled at the WTP by blending with influent raw water before undergoing treatment. The sludge would be transferred to bins or shipping containers and transported to a landfill in Washington for final disposal.

1.2 Purpose and Need of the Proposal

The purpose of this project is to upgrade the existing WTP in order to provide an adequate amount of treated water to the community of Wrangell's residents, medical facilities, and seafood processing plants and the ability to respond to local fires for next 20 years.

The WTP upgrades are needed because the current water treatment process does not provide sufficient treatment capacity to meet distribution system demands. In July 2016, the CBW passed a Disaster Declaration with a Request for State Assistance because of inadequacy of the filtration system to provide sufficient flow to meet the community water consumption. At that time, the CBW asked the public to ration their water use by 30 to 50 percent. With this project, the CBW will be able to provide clean, treated water to a growing population and industry demand for a 20-year design life.

2.0 Alternatives Evaluated Including Proposed Action

2.1 Proposed Action

Under the Proposed Action (Alternative 4—DAF with Multimedia Filtration and Backwash Waste Disposal Alternative D), the existing roughing filter building would be expanded to house two parallel DAF plants installed downstream of the pH adjustment system (Exhibit A Figure 3). The two package plants would integrate DAF and multimedia filtration. Alum would be used as the coagulant and rapid-mixed with the raw water. Under this alternative, a lower dosage of alum would be used due to the efficiencies of DAF. This alternative would include reusing the existing disinfection system and converting the existing slow sand filters to a serpentine clearwell for storing treated water. A backwash clarifying tank and sludge storage area and secondary dewatering system would be installed onsite to treat backwash wastewater.

This water treatment alternative is the Proposed Action because it has the lowest life cycle cost and the highest treatment efficiency. This alternative provides good organics removal and excellent color removal. In addition, it is a robust process that can accommodate significant variability in raw water quality without substantial adjustments in the treatment process.

The Proposed Action includes recycling backwash water through the water treatment system. The water removed during dewatering would also be piped back to the WTP. The dewatered backwash sludge would be transported to landfill in Washington for disposal. This backwash waste disposal alternative was selected as the Proposed Action because it had the lowest life cycle cost compared to other alternatives. This alternative was also selected because it uses the existing WWTP to treat the backwash wastewater, making it more sustainable than other alternatives.

2.2 Other Alternatives

A number of initial water treatment alternatives and backwash waste disposal alternatives were considered for this project but were eliminated from further detailed review, as explained below.

2.2.1 Alternative 1 – Improvements Made to the Existing Water Treatment Process

Under this alternative, the existing slow sand filter treatment process would be upgraded; therefore, improvements would be made to all of the existing components: pH adjustment, ozonation, roughing filtration, and slow sand filtration (Exhibit A Figure 4). The disinfection process, which works well currently, would not be upgraded. A backwash clarifying tank (20-foot diameter) and sludge storage area and secondary dewatering system would be installed for backwash water disposal.

This alternative was dismissed from further consideration because it had high capital costs, would have continued issues with a lack of water storage during the summer, and because it had the potential for continued difficulties with post-treatment high chlorine demands and disinfection by-products, since slow sand filtration has limited organic removal capabilities.

2.2.2 Alternative 2 – MIEX Process with Multimedia Filtration

This alternative would have a MIEX (a proprietary ion exchange process) system installed downstream of the pH adjustment system, using soda ash to increase the raw water's alkalinity (instead of caustic soda). The ozonation system would not be used under this alternative. Alum, rapid-mixed with the raw water, would be used as the coagulant. The use of MIEX would allow a lower dosage of alum to be optimized more for turbidity removal and less for organics removal. Under this alternative, the roughing filter building would be demolished, and a new treatment building would be constructed to house a conventional filtration system comprised of three parallel flocculation/sedimentation/filtration trains with a redundant fourth filter for backwashing purposes (Exhibit A Figure 5). The existing disinfection system would be reused, and the existing slow sand filters would be converted to a serpentine clearwell for storing disinfected water after filtration. A backwash clarifying tank and sludge storage area and secondary dewatering system would be installed for backwash water disposal.

This alternative was dismissed from further consideration because it had the higher annual operation and maintenance (O&M) cost than other alternatives due to chemical and MIEX resin replacement needs. In addition, without substantial amounts of coagulant, Alternative 2 would not remove color as well as other alternatives.

2.2.3 Alternative 3 – Ozonation with MIEX and Biological Filtration

This alternative, a variation of Alternate 2, assumes that a MIEX would be installed between the pH adjustment and the ozone systems. Alum is would be used as the coagulant and rapid-mixed with the raw water. The use of MIEX and ozonation would allow a lower dosage of alum to be optimized more for turbidity removal and less for organics removal. Under this alternative, the roughing filter building would be demolished, and a new treatment building would be constructed to house biological filters in a similar configuration as for Alternative 2 (Exhibit A Figure 6). The existing disinfection system would be reused, and the existing slow sand filters would be converted to a serpentine clearwell for storing disinfected water after filtration. A backwash clarifying tank and sludge storage area and secondary dewatering system would be installed for backwash water disposal.

Alternative 3 was dismissed from further consideration because its annual O&M costs would be very high due to considerable power needs for ozone and high costs of chemical and MIEX resin replacements. This alternative would be more complex than other conventional filtration processes, which would require a higher WTP operator certification (Level IV). In addition, the MIEX process would not accommodate major variabilities in raw water characteristics and could lead to variable finished water quality.

2.2.4 Alternative 5 – Nanofiltration and Multimedia Filtration

Under this alternative, a new treatment building would house a nanofiltration system installed downstream of multimedia filtration. A pH adjustment system using soda ash and potassium permanganate oxidations step would precede the filtration process. The soda ash would provide sufficient alkalinity for the coagulation process, which would employ alum. The existing

disinfection system would be reused, and the existing slow sand filters would be converted to a serpentine clearwell for storing disinfected water after filtration (Exhibit A Figure 7). A second pH adjustment step featuring soda ash would be downstream of the clearwell for increasing alkalinity in the water of the distribution system. A backwash clarifying tank and sludge storage area and secondary dewatering system would be installed for backwash water disposal.

This alternative was dismissed from further consideration because it had the highest annual O&M costs and lowest sustainability of any alternative due to chemicals and filter membrane replacement needs. In addition, it was the most complex of the alternatives and required higher WTP operator certification (Level IV)

2.2.5 Backwash Waste Disposal Alternative A1 – Extend Sewer Service from WWTP (Buried Pipeline)

This alternative would include construction of a gravity sewer pipeline to transport backwash water from secondary dewatering area to the wastewater treatment plant (WWTP). The new 1,300 linear feet 20-inch outside diameter (approximately) insulated pipeline would be constructed below ground (Exhibit A Figure 8). Construction of the sewer line would require clearing a 30 feet wide corridor or 39,000 square feet (0.93 acres) through forested areas. In addition, some blasting at the road crossing could be required in order to place the pipeline. The gravity sewer main would connect to the WWTP where clarified backwash wastewater would be treated.

After much analysis, this alternative was dismissed from further consideration because it had a higher capital cost (about $800,000 higher than the proposed action) and annual O&M costs (about $800 higher than proposed action) and would require forest clearing and blasting along the pipeline route and construction could be difficult due to the steep terrain between the WTP and the WWTP.

2.2.6 Backwash Waste Disposal Alternative A2 – Extend Sewer Service from WWTP (Above Ground Pipeline)

Under this alternative, an aboveground gravity sewer pipeline would be installed to transport backwash water from the new treatment building to the WWTP where clarified backwash wastewater would be treated (Exhibit A Figure 8). The pipeline would be supported by timber sleepers and secured with duckbill or drilled epoxy anchors (depending on depth of bedrock). The pipeline would be insulated and have electric heat trace to provide freeze protection.

This alternative was dismissed from further consideration because it had a higher capital cost (about $700,000 higher than the proposed action); had higher annual O&M costs (about $3,100 higher than proposed action); would require heat trace and insulation to maintain the pipeline during the winter; would require forest clearing along the pipeline route; and because construction could be difficult due to the steep terrain between the WTP and the WWTP.

2.2.7 Backwash Waste Disposal Alternative B – Wood Street Sewer Extension

Under this alternative, sewer service would be extended from the Zimovia Highway, along Wood Street to the water treatment plant. This alternative would require construction of an above ground clarifier tank and approximately 3,100 linear feet of gravity sewer main. The pipeline alignment would be routed inside the existing road corridor (Exhibit A Figure 8).

This alternative was dismissed from further consideration because it had higher capital costs (about $1.5 million higher than the proposed action) and annual O&M costs (about $1,900 higher than proposed action).

2.2.8 Backwash Waste Disposal Alternative C – Marine Outfall

Under this alternative, backwash waste from the WTP would be piped to an above-ground clarifier tank. The clarifier would allow solids to settle between backwash cycles. Supernatant from the clarifier would then be routed through a 2,000 linear foot gravity sewer main for discharge at a marine outfall (Exhibit A Figure 9).

This alternative was dismissed from further consideration because it had much higher capital costs (about $1 million higher) and annual O&M costs (about $1,000 higher) than the proposed action.

2.3 No Action Alternative

As required by guidance, the No Action Alternative was considered for this project. Under this alternative CBW would make no improvements to the WTP, and the facility would continue to operate in its current condition. There would not be sufficient water treatment capacity to meet existing distribution system demands, and the No Action Alternative would likely result in future Disaster Declarations and public water rationing due to the inadequacy of the filtration system to provide sufficient flow to meet community water consumption. Future population growth and increased commercial water usage would not be accommodated.

The No Action Alternative was dismissed from further consideration because it would result in health and safety issues and would limit economic development and because it does not meet Wrangell's need for long term, reliable, safe water treatment facilities.

3.0 Affected Environment/Environmental Consequences

A summary of affected environments, environmental consequences, and any necessary mitigation activities are provided below.

3.1 Land Use

3.1.1 Affected Environment

General Land Use

The proposed project falls within CBW boundaries. The CBW is located on the northwest tip of Wrangell Island, 155 miles south of Juneau and 89 miles northwest of Ketchikan. It is near the mouth of the Stikine River, a historic trade route to the Canadian Interior (ADCCED 2016a). The existing WTP is located approximately one mile south of downtown Wrangell.

The project would involve approximately 1 acre of impacts to previously disturbed land adjacent to the WTP, undisturbed forested land, and previously disturbed land adjacent to an existing rock quarry and the WWTP. The land is flat near the WTP and sloped between the WTP and the WWTP. According to the CBW Comprehensive Plan, the project would be located on land owned by the CBW and zoned light industrial/industrial. Most of the land adjacent to the proposed project area is owned by the CBW and is zoned light industrial/industrial. A portion of the project area is bounded by quarry, which is zoned industrial. The northern area of the quarry is privately owned, and the southern area is owned by the CBW (CBW 2010).

Important Farmland

There are no prime farmlands in Alaska since soil temperatures do not meet the threshold established by Congress, and no unique farmlands have been designated in Alaska (NRCS 2014).

Formally Classified Lands

The project would not be located within formally-classified lands, including refuges, parks, or lands administered by the U.S. Government. The Tongass National Forest, managed by the U.S. Forest Service (USFS), is located about 0.5 miles from the proposed project and includes most of Wrangell Island (USFS 2016).

3.1.2 Environmental Consequences and Mitigation

General Land Use

There are no anticipated adverse impacts from this project on general land use or zoning. The WTP expansion and backwash water recycling are compatible land uses since they would be directly adjacent to the existing WTP and within industrial-zoned lands.

Important Farmland

No unique farmlands have been designated in Alaska.

Formally Classified Lands
There are no anticipated impacts to formally-classified lands, since the project will take place on CBW-owned land.

3.2 Floodplains

3.2.1 Affected Environment
The project would not be located in a 100- or 500-year floodplain because the proposed project areas are outside of the Flood Insurance Rate Map (FIRM) established by the Federal Emergency Management Agency (FEMA 1982). The WTP is above 200 feet above sea level, and the WWTP is about 90 feet above sea level and under no risk of marine flooding.

3.2.2 Environmental Consequences and Mitigation
There would be no negative impacts to floodplains as a result of this project. The project area is located outside of the FIRM, and the project area is not within a coastal flooding or erosion area.

3.3 Wetlands

3.3.1 Affected Environment
The U.S. Army Corps of Engineers (USACE) found that the project area does not contain waters of the United States, including wetlands, under their jurisdiction. The USACE's finding letter is included in Exhibit B.

3.3.2 Environmental Consequences and Mitigation
Since there are no wetlands on the site, no wetlands impacts would be expected by the proposed project.

3.4 Water Resources

3.4.1 Affected Environment
CBW's drinking water comes from a surface water source is comprised of two mountain lakes—an upper and a lower reservoir. These lakes are located east of and above the WTP, the lower reservoir is about a quarter mile away, via gravel road. The upper reservoir is located about a half mile from the lower reservoir, and is fed by a forested watershed formed by an elevated valley between two mountain peaks. The upper reservoir is dammed and, through a submerged intake, flows into a small creek that feeds the lower reservoir (CRW 2016).

No other freshwater bodies are near with the project area. There are no wild or scenic rivers near the project area. The Stikine River was recommended for designation as wild and scenic but was not designated later (USFS 2007).

Wrangell has a public wastewater treatment system that includes a Class 1 aerated lagoon treatment system and a class 2 collection system. After treatment, wastewater is discharged to Zimovia Strait. Wastewater discharge from the WWTP is permitted under Alaska Department of Environmental Conservation (ADEC) General Permit No. 2003-DB0096.

There are no impaired waterbodies near the community Wrangell (ADEC 2010).

3.4.2 Environmental Consequences and Mitigation

Over the 20-year design life of the proposed project, the raw water taken from the reservoirs would increase from about 850,000 gallons per day to about 1 million gallons per day. Most of the demand would be during a short time in the summer when seafood processing plants are operating and cruise ships are docked in the community. According to CBW staff, the reservoirs have continuously supplied water to the community with no drought-related interruptions. Therefore, the reservoirs are anticipated to continue to provide sufficient water for the anticipated increase in water use for the 20-year design life of the WTP upgrades.

Since the backwash water would be recycled through the WTP and the sludge would be disposed of at the permitted landfill no impacts to marine or freshwater are expected. There are no anticipated water degradation issues from temporary construction activities. Activities will be conducted away and downhill from freshwater bodies, and no waterbody would be crossed.

A SWPPP would be developed for the project area to manage the materials, equipment, and runoff, including construction impacts, because the project would disturb more than one acre. The CBW and/or contractor will implement BMPs for erosion and sediment control and will maintain a spill clean-up kit on site at all times.

3.5 Coastal Resources

3.5.1 Affected Environment

The project is not within the boundaries of a coastal zone management area because the Alaska Coastal Management Program sunset on July 1, 2011 per Alaska Statute 44.66.030.

3.5.2 Environmental Consequences and Mitigation

No adverse environmental consequences have been projected. This project will not be located within coastal zone management land, and no mitigation efforts would be necessary.

3.6 Biological Resources

3.6.1 Affected Environment

General Fish, Wildlife, and Vegetation Resources

No anadromous fish streams intersect with the project area. The nearest anadromous fish streams are Playground Creek (AWC Code: 108-40-10282) and an unnamed creek (AWC Code: 108-40-10278) located 0.3 miles southwest and 1.9 miles north west of the project, respectively (ADFG 2015).

The community of Wrangell is surrounded by the Tongass National Forest, a coastal temperate rain forest comprised of thick stands of Sitka spruce, yellow-cedar, red cedar, and western and mountain hemlock. The project area includes dense forest with Sitka spruce and mountain hemlock. There is considerable deadfall in the area which supports various mosses and lichen species. Deciduous trees and shrubs, including alders and devil's club, are found in areas where light penetrates the forest cover. Some of the project area is previously cleared and is unvegetated.

Common wildlife in the area includes Sitka black-tailed deer, black bear, coastal brown (grizzly) bear, moose, fox, and porcupine are common throughout the forest (ADF&G 2016; USFS 2016). Marine mammals, including sea otters, seals, sea lions, porpoises and whales, are abundant in adjacent Zimovia Strait (USFS 2016).

ESA-Listed Threatened and Endangered Species

According to the USFWS Information for Planning and Conservation (IPaC) website, the proposed project would not impact any endangered species, and there is no designated critical habitat of any Endangered Species Act (ESA)-listed species under the jurisdiction of the USFWS within the project area (USFWS 2016; Exhibit C). According to the National Marine Fisheries Service's Marine Mammal Species Range and Critical Habitat Mapper, endangered Steller sea lion (western distinct population segment [DPS]) and the endangered humpback whale (Western North Pacific DPS) are found in the ocean near the project area (NMFS 2016).

Migratory Bird Treaty Act

A report generated through the USFWS' IPaC website indicated that nine migratory birds could be located within the project area (USFWS 2016). The species, which are birds of conservation concern with the highest priority for conservation, include Black Oystercatcher, Fox Sparrow, Lesser Yellowlegs, Marbled Murrelet, Pelagic Cormorant, Pink-footed Shearwater, Rufous Hummingbird, and Short-eared Owl.

Invasive Species

A total of 58 non-native species were documented in 2006, and 46 non-native species were documented in 2010 on Wrangell Island. Of these, five are classified as high priority invasive

plant species by the Tongass National Forest: reed canarygrass, orange hawkweed, oxeye daisy, meadow hawkweed, and common hawkweed. Several high priority invasive plants are within the city limits of Wrangell but not found in the rest on the National Forest, including the common tansy, tansy ragwort, Japanese knotweed, bull thistle, Canada thistle, and yellow sweetclover (de Montigny 2016).

3.6.2 Environmental Consequences and Mitigation

General Fish, Wildlife, and Vegetation Resources

Fish and anadromous fish streams would be avoided and not be impacted by the project. Further, minimal impacts to wildlife would be expected because wildlife habitat is not limited on Wrangell Island and animals would be expected to move away from the construction area.

Although improvements and expansion of the WTP would occur on previously disturbed land and on an existing pad, about 600 square feet would be cleared and about 400 cubic yards of material would be blasted for the expanded building, backwash clarifier tank, and shipping container area.

Threatened and Endangered Species

Marine areas will be avoided; the WTP improvements would be located approximately 0.3 miles from the coastline. Because all ESA-listed species inhabit the marine environment, and the project will not be located in a marine area, no ESA-listed species nor habitat would be impacted.

Migratory Bird Treaty Act

Where migratory bird habitat is impacted, birds would likely find other areas to nest, since undisturbed open space is not limited. To avoid impacts to migratory birds and comply with the Migratory Bird Treaty Act, no vegetation clearing would occur between April 15-July 15, as recommended by USFWS for forests and woodlands in Southeast Alaska (USFWS 2007).

Invasive Species

According to the USFS (de Montigny 2016), invasive species could be transported onto National Forest System by humans or vehicles travelling from the community of Wrangell to forest lands and could have direct or indirect impacts on native habitats.

To minimize the risk of introducing or spreading invasive species, the project will comply with all federal, state, and local laws, including Executive Order 13112, by ensuring that ground disturbing activities are minimized, and disturbed areas are re-vegetated with native species in accordance with the Alaska Department of Natural Resources re-vegetation manual.

3.7 Historic and Cultural Properties

3.7.1 Affected Environment

Wrangell is one of the oldest non-Native settlements in Alaska. In 1811, the Russians began fur trading with area Tlingits and built a stockade named Redoubt St. Dionysius in 1834. In the late 1800's the community served as an outpost for gold prospectors. The city was incorporated in 1903. In the early 1900's fishing and forest products were the primary industries. Recently, tourism and growth in the seafood processing and marine services industries have become important economic activities (ADCCED 2016a).

A cultural resources literature review was completed on October 17, 2016 by Cultural Resource Consultants, LLC (CRC 2016; Exhibit D). According to CRC's literature review preliminary findings, there are no known sites within the project limits listed in the Alaska Heritage Resource Survey (AHRS). West of the general project area, the closest known sites are a reported petroglyph (PET-00033), the Redmen's Cemetery and Native Cemetery (PET-00099), Eli Urho Kanerva Boat Shed and Warehouse (PET-00330), and Fremin Midden (PET-00483). To the east are two Wrangell water supply dams—PET-00571 and PET-00572.

Among other criteria, Appendix D of the 2010 programmatic agreement[1] between the USDA USFS, Advisory Council on Historic Preservation, and Alaska State Historic Preservation Officer defines areas of high archaeological sensitivity as "all land between mean lower low water and 100 ft. of elevation above mean high water, with no consideration of slope;" "lake and stream systems containing, or known to have contained, anadromous fish runs; including a focus on barrier falls locations in such systems;" and "elevated/fossil marine, river, and lake terrace systems." The project area is generally above the 100-ft contour, is not near the mouth of any creeks, and the topography of the area is too steep to be considered a marine terrace.

According to CRC, the location does not appear to have been archaeologically surveyed; however, because the proposed project is in an area where there is low probability for undiscovered historic and archaeological sites, CRC did not recommend an archaeological field survey (CRC 2016).

3.7.2 Environmental Consequences and Mitigation

No historic properties would be disturbed by the proposed Water Treatment Upgrades Project because there are no reported historic or cultural sites within the APE, and the probability that there are historic properties within the APE is low. On December 15, 2016, the State Historic Preservation Officer (SHPO) concurred with the finding that no historic properties would be affected by the project (Exhibit D). If historic resources are discovered during construction, all work will halt, and the SHPO will be contacted immediately.

[1] *Third Amended Programmatic Agreement Among the USDA Forest Service, Alaska Region, the Advisory Council on Historic Preservation, and the Alaska State Historic Preservation Officer Regarding Heritage Resource Management on National Forests in the State of Alaska.*

3.8 Aesthetics

3.8.1 Affected Environment
The nearest development (residential) and a visually-sensitive area (city park) are located approximately 0.15 and 0.21 mile from the proposed project area, respectively.

3.8.2 Environmental Consequences and Mitigation
Topography of the area would provide a natural barrier to block the WTP expansion from view of the residential development and the city park.

3.9. Air Quality

3.9.1 Affected Environment
This project is neither located in nor adjacent to a nonattainment or maintenance area (USEPA 2016). The community of Wrangell is also not within the Dust Complaint in Rural Alaska area (ADEC 2016b).

3.9.2 Environmental Consequences and Mitigation
The WTP improvements would not likely to result in any permanent air quality impacts, as it will not result in additional air emissions. Some air emissions would be the result of construction equipment; however, these would be minor and temporary in nature. Further, most disturbed areas will be permanently stabilized after project completion to keep dust from becoming an air quality issue.

3.10 Socio-Economic Impact Assessment/Environmental Justice

3.10.1 Affected Environment

Environmental Justice
The project is in compliance with Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations, issued in 1994. The ethnicity and poverty status in the Wrangell was compared to data for the State of Alaska Census Area population to determine if minority or low-income communities exist in the area that could be disproportionately affected by the proposed actions.

The demographics of the Wrangell are generally reflective of the wealth distribution and ethnic diversity of the State of Alaska. Approximately 40.5% of the total population of the State of Alaska is a minority (non-white). Most community members identify as Biracial, Alaska Native, and White. The Wrangell community has a racial makeup similar to its census area, with minorities making up 31.6% of the total population. Wrangell has a slightly higher percentage of low-income residents than the State of Alaska census area. Approximately 10.3% of the State of Alaska Census Area population lives below the poverty level while 11.9% of the Wrangell population lives below the poverty level (U.S. Census Bureau 2013).

Socio-Economic Issues
Wrangell's economy depends heavily upon tourism and marine industries (CBW 2015). Wrangell receives about 50 (mainly small) cruise ships each summer, and the visitor-related industry supports about 75 monthly jobs. Many residents have commercial fishing permits, and the millions of pounds coming into port each year support seafood processing jobs, which make up the majority of manufacturing employment in Wrangell. About 38% of the workforce is employed by the local, state, or federal government (Bell 2014).

Some residents use a subsistence lifestyle to supplement cash incomes. In 2000, the average Wrangell household harvested 43,060 pounds of usable wild foods consisting of 15% salmon, 20% other fish, 23% land mammals, 36% marine invertebrates, 9% birds and eggs, and 5% wild plants (ADFG 2000).

3.10.2 Environmental Consequences and Mitigation

Environmental Justice
Environmental justice populations would not be adversely impacted by the project; rather, the proposed improvements to the WTP would benefit all residents by providing adequate and sustainable drinking water for future populations.

Socio-Economic Issues
No land or marine areas that provides economic opportunities for the community would be negatively impacted by this project. The seafood industry especially would benefit from the WTP improvements, since more water would be available for fish and seafood processing.

3.11 Miscellaneous Issues

3.11.1 Affected Environment

Noise
The noise generated by this project would be minimal during the brief construction phase and negligible post-construction. Further, this project would not take place near any noise-sensitive facilities (Google Earth 2013). The project would take place about 1 mile from the nearest school (1.11 miles to Evergreen Elementary and 1.01 miles to Stikine Middle School and Wrangell High School), 0.78 miles southeast of the nearest church (Bible Baptist Church), and 0.48 miles southeast of the nearest medical clinic (AICS Medical Clinic).

Transportation
Wrangell is accessible by air and water. There is a state-owned paved, lighted runway on the north side of the community. A seaplane base is adjacent to the runway, with another airplane float located in the Inner Harbor. Charter air taxi services are also available. The marine facilities include three harbors with 710 slips for recreational and commercial vessels; a deep draft dock which just completed upgrades and renovations; a state ferry terminal; and three

boat launches. Freight arrives by barge, ship, ferry, and cargo plane. Front Street was reconstructed as part of a larger downtown revitalization in 2014 (ADCCED 2016a).

A coastal community, Wrangell is located on Zimovia Strait which is a part of the Inside Passage. The Inside Passage is a coastal route for cruise ships, freighters, fishing vessels, and ferries along a network of ocean passages along the Pacific coast from southeastern Alaska to north-western Washington.

The WTP is located about 0.5 miles up Wood Road (WTP Access Road) east of the Zimovia Highway. The WWTP is located on the Zimovia Highway.

3.11.2 Environmental Consequences and Mitigation

Noise
Following construction, the project would have minimal noise generation. In addition, the project will be located away sensitive noise receptors, including schools, churches, and health care facilities.

Transportation
There would be no expected impacts to transportation. The improvements to the WTP would occur at the facility and would not block or impact the road to the facility. Although sludge could be transported to the barge dock every week, it isn't expected to impact local traffic.

3.12 Human Health and Safety

3.12.1 Affected Environment

Electromagnetic Fields and Interference
The closest electromagnetic fields from broadcasting, cellular and other communication transmitters and radar systems (or other sources) is from the closest Federal Communications Commission-registered cell phone tower is located about 350 feet uphill (east) of the WTP. Another FCC cell phone tower is located about 2,000 downhill (southwest) of the WTP.

Environmental Risk Management
There are two active contaminated sites located near the project area identified by the ADEC Contaminated Sites Program (ADEC 2016a). The Wrangell City Shop site (file number: 1529.26.009), about 0.25 miles from the WTP, has contaminated soils from a leaky 500-gallon used oil underground storage tank. The Wrangell Power Plant site (file number 1529.38.021), approximately 0.35 miles from the WTP, has contaminated soils from a 300,000-gallon aboveground fuel storage tank. In 2016, contaminated soils from both sites were taken to the landfill for remediation.

3.12.2 Environmental Consequences and Mitigation

Electromagnetic Fields and Interference

Electromagnetic interference from narrowband transmissions, such as radio or cell phones, or broadband transmissions, such as electric power transmission lines, would not occur as a result of this project. The WTP upgrades would not produce electromagnetic fields or impact existing cell phone transmissions because the improvements would be near the ground.

Environmental Risk Management

Although there are two nearby contaminated sites, they are not expected to be impacted or impact because of their distances away from the proposed project.

3.13 Corridor Analysis

This project is not a linear infrastructure project where a routing analysis is needed.

4.0 Cumulative Effects

Cumulative effects focus on past, present, and reasonably foreseeable future actions regardless of which entity – private or governmental – is affecting those resources. For this project the geographic scope includes the community of Wrangell. The timeframe for the cumulative effects analysis includes 10 years into the past and 20 years into the future.

4.1 Affected Environment

Recent past actions in Wrangell over the past 10 years have included (CBW 2015 and ADCCED 2016b):

- Development of a new harbor
- Construction of a new harbor house
- Upgrades and expansion to the water and wastewater systems
- Upgrades to city streets and sidewalks
- Upgrades to the power house and power system
- Upgrades to the health clinic
- Improvements to the City dock
- Upgrades to the boat haulout pier
- Upgrades to Industrial Park subdivision
- Upgrades to public buildings
- Upgrades to the Eastern Channel Paddle Craft Trail
- Upgrades to the Marine Service Center
- Construction of a commercial passenger vessel facility
- Construction of a hospital and nursing home

Currently, the City is replacing sewer pumps, paving the barge ramp, and making improvements to Wood Street (CBW 2015).

4.2 Environmental Consequences

Cumulative impacts to be considered are based on the following criteria: 1) effects occur but are not localized to the same general area; 2) effects to a resource are similar in nature; and 3) effects are long-term rather than short-term in nature. Cumulative effects can result from several individually minor impacts, which may be collectively substantial over time. Other developments in Wrangell have been proposed could contribute to cumulative effects on resources; however, the cumulative impacts would not be substantial.

In general, the proposed water treatment plant expansion would be a part of a pattern of growth and development in a community that was founded around 1811. The sections below consider the cumulative effects of the project when combined with past, present, and reasonably foreseeable future projects.

4.1.1 Land Use and Zoning

Land use is not expected to change with cumulative development. The CBW maintains zoning restrictions and requires land use permits which maintain established and desired land uses and zoning.

4.2.2 Floodplains
This project would not impact floodplains, and therefore would not contribute to the cumulative loss of floodplains.

4.2.3 Wetlands
This project would not impact wetlands, and therefore would not contribute cumulatively to loss of wetlands in Wrangell.

4.2.4 Water Resources
Previous, current, and future projects together with the proposed project are not expected to cumulatively impact Wrangell's drinking water source because they will not lead to substantial additional water use, and it is expected the reservoirs will continue to supply water demand as the population grows and the economy expands.

4.2.5 Coastal Resources
This project would not impact coastal resources, and therefore would not contribute to the cumulative loss of floodplains.

4.2.6 Biological Resources
This project would not contribute to the cumulatively loss of wildlife habitat. Most future projects would occur on land within the City boundaries; therefore, ESA-listed species would be minimally impacted. Less migratory bird habitat would be available as development increases in the area; however, because Wrangell is surrounded by the Tongass National Forest, the area for birds to inhabit is not limited. Cumulatively, projects could lead to the spread of invasive plant species; however, mitigation measures should help to minimize their distribution. For these reasons, cumulative effects on biological resources would be negligible.

4.2.7 Historical and Cultural Properties
This project would not impact historical or cultural resources, and therefore would not contribute to the cumulative loss of those properties.

4.2.8 Aesthetics
This project would add to the cumulative impacts to visual resources, since all improvements would be at the WTP site away from the community view.

4.2.9 Air Quality
Cumulative impacts to air quality in Wrangell is expected to be low, since the project would not have measurable air quality impacts and air quality in the community is good.

4.2.10 Socio-Economic/Environmental Justice
Reasonably foreseeable future projects in Wrangell would have minimal adverse effects to minority and low-income populations. The proposed WTP improvements would not have disproportionately high and adverse impacts to minority or low-income populations and

therefore is not a part of cumulative impacts of other projects. In fact, these projects together are expected to benefit the low income and minority populations in Wrangell.

4.2.11 Miscellaneous: Noise and Transportation

The WTP upgrades are not anticipated to have any effect on noise-sensitive land uses. Additional noise from planned projects not associated with this project would be minimal; therefore, the cumulative impact of the project is not substantial.

Transportation should not be cumulatively impacted by this project because this project only involves weekly transport of sludge to the barge dock.

4.2.12 Human Health and Safety

The proposed project would have no impacts or interference to electromagnetic fields and therefore would not contribute to the cumulative impacts to electromagnetic fields near Wrangell.

5.0 Summary of Mitigation

The following table summarizes mitigation efforts for each of the affected environments discussed in section 3 of this report.

Affected Environment	Mitigation Measures
Land Use	Not required, project is consistent with planning and zoning.
Floodplains	Not required, project does not impact floodplains.
Wetlands	Not required, project does not impact wetlands.
Water Resources	Water quality impacts mitigation: During construction, a SWPPP would be developed, erosion and sediment control BMPs will be implemented, and a spill clean-up kit will be maintained on site.
Coastal Resources	Not required, project does not impact coastal resources.
Biological Resources	Migratory bird impacts mitigation: No vegetation clearing would occur between April 15-July 15. Invasive species impacts mitigation: Disturbing activities would be minimized and disturbed areas would be re-vegetated with native species.
Historic and Cultural Properties	If historic resources are discovered during construction, all work would halt, and the SHPO would be contacted immediately.
Aesthetics	Not required, project does not impact visual resources
Air Quality	Most disturbed areas would be permanently stabilized after project completion to help suppress dust.
Socio-Economic Issues/ Environmental Justice	Not required, project does not have disproportionately high or adverse impacts to minority or low-income populations
Miscellaneous Issues	Not required, project does not impact noise and involves only minor impacts to transportation
Human Health and Safety	Not required, project does not impact electromagnetic fields

6.0 Coordination, Correspondence, and Coordination

On November 11, 2016, CBW's consultant emailed the USACE to request a jurisdictional determination (JD) for the project area (Exhibit B).

On November 14, 2016, a JD request form was submitted by email to USACE (Exhibit B).

On November 15, 2016, the CBW initiated consultation under the Section 106 of the National Historic Preservation Act by letters to the SHPO, Wrangell Cooperative Association, Central Council of the Tlingit and Haida Indian Tribes of Alaska, and Sealaska Corporation (Exhibit D).

On November 21, 2016, the USACE responded to the CBW request for a JD that the project area did not contain waters of the United States under the jurisdiction of the USACE (Exhibit B).

On November 29, 2016, an archeologist from the SHPO emailed that there were no immediate concerns regarding the cultural and historic sites information provided. The SHPO representative recommended the APE include all project-related components, including access roads, staging areas, and material sites. The representative did not have additional information and agreed with the consulting parties (Exhibit D).

On December 8, 2016, the USDA Rural Development's sent a letter to the SHPO requesting concurrence on a finding of no historic properties affected by the project (Exhibit D).

On December 15, 2016, the SHPO sent a letter concurring with USDA Rural Development's finding that no historic properties would be affected by the project (Exhibit D).

7.0 References

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8.0. List of Preparers

This report was prepared by Solstice Alaska Consulting, Inc. with assistance from CRW Engineering Group, LLC on behalf of the CBW. The individuals that contributed to compiling the report included the following:

Robin Reich, President, Solstice Alaska Consulting, Inc.
Areas of Input: Senior review, research, document writing

Olivia Cohn, Environmental Planner, Solstice Alaska Consulting, Inc.
Areas of Input: Research, document writing

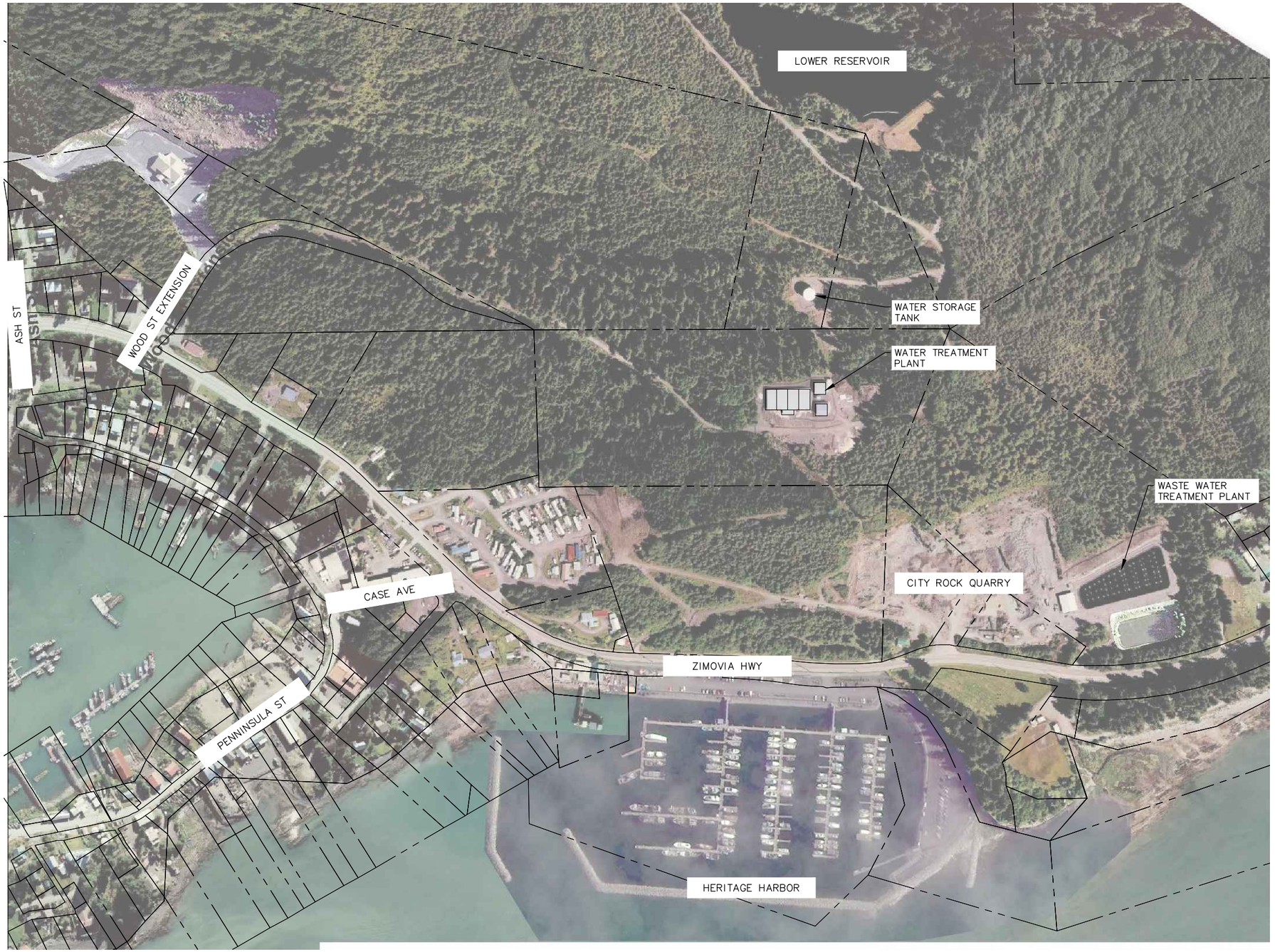
Will Kemp, P.E., Civil Engineer, CRW Engineering Group, LLC
Areas of Input: Review

Emerald Hagy, College Intern, Solstice Alaska Consulting, Inc.
Area of Input: Research, document writing

Exhibit A

Project Figures

CRW ENGINEERING GROUP, LLC		CITY AND BOROUGH OF WRANGELL PRELIMINARY ENGINEERING REPORT **Figure 1** VICINITY MAP	Project No: 20901.00
			Drawn By: WMK
			Scale: NTS
Project:			Date: 10/5/2016
STATUS: DRAFT			



200' 0 200' 400'

Figure 2

EXISTING AREA MAP

PROJECT: 20901.00

STATUS: DRAFT

CRW ENGINEERING GROUP, LLC
3940 ARCTIC BLVD, SUITE 300
ANCHORAGE, ALASKA 99503
PHONE: (907) 562-3252
#AECL882-AK

DATE 10/4/16

SCALE GRAPHIC

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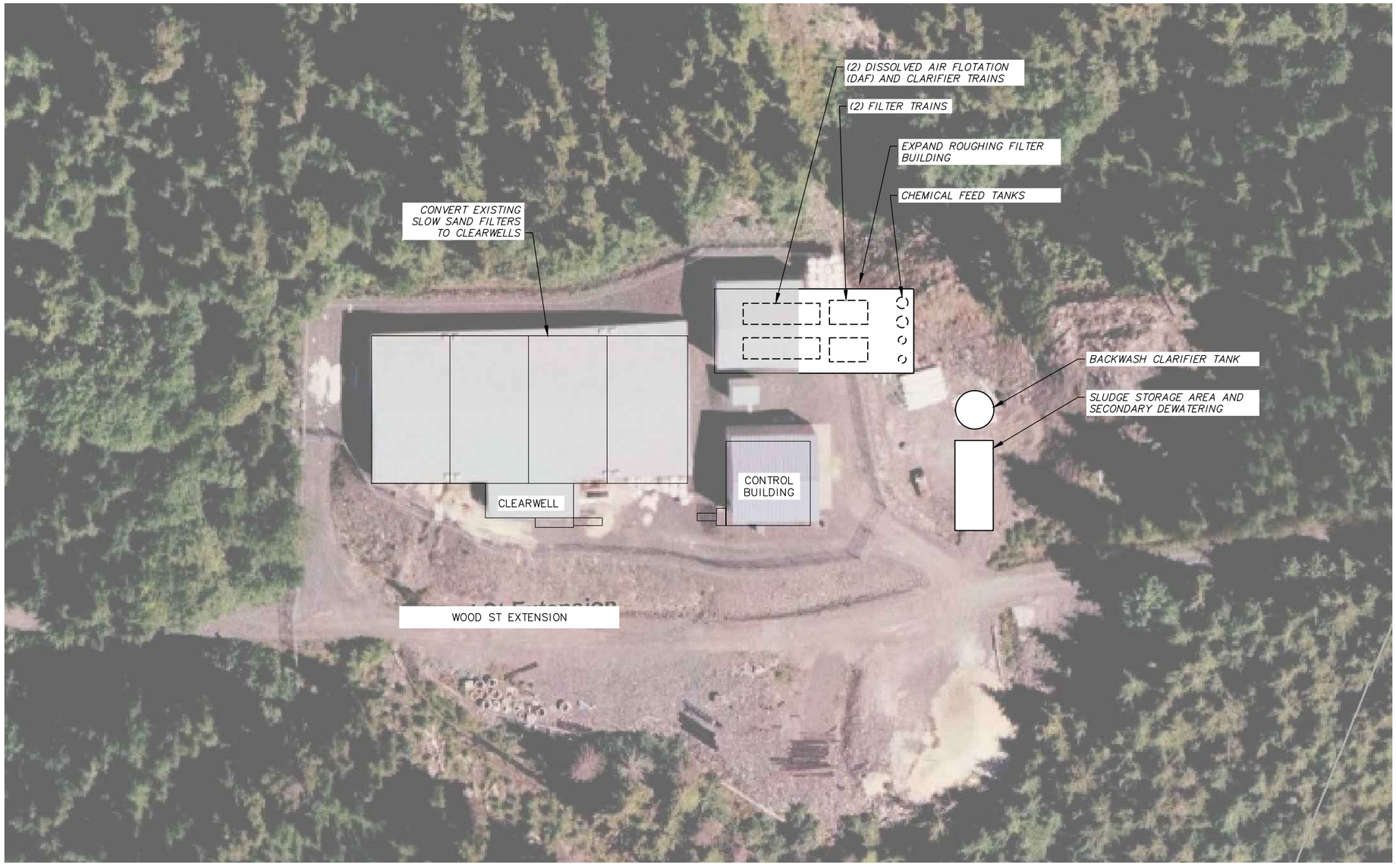

30' 0 30' 60'

PROJECT: 20901.00

STATUS: FINAL

CRW ENGINEERING GROUP LLC
3940 ARCTIC BLVD. SUITE 300
ANCHORAGE, ALASKA 99503
PHONE: (907) 562-3252
#AECL882-AK

Figure 3
PREFERRED ALTERNATIVE

DATE 3/27/17

SCALE GRAPHIC

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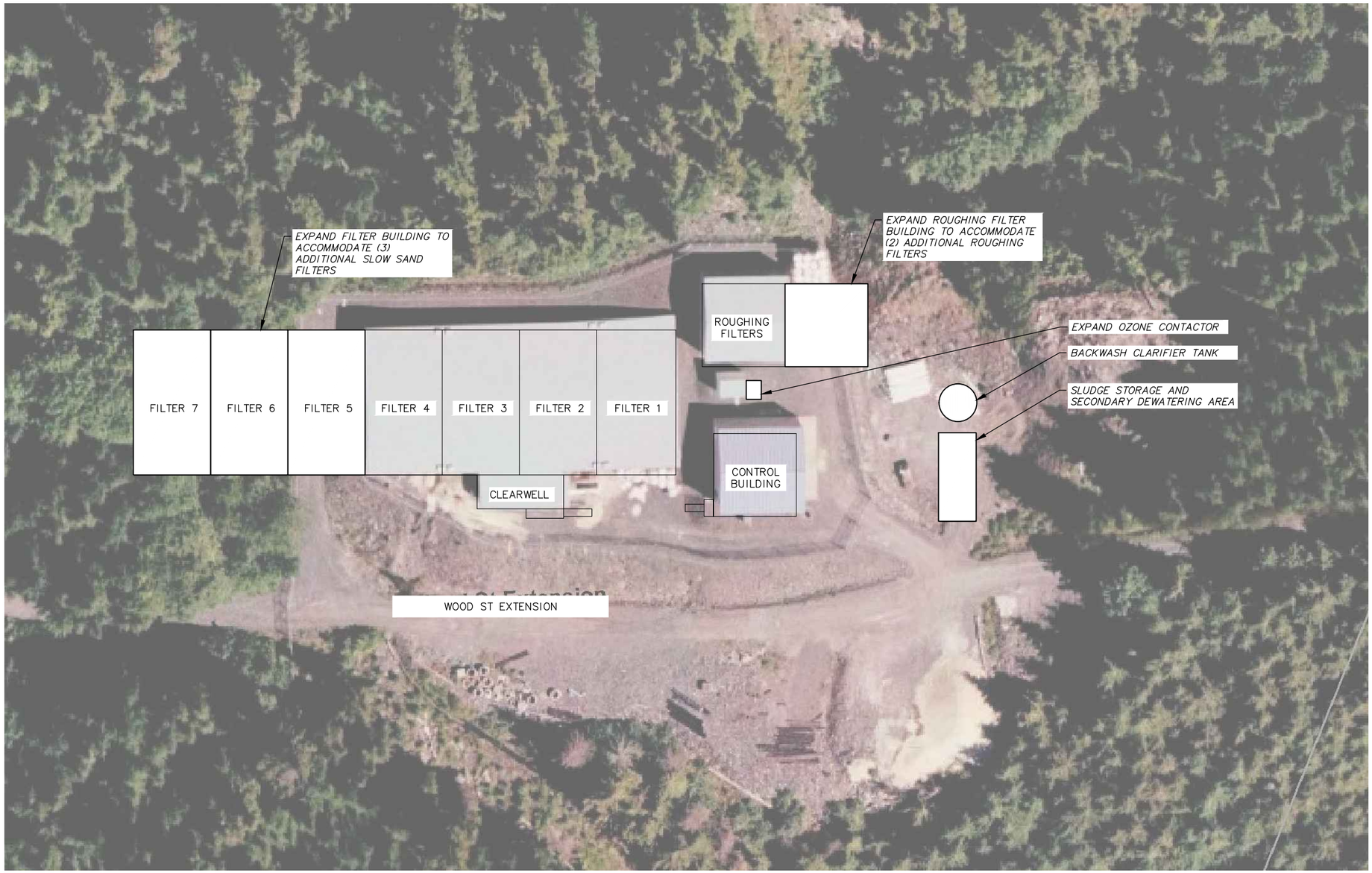

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PROJECT: 20901.00

STATUS: FINAL

CRW ENGINEERING GROUP, LLC
3940 ARCTIC BLVD. SUITE 300
ANCHORAGE, ALASKA 99503
PHONE: (907) 562-3252
#AECL882-AK

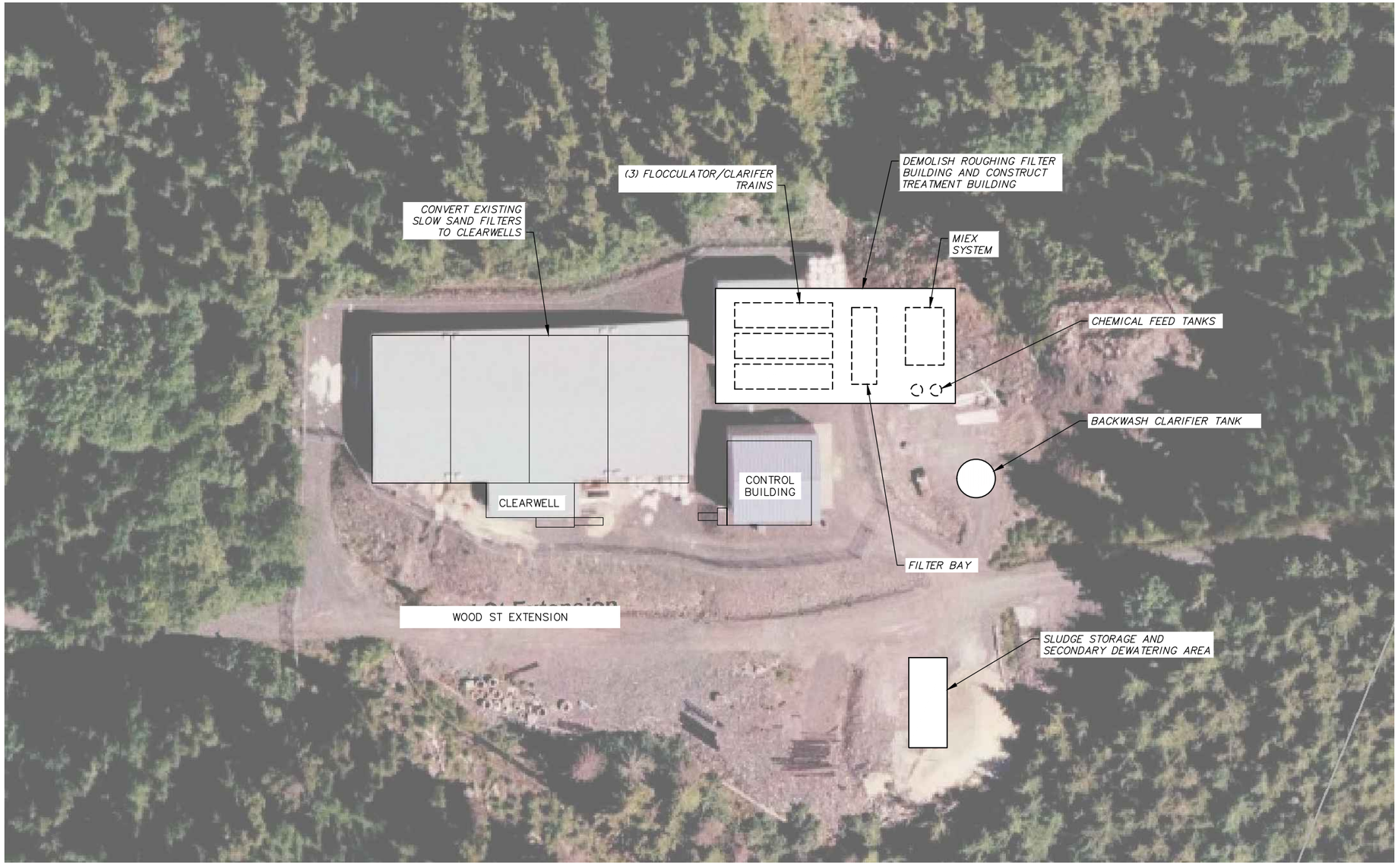
Figure 4

SITE PLAN – ALTERNATIVE 1
EXPAND SLOW SAND FILTERS

DATE 3/27/17

SCALE GRAPHIC

F



30' 0 30' 60'

PROJECT: 20901.00

STATUS: FINAL

CRW ENGINEERING GROUP LLC
3940 ARCTIC BLVD. SUITE 300
ANCHORAGE, ALASKA 99503
PHONE: (907) 562-3252
#AECL882-AK

Figure 5

SITE PLAN – ALTERNATIVE 2
MIEX AND MULTIMEDIA FILTRATION

DATE 3/27/17

SCALE GRAPHIC

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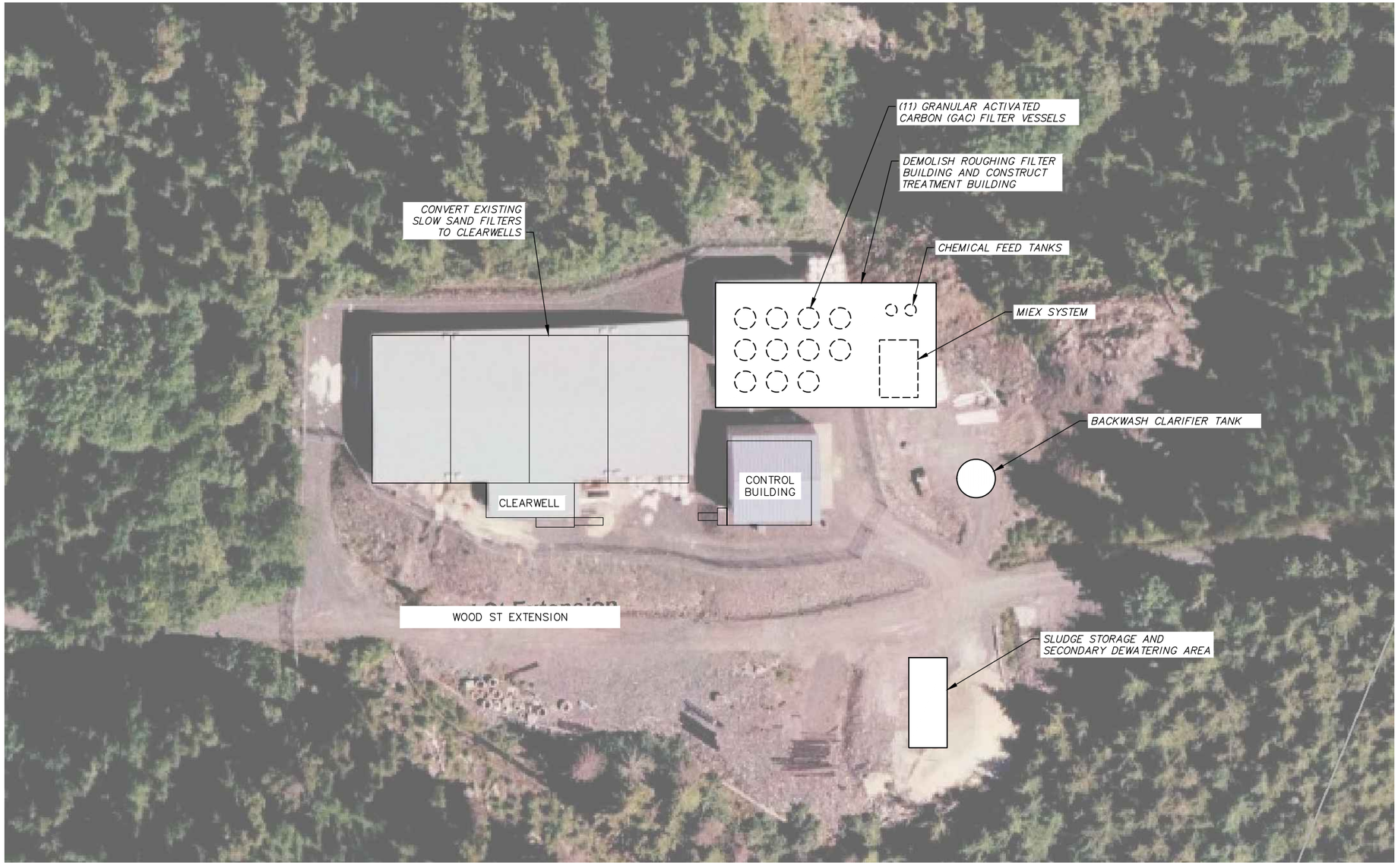

30' 0 30' 60'

PROJECT: 20901.00

STATUS: FINAL

CRW ENGINEERING GROUP LLC
3940 ARCTIC BLVD. SUITE 300
ANCHORAGE, ALASKA 99503
PHONE: (907) 562-3252
#AECL882-AK

Figure 6

SITE PLAN – ALTERNATIVE 3
MIEX AND BIOLOGICAL FILTRATION

DATE 3/27/17

SCALE GRAPHIC

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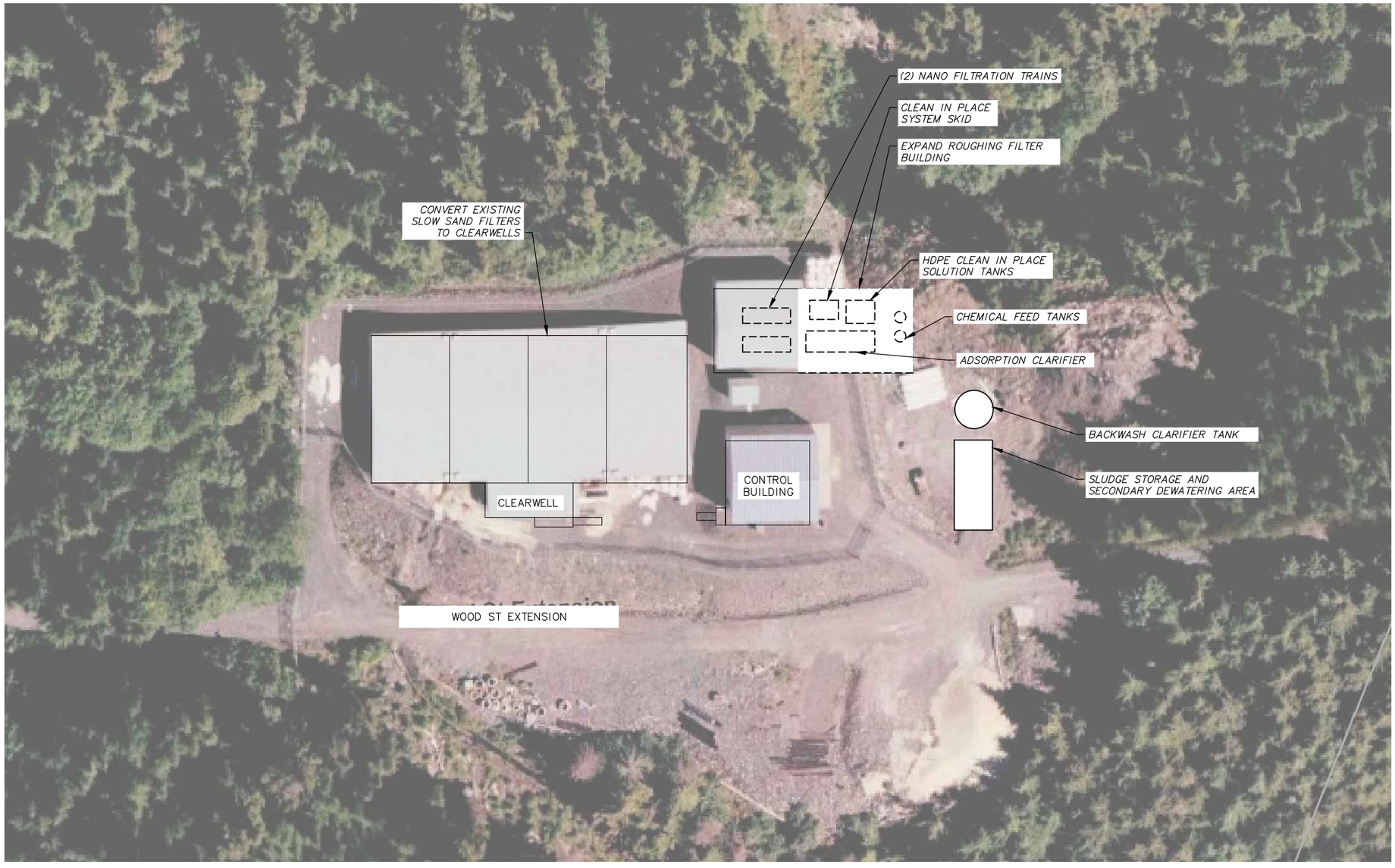

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PROJECT: 20901.00

STATUS: FINAL

CRW ENGINEERING GROUP, LLC
3940 ARCTIC BLVD. SUITE 300
ANCHORAGE, ALASKA 99503
PHONE: (907) 562-3252
#AECL882-AK

Figure 7

SITE PLAN – ALTERNATIVE 5
NANO FILTRATION WITH MULTIMEDIA FILTRATION

DATE 3/27/17

SCALE GRAPHIC

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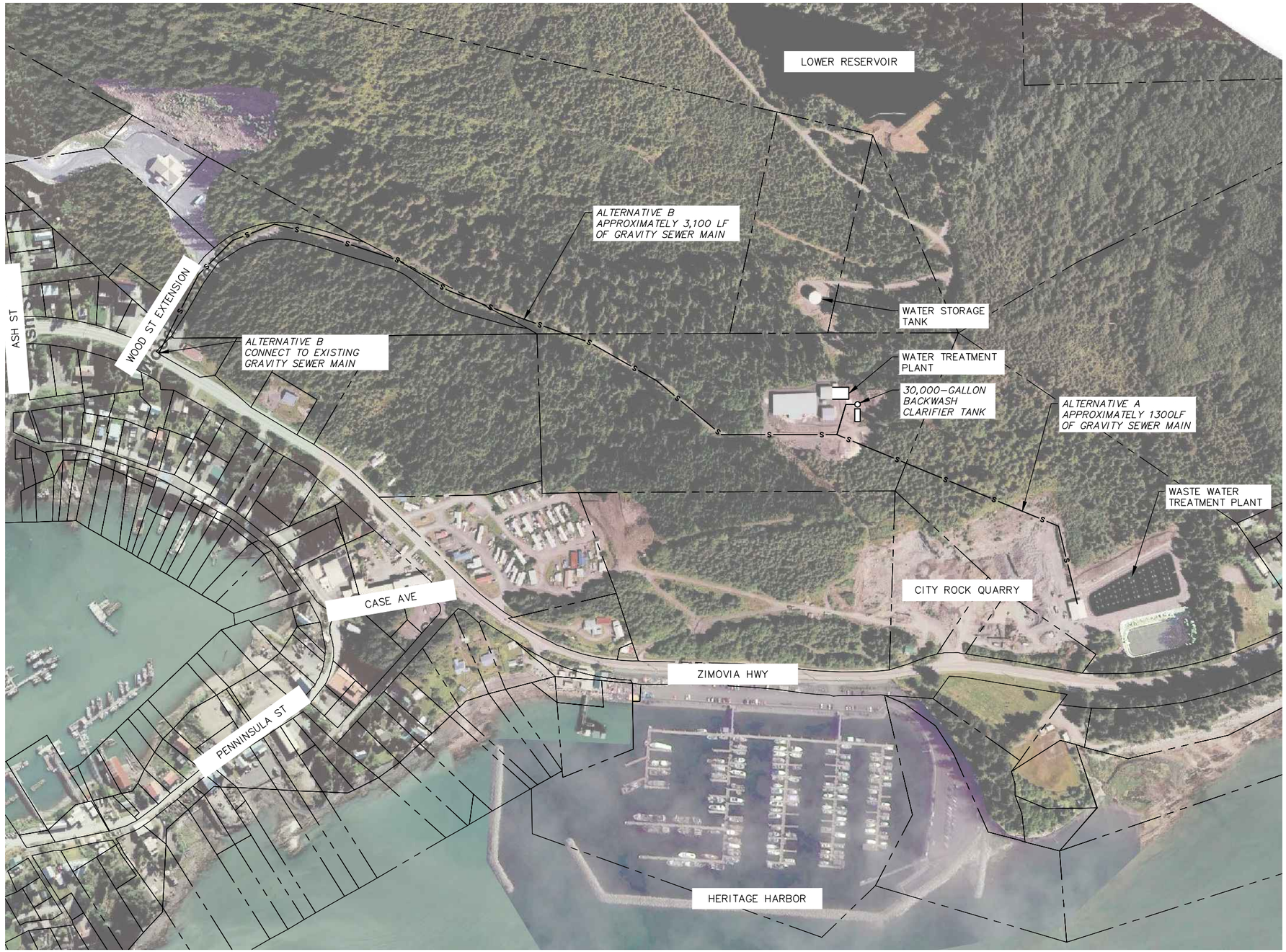


PROJECT:

STATUS: FINAL

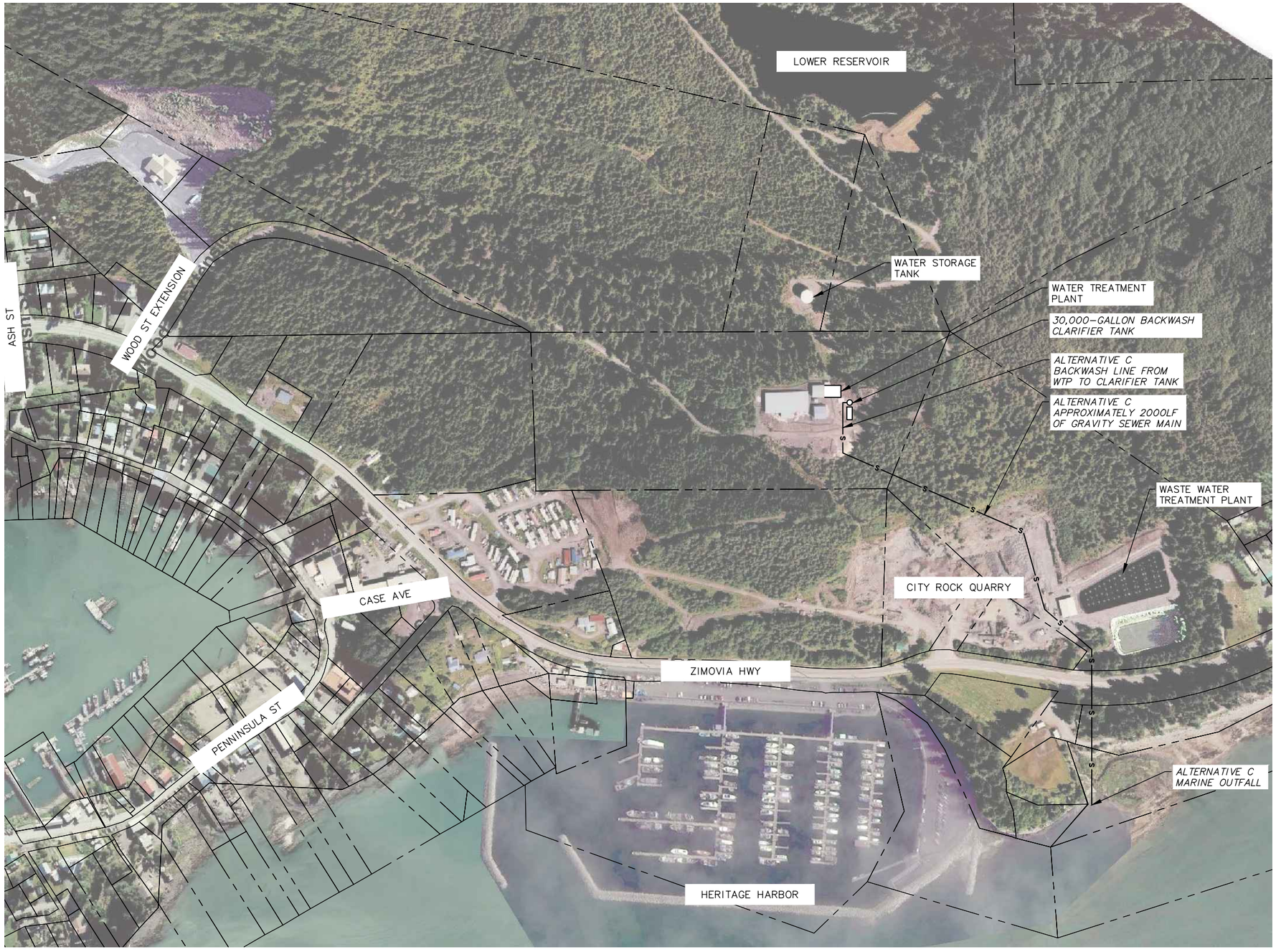
CRW ENGINEERING GROUP, LLC
3940 ARCTIC BLVD, SUITE 300
ANCHORAGE, ALASKA 99503
PHONE: (907) 562-3252
#AECL882-AK

Figure 8
BACKWASH WASTE DISPOSAL ALTERNATIVES A1, A2, AND B

DATE 3/27/17

SCALE GRAPHIC

File: J:\JobsData\20901.00 Wrangell Water Treatment Pilot Study\00 CADD\02 Figures\05 PER\20901.00 Sewer Disposal Alternatives.dwg



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PROJECT:

STATUS: FINAL

CRW ENGINEERING GROUP LLC
3940 ARCTIC BLVD. SUITE 300
ANCHORAGE, ALASKA 99503
PHONE: (907) 562-3252
#AECL882-AK

Figure 9

BACKWASH WASTE DISPOSAL ALTERNATIVE C

DATE 3/27/17

SCALE GRAPHIC

Exhibit B

Wetlands Information and Coordination

DEPARTMENT OF THE ARMY
ALASKA DISTRICT, U.S. ARMY CORPS OF ENGINEERS
REGULATORY DIVISION
P.O. BOX 6898
JBER, AK 99506-0898

November 21, 2016

Regulatory Division
POA-2016-535

City and Borough of Wrangell
Attn: Ms. Amber Al-Haddad
Post Office Box 531
Wrangell, Alaska 99929

Dear Ms. Al-Haddad:

This letter responds to your November 14, 2016, request for a Department of the Army (DA) jurisdictional determination for your proposed upgrade to the water treatment plant. It has been assigned number POA-2016-535, Zimovia Straits, which should be referred to in all correspondence with us. The project site is located within Section 36, T. 62 S., R. 83 E., Seward Meridian; USGS Quad Map AK-Petersburg B-2; Latitude 56.4561º N., Longitude 132.3770º W.; Wrangell-Petersburg Borough; in Wrangell, Alaska.

Based on our review of the information you provided, we have determined the subject property does not contain waters of the United States (U.S.) under Corps jurisdiction. Therefore, a DA permit is not required. A copy of the Approved Jurisdictional Determination form is available at: www.poa.usace.army.mil/Missions/Regulatory/JurisdictionalDeterminations.aspx under the above file number. Please contact us if you decide to alter the method, scope, or location of your proposed activity.

This approved jurisdictional determination is valid for a period of five (5) years from the date of this letter, unless new information supporting a revision is provided to us before the expiration date.

Enclosed is a Notification of Administrative Appeal Options and Process and Request for Appeal form regarding this approved jurisdictional determination (see section labeled “Approved Jurisdictional Determination”).

Nothing in this letter excuses you from compliance with other Federal, State, or local statutes, ordinances, or regulations.

Please contact me via email at michael.r.gala@usace.army.mil, by mail at the address above, by phone at (907) 753-2821, or toll free from within Alaska at (800) 478-2712, if you have questions. For more information about the Regulatory Program, please visit our website at http://www.poa.usace.army.mil/Missions/Regulatory.aspx.

Sincerely,

Michael R. Gala
Regulatory Specialist

Request for a Jurisdictional Determination from the Regulatory Division of the U.S. Army Corps of Engineers

Instructions: Provide the information on this sheet along with a map of the property and send it to one of the Corps offices listed on the back of this form.

City and Borough of Wrangell, Alaska
NAME

(907) 874-3904
PHONE - HOME

Amber Al-Haddad
Director of Public Works and Capital Projects
MAILING ADDRESS 1

(907) 874-3904
PHONE - WORK

P.O. Box 531
MAILING ADDRESS 2

FAX

Wrangell AK 99929
CITY STATE ZIP

aal-haddad@wrangell.com
E-MAIL

Property Location:

Section 31 Township 62S Range 84D Meridian Copper River Nearest City Wrangell

Lot: _____ Block: _____ Tract: _____ Subdivision Name: _____

Parcel Number: _____ Borough: City and Borough of Wrangell

Physical Address (if any): _____

Directions to the property: From the Wrangell Airport, take Airport Loop Road east to Bennett Street to Zimovia Highway. Turn left (east) off Zimovia Highway to Wood Street (the Water Treatment Plant access road). The project area can be accessed from the WTP parking area.

How are the boundaries of the property identified? _____

Do you own the land? (Yes) or No

If "Yes", do we have your permission to visit the property? (Yes) or No

If you do not own the property and in the event a site visit is necessary, provide a written statement from the landowner allowing the Corps of Engineers to enter the site.

To expedite our response to you, you may request a preliminary jurisdictional determination (PJD). If you need to obtain a permit for your project, it may be possible to evaluate your permit application using a PJD, depending on the specific project. Note that a PJD is not definitive and therefore not appealable. More information regarding JDs can be found at http://www.usace.army.mil/Portals/2/docs/civilworks/RGLS/rgl08-02.pdf.

Please indicate if you desire a preliminary jurisdictional determination (PJD). (YES) or NO

Signature Amber Al-Haddad
Public Works Director

Date: November 14, 2016

Submit this form and map to the Corps office responsible for the geographic area that encompasses the Property Location. (See back)

From: Robin Reich <robin@solsticeak.com>
Sent: Friday, November 11, 2016 2:04 PM
To: 'Speerstra, Linda POA'
Cc: ''Olivia Cohn''
Subject: FW: Wrangell Wetlands Water Treatment Plant Project

Hi Linda-
Here is information to follow up on the voicemail message I left you this morning. I will send along a JD request form, if you need it?

The City & Borough of Wrangell is currently proposing improvements to its water treatment processes that consist of constructing a backwash waste disposal pipe and an expansion and remodel of its water treatment plant (WTP). We are assisting the City with environmental permitting for this effort.

The project would be located in Wrangell, Alaska north of Zimovia Highway near Township 62 South, Range 84 East, Section 31 of the Copper River Meridian, USGS quadrangle Petersburg B-2 NE. The WTP is located at approximately latitude 56.4565028112, longitude -132.376624775 (Figure 1). WTP improvements would occur primarily within the footprint of the existing WTP to expand capacity of existing infrastructure. The preferred option for the backwash waste disposal pipe would be a 1,350 linear feet pipe that would be constructed to run downhill from the WTP, that is located near the 400-feet (ft) contour, to connect to the existing wastewater treatment facility (WWTF), that is located just under the 100-ft contour. See the included U.S. Geological Survey topographical map image for a depiction of the elevations (Figure 2). See the included photographs of the proposed project area for the WTP and backwash waste disposal pipe, which were taken on October 19, 2016 traveling downhill from the WTP to the WWTF, for a depiction of the proposed project area (Images 1 through 13).

National Wetlands Inventory (NWI) and Other Information
According to the NWI, wetlands do not exist in the project area (Figure 3). There is little other wetlands data available in the proposed project area. Land appraisals, the 2003 wetlands assessment (which does not include the proposed project area), a City & Borough of Wrangell Land Prospectus, the Wrangell Institute Master Plan, the Tongass National Forest website, the Southeast Alaska Land Trust's Wetland Ecosystem Services Protocol for Southeast Alaska, and additional resources were reviewed.

The grade along the vegetated hillside area along the proposed backwash disposal pipe route from the WTP to the WWTF is approximately 25% (a 25 ft elevation difference per 100 ft). It appears that the area contains forested vegetation (see images). According to the 2003 Wetlands and Watershed Management Plan for the City of Wrangell and Alaska Mental Health Trust Land Office, hydric soils were mapped almost a mile from the proposed project area, (for the Institute Study Area). According to the 2014 City and Borough of Wrangell, Alaska 134 Acre Land Prospectus, which includes the proposed project area, the land is described as mostly forested wetlands (The prospectus states: "Mostly forested wetlands occur throughout the property with several large creeks and smaller drainages.")

Given the information in this email, we are requesting a jurisdictional determination. Please see attached.

Figure 1. Water treatment project general project Area, Wrangell, Alaska

Figure 2. U.S. Geological Survey topographical map of the water treatment improvement proposed project area, Wrangell, Alaska. *The red diamond indicates the location of the WTP at 56.4565028112, -132.376624775.*


topoView
1880
2010
Shoemaker Bay Zimovia Hwy
Wood St
MAP RECORDS: 8

Figure 3. NWI mapping near general project area, Wrangell, Alaska

Site photographs

These photographs were taken on October 19, 2016 and follow the proposed project area traveling downhill from the WTP to the WWTF.

Image 1.

Image 2.

Image 3.

Image 4.

These photographs were taken on October 19, 2016 and follow the proposed project area traveling downhill from the WTP to the WWTF.

Image 5.

Image 6.

Image 7.

Image 8.

These photographs were taken on October 19, 2016 and follow the proposed project area traveling downhill from the WTP to the WWTF.

Image 9.

Image 10.

These photographs were taken on October 19, 2016 and follow the proposed project area traveling downhill from the WTP to the WWTF. The WWTF can be seen in these photographs.

Image 11.

Image 12.


Image 13.

Thank you.

Robin Reich, President
Environmental Planner

Solstice Alaska Consulting, Inc.
2607 Fairbanks St. #B
Anchorage, AK 99503
907.929.5960
Cell: 907.903.0597

www.solsticeak.com

Exhibit C

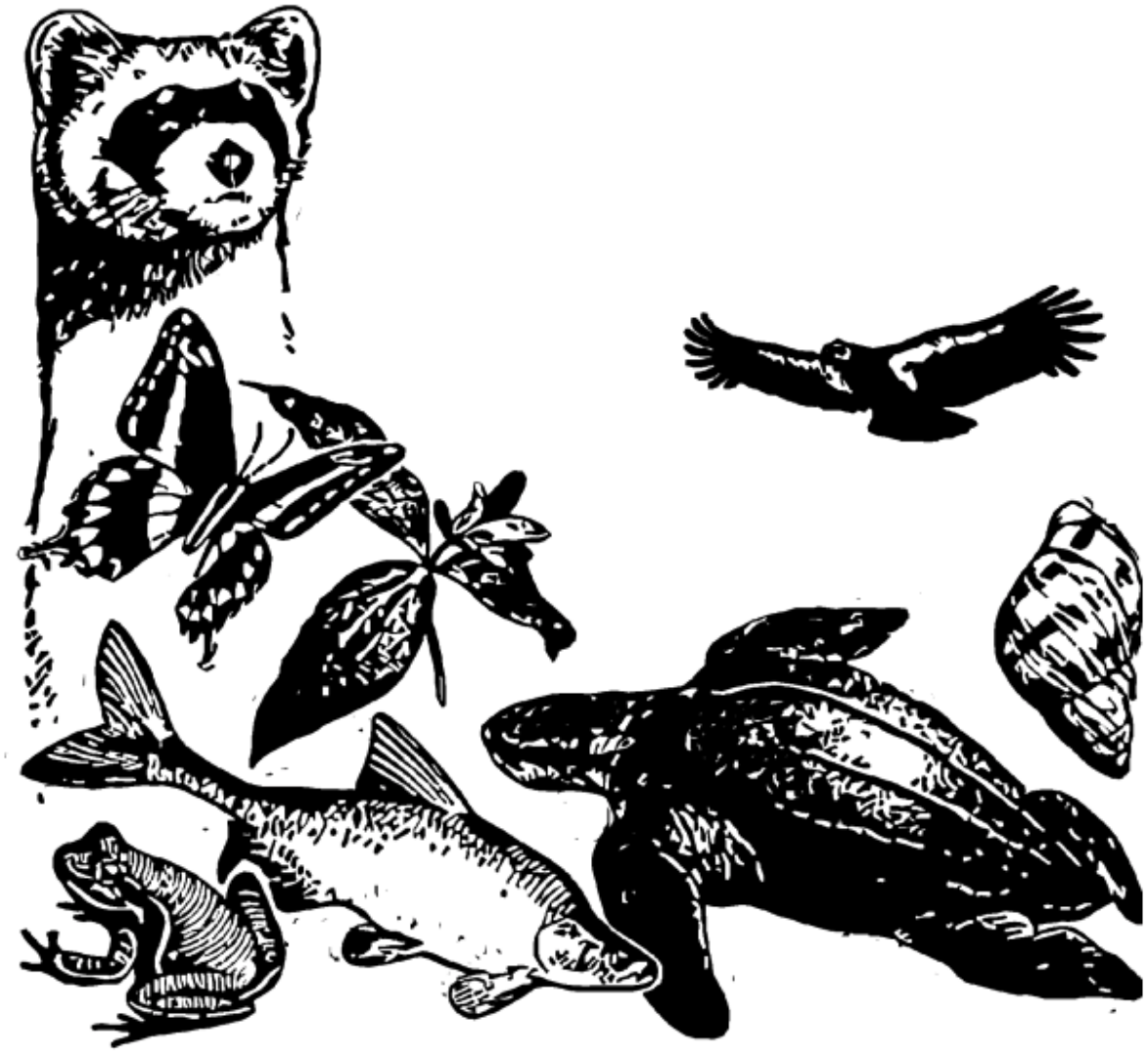
U.S. Fish and Wildlife Service Information for Planning and Conservation Report

U.S. Fish & Wildlife Service

IPaC Trust Resources Report

Generated October 05, 2016 04:25 PM MDT, IPaC v3.0.9

This report is for informational purposes only and should not be used for planning or analyzing project level impacts. For project reviews that require U.S. Fish & Wildlife Service review or concurrence, please return to the IPaC website and request an official species list from the Regulatory Documents page.



IPaC - Information for Planning and Conservation (https://ecos.fws.gov/ipac/): A project planning tool to help streamline the U.S. Fish & Wildlife Service environmental review process.

Table of Contents

U.S. Fish & Wildlife Service

IPaC Trust Resources Report

LOCATION

Wrangell County, Alaska

IPAC LINK

https://ecos.fws.gov/ipac/project/QVBER-SQCNF-BANCV-EPW42-FDSH7A

U.S. Fish & Wildlife Service Contact Information

Trust resources in this location are managed by:

Anchorage Fish And Wildlife Field Office
4700 Blm Road
Anchorage, AK 99507
(907) 271-2888

Endangered Species

Proposed, candidate, threatened, and endangered species are managed by the Endangered Species Program of the U.S. Fish & Wildlife Service.

This USFWS trust resource report is for informational purposes only and should not be used for planning or analyzing project level impacts.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list from the Regulatory Documents section.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list either from the Regulatory Documents section in IPaC or from the local field office directly.

There are no endangered species in this location

Critical Habitats

There are no critical habitats in this location

Migratory Birds

Birds are protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Any activity that results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish & Wildlife Service.[1] There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

---

1. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern
  http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Conservation measures for birds
  http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Year-round bird occurrence data
  http://www.birdscanada.org/birdmon/default/datasummaries.jsp

The following species of migratory birds could potentially be affected by activities in this location:

Black Oystercatcher Haematopus bachmani — Bird of conservation concern
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0KJ

Fox Sparrow Passerella iliaca — Bird of conservation concern
Season: Breeding

Lesser Yellowlegs Tringa flavipes — Bird of conservation concern
Season: Breeding
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0MD

Marbled Murrelet Brachyramphus marmoratus — Bird of conservation concern
Season: Year-round
http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B08C

Pelagic Cormorant Phalacrocorax pelagicus pelagicus — Bird of conservation concern
Season: Wintering

Pink-footed Shearwater Puffinus creatopus — Bird of conservation concern

Season: Year-round

Queen Charlotte Goshawk Accipiter gentilis laingi — Bird of conservation concern

Season: Year-round

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0AE

Rufous Hummingbird selasphorus rufus — Bird of conservation concern

Season: Breeding

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0E1

Short-eared Owl Asio flammeus — Bird of conservation concern

Season: Breeding

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HD

Wildlife refuges and fish hatcheries

There are no refuges or fish hatcheries in this location

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Wetland data is unavailable at this time.

Exhibit D

Cultural and Historic Resources Information and Coordination

THE STATE of ALASKA
GOVERNOR BILL WALKER

Department of Natural Resources
DIVISION OF PARKS & OUTDOOR RECREATION
Office of History & Archaeology
550 West 7th Ave, Suite 1310
Anchorage, Alaska 99501-3565
Main: 907.269.8721
http://dnr.alaska.gov/parks/oha

December 15th, 2016

File No.: 3130-1R USDA-RD
2016-01463

Robert Chambers
USDA – Rural Development
Alaska State Office
800 W. Evergreen, Suite 201
Palmer, AK 99645

SUBJECT: Finding of No Historic Properties Affected, City and Borough of Wrangell Water Treatment Plant Improvements

Dear Mr. Chambers:

The Alaska State Historic Preservation Office (AKSHPO) received your correspondence on December 8th, 2016. Upon review of the documentation provided, we concur that a finding of **no historic properties affected** is appropriate for the subject undertaking.

As a reminder, should previously unidentified archaeological resources be discovered in the course of the project, work must be interrupted until the resources have been evaluated in terms of the National Register of Historic Places eligibility criteria (36 CFR 60.4) in consultation with our office.

Thank you for the opportunity to review and comment. Please contact Mckenzie Johnson at 269-8726 or mckenzie.johnson@alaska.gov if you have any questions or if we can be of further assistance.

Sincerely,

Judith E. Bittner

Judith E. Bittner
State Historic Preservation Officer

JEB: msj

From: Amber Al-Haddad <aal-haddad@wrangell.com>
Sent: Monday, December 12, 2016 4:42 PM
To: 'Johnson, McKenzie S (DNR)'
Cc: tasha.deardorff@ak.usda.gov; 'Jon Hermon'; 'Will Kemp'; 'Robin Reich'
Subject: Wrangell Drinking Water Treatment Plant Project--Initiation of Section 106, AKSHPO Comments

Hello McKenzie,

Thank you for AKSHPO's review for Wrangell's proposed Water Treatment Plant Improvements project, indicating that there are no immediate concerns with the described Area of Potential Effect (APE) or with the current assessment of potential effects. We appreciate your recommendation to maintain project staging areas within the APE, and we will share any information received from other consulting parties upon receipt. Thank you again for your prompt review of our request.

Best,
Amber Al-Haddad
Director of Public Works and Capital Projects
City and Borough of Wrangell
P.O. Box 531, Wrangell, Alaska 99929
Telephone 907.874-3904
Email: aal-haddad@wrangell.com
www.wrangell.com

From: Johnson, McKenzie S (DNR) [mailto:mckenzie.johnson@alaska.gov]
Sent: Tuesday, November 29, 2016 12:45 PM
To: aal-haddad@wrangell.com
Cc: tasha.deardorff@ak.usda.gov
Subject: Wrangell Drinking Water Treatment Plant Project--Initiation of Section 106, AKSHPO Comments

File No.: 3130-1R USDA-RD
2016-01463

Ms. Al-Haddad,

The Alaska State Historic Preservation Office (AKSHPO) received your correspondence initiating consultation under Section 106 on behalf of Rural Development (USDA-RD) on November 21st, 2016 (dated November 15th, 2016). Upon review of the information provided for the project we do not have any immediate concerns with the described Area of Potential Effect (APE), or the current assessment of potential effects. We recommend ensuring all access roads for construction equipment, staging areas, and potential material sources-- if necessary-- are captured within the APE boundaries. We have no additional information regarding known or potential historic properties that was not already addressed in the documentation, and appropriate contacts for consulting parties appear to have been made. We look forward to receiving the final determination of effect from USDA-RD. If other consulting parties offer new information, or have concerns, we would appreciate a copy of those comments for our review. Please let me know if we can assist further, and thank you for the opportunity to comment.

Mckenzie S. Johnson
Archaeologist I, Review and Compliance

CITY & BOROUGH OF WRANGELL
INCORPORATED JUNE 15, 1903

Dept. of Public Works & Capital Projects

PO Box 531
Wrangell, AK 99929

Phone (907)-874-3904
Fax (907)-874-2699

November 15, 2016

Judith Bittner, State Historic Preservation Officer
Alaska Office of History and Archeology and State Historic Preservation Office
Alaska Department of Natural Resources
550 West 7th Avenue, Suite 1260
Anchorage, AK 99501-3557

Subject: Initiation of Section 106 Review Process

The City and Borough of Wrangell has applied to the USDA Rural Development for federal financial assistance, and we have been authorized by that agency to initiate the consultation process required under Section 106 of the National Historic Preservation Act (NHPA) (see attached authorization). Section 106 of the NHPA requires federal agencies to consider the effects of their undertakings on historic properties.

You have been identified as a possible consulting party under 36 CFR Part 800, Section 800.2(c). Therefore, we provide you with the attached information regarding our proposed project and respectfully request your comments with regards to the potential for the project to impact historic properties. Specifically, we would appreciate any comments you may have on the following issues:

- The proposed project;
- The described area of potential effects (APE);
- The potential effects of the undertaking on any historic property we have thus far identified;
- Information on other historic properties which might be present and could be effected by the proposed project, including properties which have religious or cultural significance to one or more Indian Tribes;
- Any additional parties with who we should consider consulting; and
- Any other comments or information related to historic preservation which you believe is relevant to the Section 106 review.

Please be as specific as you can with any comments or information. Since this review is time sensitive and must adhere to the provisions in 36 CFR Part 800, we request that you submit comments within 30 days from receipt of this letter.

If you have any questions regarding this letter please contact me at 907-874-3904 or P.O. Box 531, Wrangell, AK 99929, or you may contact Rural Development directly by contacting Tasha Deardorff at 907-271-2424 ext. 118 or 510 L Street, Suite 410, Anchorage, AK 99501.

Sincerely,

Amber Al-Haddad

Amber Al-Haddad
Director of Public Works and Capital Projects
City and Borough of Wrangell
P.O. Box 531
Wrangell, AK 99929

Attachments: Section 106 Consultation Supporting Documentation

Copy: Tasha Deardorff, USDA, WEP/RAVG Program
Jon Hermon, CRW Engineering Group

CITY & BOROUGH OF WRANGELL
INCORPORATED JUNE 15, 1903

Dept. of Public Works & Capital Projects

PO Box 531
Wrangell, AK 99929

Phone (907)-874-3904
Fax (907)-874-2699

November 15, 2016

Richard Oliver, President
Wrangell Cooperative Association
P.O. Box 2021
Wrangell, AK 99929

Subject: Initiation of Section 106 Review Process

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Sincerely,

Amber Al-Haddad

Amber Al-Haddad
Director of Public Works and Capital Projects
City and Borough of Wrangell
P.O. Box 531
Wrangell, AK 99929

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Jon Hermon, CRW Engineering Group

CITY & BOROUGH OF WRANGELL
INCORPORATED JUNE 15, 1903

Dept. of Public Works & Capital Projects

PO Box 531
Wrangell, AK 99929

Phone (907)-874-3904
Fax (907)-874-2699

November 15, 2016

Richard J. Peterson, President
Central Council of the Tlingit and Haida Indian Tribes of Alaska
320 West Wiloughby Avenue, Suite 300
Juneau, AK 99801

Subject: Initiation of Section 106 Review Process

The City and Borough of Wrangell has applied to the USDA Rural Development for federal financial assistance, and we have been authorized by that agency to initiate the consultation process required under Section 106 of the National Historic Preservation Act (NHPA) (see attached authorization). Section 106 of the NHPA requires federal agencies to consider the effects of their undertakings on historic properties.

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Sincerely,

Amber Al-Haddad

Amber Al-Haddad
Director of Public Works and Capital Projects
City and Borough of Wrangell
P.O. Box 531
Wrangell, AK 99929

Attachments: Section 106 Consultation Supporting Documentation

Copy: Tasha Deardorff, USDA, WEP/RAVG Program
Jon Hermon, CRW Engineering Group

CITY & BOROUGH OF WRANGELL
INCORPORATED JUNE 15, 1903

Dept. of Public Works & Capital Projects

PO Box 531
Wrangell, AK 99929

Phone (907)-874-3904
Fax (907)-874-2699

November 15, 2016

Anthony Mallott, President and CEO
Sealaska Corporation
One Sealaska Plaza, Suite 400
Juneau, AK 99801-1276

Subject: Initiation of Section 106 Review Process

The City and Borough of Wrangell has applied to the USDA Rural Development for federal financial assistance, and we have been authorized by that agency to initiate the consultation process required under Section 106 of the National Historic Preservation Act (NHPA) (see attached authorization). Section 106 of the NHPA requires federal agencies to consider the effects of their undertakings on historic properties.

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Sincerely,

Amber Al-Haddad

Amber Al-Haddad
Director of Public Works and Capital Projects
City and Borough of Wrangell
P.O. Box 531
Wrangell, AK 99929

Attachments: Section 106 Consultation Supporting Documentation

Copy: Tasha Deardorff, USDA, WEP/RAVG Program
Jon Hermon, CRW Engineering Group

Wrangell Drinking Water Treatment Plant Pilot Study Project
Section 106 Consultation Supporting Documentation
November 2016

Authorization/Instructions to Applicant
For reference, the National Historic Preservation Act (NHPA) Section 106 Consultation Authorization and Instructions to Applicant are attached to this document (Attachment A). The document gives written authorization to the City and Borough of Wrangell (CBW), CRW Engineering Group, LLC (CRW), and Solstice Alaska Consulting, Inc. (SolsticeAK) to initiate consultation under the Section 106 process on behalf of the U.S. Department of Agriculture (USDA) Rural Development.

Project Description
To meet the community of Wrangell's current water demand, the CBW is proposing to upgrade Wrangell's water treatment plant (WTP). Presently, Wrangell's primary water source is a water treatment system that includes an existing WTP, water storage tank, and a lower reservoir wastewater treatment plant (WWTP). The proposed project will upgrade and expand Wrangell's water treatment system.

The water treatment processes would be improved through remodeling, upgrading, and expanding the existing WTP and installing a gravity sewer line pipe for backwash wastewater disposal to the nearby existing WWTP.

WTP Upgrades and Expansion
A new treatment building would be constructed adjacent to the existing WTP to house two parallel Dissolved Air Flotation (DAF) plants and multimedia filtration to ensure that water meets drinking water standards. The treatment building would also house chemical feed tanks and associated pumps and control systems. The existing slow sand filters at the WTP facility would be converted into clearwells to slightly more than double the current capacity of the facility to about 850,000 gallons. A dedicated chemical storage building would be constructed adjacent to the new treatment building.

Gravity Sewer Line
A gravity sewer line would be installed to carry backwash wastewater from the WTP to the WWTP. The gravity sewer main would be approximately 1,350 linear feet long and would run underground to the WWTP, where the water would be treated. Sewer line construction would require clearing, drilling, and blasting along the proposed alignment.

Figures showing the proposed project are found in Attachment B.

Federal and State Project Involvement

The CBW is interested in obtaining funds from USDA Rural Development for upgrades to the WTP. In order to obtain federal funding, the project must meet the requirements of the National Environmental Policy Act.

Further, the project is expected to require the following permits and authorizations:

- NHPA Section 106 compliance through concurrence from the Alaska Office of History and Archaeology and State Historic Preservation Office (SHPO)
- State of Alaska Department of Environmental Conservation (ADEC) Drinking Water Plan Review, including a Construction Approval and Operations Approval
- ADEC Wastewater Plan Review, including a Construction Approval and Operations Approval
- ADEC General Construction Permit

Project Site Details

The project would occur in Wrangell, Alaska, which is located on the northwest tip of Wrangell Island, 155 miles south of Juneau and 89 miles northwest of Ketchikan (Figure 1). Within Wrangell, the project would be located north of Zimovia Highway (Township 62 South, Range 84 East, Section 31 of the Copper River Meridian, USGS quadrangle Petersburg B-2 NE). The WTP is located at approximately north latitude 56.4565028112, west longitude -132.376624775 (Attachment B; Figure 1).

Land Use

The project would be located on land owned by the CBW and zoned light industrial/industrial. The project would involve approximately 1 acre of impacts to previously disturbed land adjacent to the WTP, undisturbed forested land, and previously disturbed land adjacent to an existing rock quarry and the WWTP. The land is flat near the WTP and sloped between the WTP and the WWTP.

Adjacent Land Use

Most of the land adjacent to the proposed project area is owned by the CBW and is zoned light industrial/industrial. A portion of the project area is bounded by quarry, which is zoned industrial. The northern area of the quarry is privately owned, and the southern area is owned by the CBW.

U.S. Geological Survey (USGS) Quadrangle Map

The USGS 7.5 quadrangle map, Petersburg B-2 NE, is found in Attachment C.

Site Photographs

See the included photographs of the proposed project area for the WTP and gravity sewer line pipe for backwash wastewater disposal, which were taken on October 19, 2016, traveling downhill from the WTP to the WWTP (Attachment D; Images 1 through 13).

Area of Potential Effects

The project's area of potential effects (APE) is the existing WTP, an area around the WTP, and a 50-ft wide corridor between the WTP and the WWTP. See the provided APE map (Attachment E).

Efforts to Determine Cultural and Historic Resources in the APE

A cultural resources literature review was completed on October 17, 2016 by Cultural Resource Consultants, LLC (CRC; Attachment F).

Results of Efforts to Determine Cultural and Historic Resources in the APE

According to CRC's literature review preliminary findings, there are no known sites within the project limits listed in the Alaska Heritage Resource Survey (AHRS). West of the general project area, the closest known sites are a reported petroglyph (PET-00033), the Redmen's Cemetery and Native Cemetery (PET-00099), Eli Urho Kanerva Boat Shed and Warehouse (PET-00330), and Fremin Midden (PET-00483). To the east are two Wrangell water supply dams—PET-00571 and PET-00572.

Among other criteria, Appendix D of the 2010 programmatic agreement[1] between the USDA Forest Service, Advisory Council on Historic Preservation, and Alaska State Historic Preservation Officer defines areas of high archaeological sensitivity as "all land between mean lower low water and 100 ft. of elevation above mean high water, with no consideration of slope;" "lake and stream systems containing, or known to have contained, anadromous fish runs; including a focus on barrier falls locations in such systems;" and "elevated/fossil marine, river, and lake terrace systems." The project area is generally above the 100-ft contour, is not near the mouth of any creeks, and the topography of the area is too steep to be considered a marine terrace.

According to CRC, the location does not appear to have been archaeologically surveyed; however, because the proposed project is in an area where there is low probability for undiscovered historic and archaeological sites, CRC does not recommend an archaeological field survey.

Preliminary Findings and Determination

There are no reported historic or cultural sites within the APE, and the probability that there are historic properties within the APE is low. Based on the information above, CBW, CRW, and SolsticeAK contend that no historic properties will be affected by the project.

[1] *Third Amended Programmatic Agreement Among the USDA Forest Service, Alaska Region, the Advisory Council on Historic Preservation, and the Alaska State Historic Preservation Officer Regarding Heritage Resource Management on National Forests in the State of Alaska.*

Parties Consulted

The parties that are being consulted on this issue include the following entities:

- Wrangell Cooperative Association (local federally-recognized tribe)
- Central Council of the Tlingit and Haida Indian Tribes of Alaska (native non-profit regional organization)
- Sealaska Corporation (ANCSA regional corporation)

Wrangell was not recognized under section 16 of ANCSA and does not have a village corporation.

Attachments

Attachment A
NHPA Section 106 Consultation Authorization and Instructions to Applicant

Attachment B
Figure 1. Vicinity Map
Figure 2. Proposed WTP Upgrades and Expansion
Figure 3. Proposed Gravity Sewer Line Location

Attachment C
USGS Map Petersburg B-2 SE

Attachment D
Site Photographs: Images 1-13

Attachment E
Area of Potential Effect Figure

Attachment F
Cultural Resources Literature Review Memorandum
Prepared by Cultural Resources Consultants, LLC. October 17, 2016

Attachment A

NHPA Section 106 Consultation Authorization and Instructions to Applicant

USDA
United States Department of Agriculture

Rural Development

510 L Street,
Suite 410
Anchorage, AK
99501

Voice 907.271-2424

Section 106 Consultation Authorization and Instructions to Applicant

DATE: 10/17/2016

TO: City of Wrangell
Wrangell, Alaska

CRW Engineers/Solstice Alaska Consulting
Anchorage, AK

FROM: USDA Rural Development
510 L Street, Suite 410
Anchorage, AK

SUBJECT: Initiating Consultations under the Section 106 Process

In order for Rural Development to make a decision on the Wrangell application, an environmental review must first be completed. Among other items, this environmental review includes an analysis of the potential for your proposed project to impact sites that are listed or eligible for listing on the National Register of Historic Places. This analysis is required by Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations located at 36 CFR Part 800. NHPA requires Rural Development to work closely with the State Historic Preservation Office (SHPO), Tribes, and other consulting parties to take into account the effects of your project on historic properties and to attempt to find ways to avoid, minimize, or mitigate adverse effects, to the extent practicable.

Receipt of this letter from Rural Development authorizes you to initiate consultation under the Section 106 process. Please proceed as follows:

1. Review the attached letter (Attachment 1) and the required supporting documentation (Attachment 2).

2. Your Rural Development representative will:

- Answer any questions you have about completing the letter and the supporting documentation;
- Assist you in a preliminary description of the area of potential effects* (APE);
- Assist you in developing a preliminary list of the consulting parties.

Please completed the following:

1. Send the completed letter (Attachment 1) and the supporting documentation (contained in Attachment 2) to each of the consulting parties on the list (retain a dated copy of each letter for your records).
2. Include a copy of this Authorization/Instructions document with your letter to the SHPO and/or THPO.
3. Allow 30 days for receipt of comments. Incorporate any comments received into the environmental information/report (depending on Rural Development program) being prepared as part of your application to Rural Development, and attach copies of each letter you sent out and comments received to the environmental information/report.

The initiation of consultation is the first step in the Section 106 process. This authorization permits you, as an applicant (or, by proxy, the applicant's consultant), to initiate this consultation process and to assist Rural Development in collecting and evaluating information to facilitate timely compliance with Section 106 requirements. Rural Development remains legally responsible for making all formal determinations and findings under the Section 106 process.

Please be aware that some proposals require the services of a professional consultant. For example, an archeological survey may be needed before the Section 106 process can be concluded. Your Rural Development representative can provide you further guidance, if there is a need for such services. As an applicant, you are still responsible for the requirements of this letter, even though you have hired a consultant to assist you.

This authorization to initiate consultation under the Section 106 process does **not** constitute Rural Development approval of your request for financial assistance. All costs incurred by the applicant in compliance with the Section 106 process are incurred at the applicant's risk.

Note: Do **not** take any actions which might have an adverse effect on historic property or cultural resources until the Section 106 review process is completed. Section 110(k) of the National Historic Preservation Act **may prohibit** federal agencies from providing federal financial assistance to any applicant who "... with intent to avoid the requirements of Section 106, has intentionally significantly adversely affected a historic property..."

Please contact your Rural Development representative Tasha Deardorff at 907-271-2424 ext 118 or at tasha.deadorff@ak.usda.gov, should you have any questions.

Attachments: Attachments 1 and 2

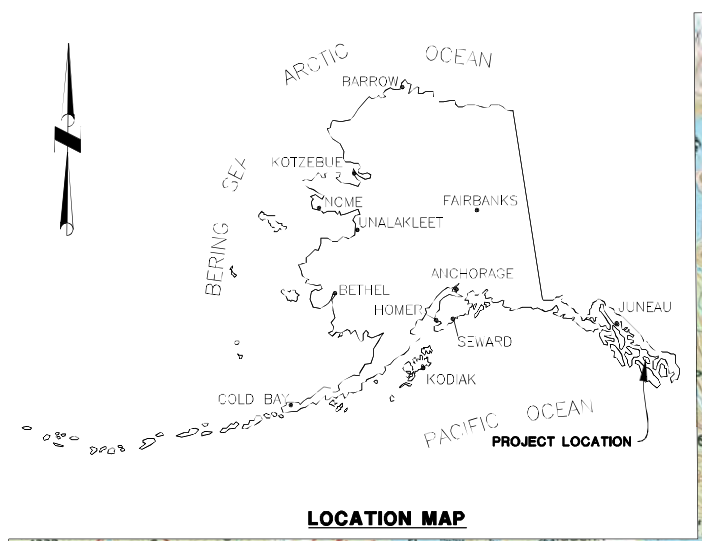
* The area of potential effects (APE) is defined by 36 CFR Part 800, Section 800.16(d) as follows: "Area of potential effects means the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking."

Attachment B

Figure 1. Vicinity Map

Figure 2. Proposed WTP Upgrades and Expansion

Figure 3. Proposed Gravity Sewer Line Location



LOCATION MAP

PROJECT LOCATION
CITY AND BOROUGH OF WRANGELL

FILE NAME: J:\Jobsdata\20901.00 Wrangell Water Treatment Pilot Study\00 CADD\01 Working Set\21 Civil\20901.00 Vicinity Map.dwg

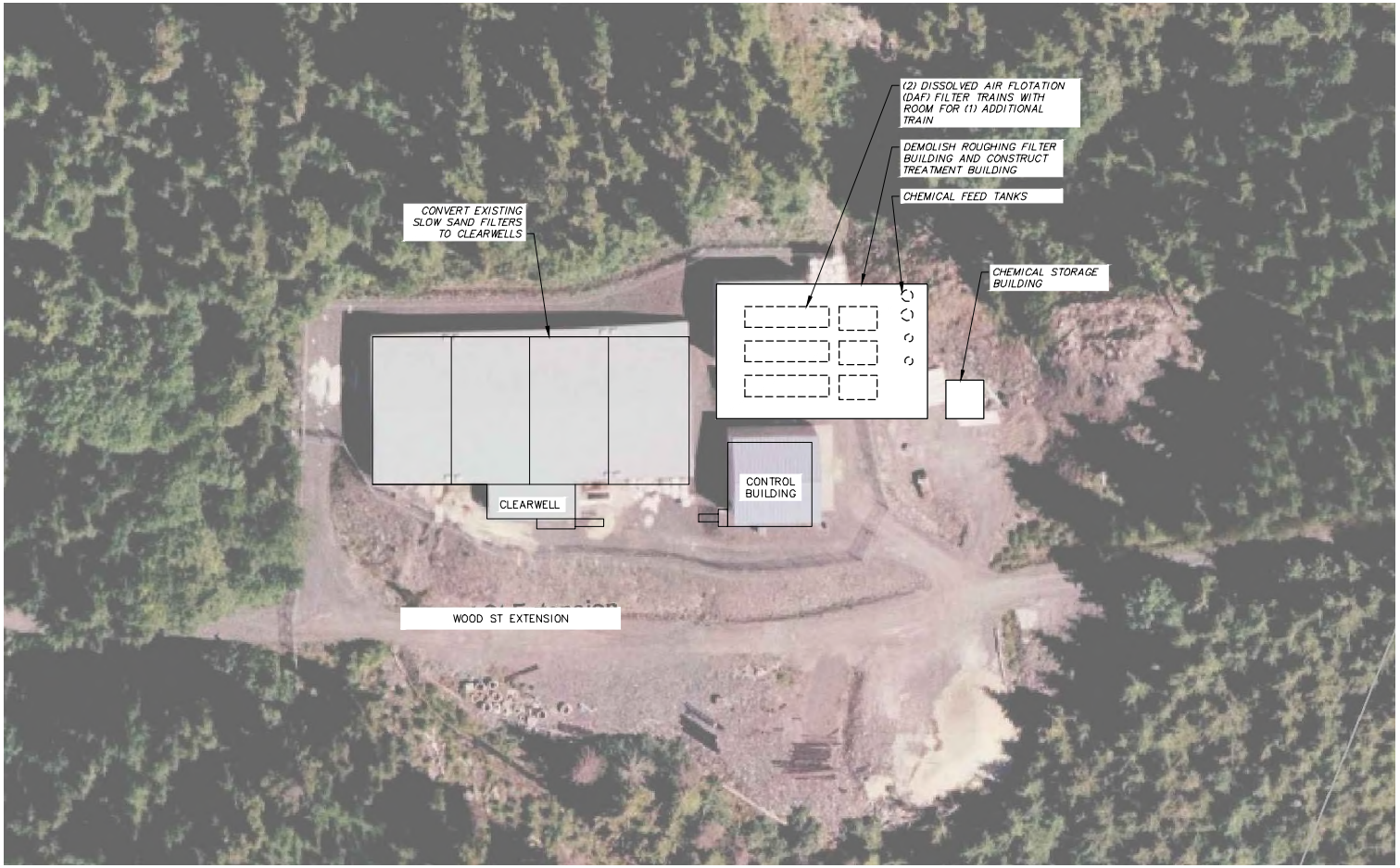
CRW ENGINEERING GROUP, LLC

Project:

STATUS: DRAFT

Wrangell WTP Upgrades Project
Figure 1. Vicinity Map

Project No:	20901.00
Drawn By:	WMK
Scale:	NTS
Date:	10/5/2016



30' 0 30' 60'

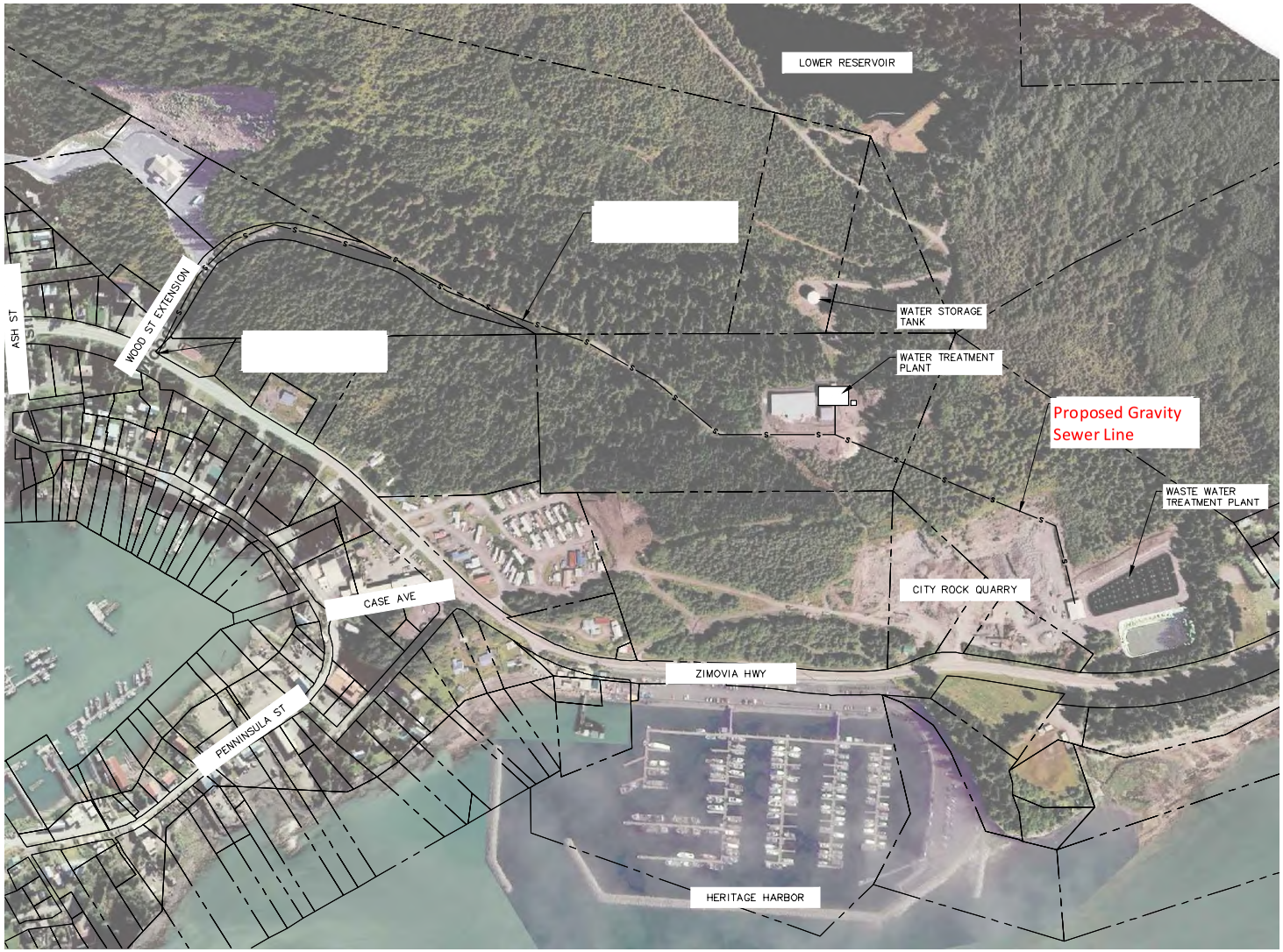
CRW ENGINEERING GROUP LLC
3940 ARCTIC BLVD, SUITE 300
ANCHORAGE, ALASKA 99503
PHONE: (907) 562-3252

PROJECT: 20901.00
STATUS: DRAFT

Wrangell WTP Upgrades Project
Figure 2. Proposed WTP Upgrades and Expansion

DATE: 10/13/16
SCALE: GRAPHIC

File: J:\Jobsdata\20901.00 Wrangell Water Treatment Pilot Study\00 CADD\02 Figures\05 PER\20901.00 ALT 4 DAF.dwg



200' 0 200' 400'

PROJECT:

STATUS: DRAFT

CRW ENGINEERING GROUP, LLC
3940 ARCTIC BLVD, SUITE 300
ANCHORAGE, ALASKA 99503
PHONE (907) 562-3252

Wrangell WTP Upgrades Project
Figure 3. Proposed Gravity Sewer Line Location

DATE 10/5/16

SCALE GRAPHIC

File: J:\Jobsdata\20901.00 Wrangell Water Treatment Pilot Study\00 CADD\02 Figures\05 PER\20901.00 Sewer Disposal Alternatives.dwg

Attachment C
USGS Map Petersburg B-2 SE

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

PETERSBURG (B-2) NE QUADRANGLE
ALASKA
1:25 000-SCALE SERIES (TOPOGRAPHIC)

PRODUCED BY THE UNITED STATES GEOLOGICAL SURVEY
CONTROL BY ..... USGS, NOS/NOAA
COMPILED FROM AERIA PHOTOGRAPHS TAKEN 1982
FIELD CHECKED ..... 1986. MAPEDITED 1992
PROJECTION ..... UNIVERSA TRANSVERSE MERCATOR
GRID: 1000-METER UNIVRSAL TRANSVERSE MERCATOR ..... ZONE 8
10,000 FOOT STATE GRID TICKS ..... ALASKA, ZONE 1
UTM GRID DECLINATION ..... 2°09 EAST
1992 MAGNETIC NORTH DECLINATION ..... 26/30 EAST
VERTICAL DATUM ..... NATIONAL GEODETIC VERTICAL DATUM OF 1929

The difference between NAD 27 and North American Datum of 1983 (NAD 83) fo 7.5 minute intersections is given in USGS Bulletin 1875. TheNAD 83 is shown by dashed corner ticks
Land lines represent unsurveyed and unmarked locations predetermined by tle Bureau of Land Mangement, Folio CR-15
Copper River Meridan
There may be private inholdings within te boundaries of any Federal and State Reservations shown on tis map
National Interest Lnds Conservation Act PL 96-487, Dec. 2 1980, are shown acompiled by the adminstering agencies

PROVISIONAL MAP
Produced fron original manuscript dravings, Infor-mation shown as of date of photography.

SCALE 1:25000
1 0 1 2 KILOMETERS
1000 0 1000 2000 METERS
1 0 1 MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10 000 FEET

CONTOUR INTERVAL 10 METERS
SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER
THE MEAN RANGE OF TIDE IS APPROXIMATELY 4.1 METERS
CONTROLELEVATIONS SHOWN TO TE NEAREST 0.1 METER
OTHERELEVATIONS SHOWN TO TE NEAREST METER
To convert meters to feet multiply by 3.2808
To convert feet to meters multiply by .3048

THIS MAP COMLIES WITH NATIONAL MAP ACCURACY STANDRDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, FAIRBANKS, ALASKA 99701
DENVER, COLORADO 80225 OR RESTON, VIRGINIA 22092

ALASKA
QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

1 Petersburg (C-2) SW
2 Petersburg (C-2) SE
3 Petersburg (C-1) SW
4 Petersburg (B-2) NW
5 Petersburg (B-1) NW
6 Petersburg (B-2) SW
7 Petersburg (B-2) SE
8 Petersburg (B-1) SW

ADJOINING 7.5' QUADRANGLE NAMES

CONTOURS AND ELEVATIONS IN METERS

ROAD LEGEND

Improved Road .....
Unmproved Road .....
Tril .....
State Route

PETERSBURG (B-2) NE, ALASKA
PROVISIONAL EDITION 1992

OCT 1992

Attachment D
Site Photographs: Images 1-13

These photographs were taken on October 19, 2016 and follow the proposed project area traveling downhill from the WTP to the wastewater treatment facility.

Image 1.

Image 2.

Image 3.

Image 4.

These photographs were taken on October 19, 2016 and follow the proposed project area traveling downhill from the WTP to the wastewater treatment facility.

Image 5.

Image 6.

Image 7.

Image 8.

These photographs were taken on October 19, 2016 and follow the proposed project area traveling downhill from the WTP to the wastewater treatment facility.

Image 9.

Image 10.

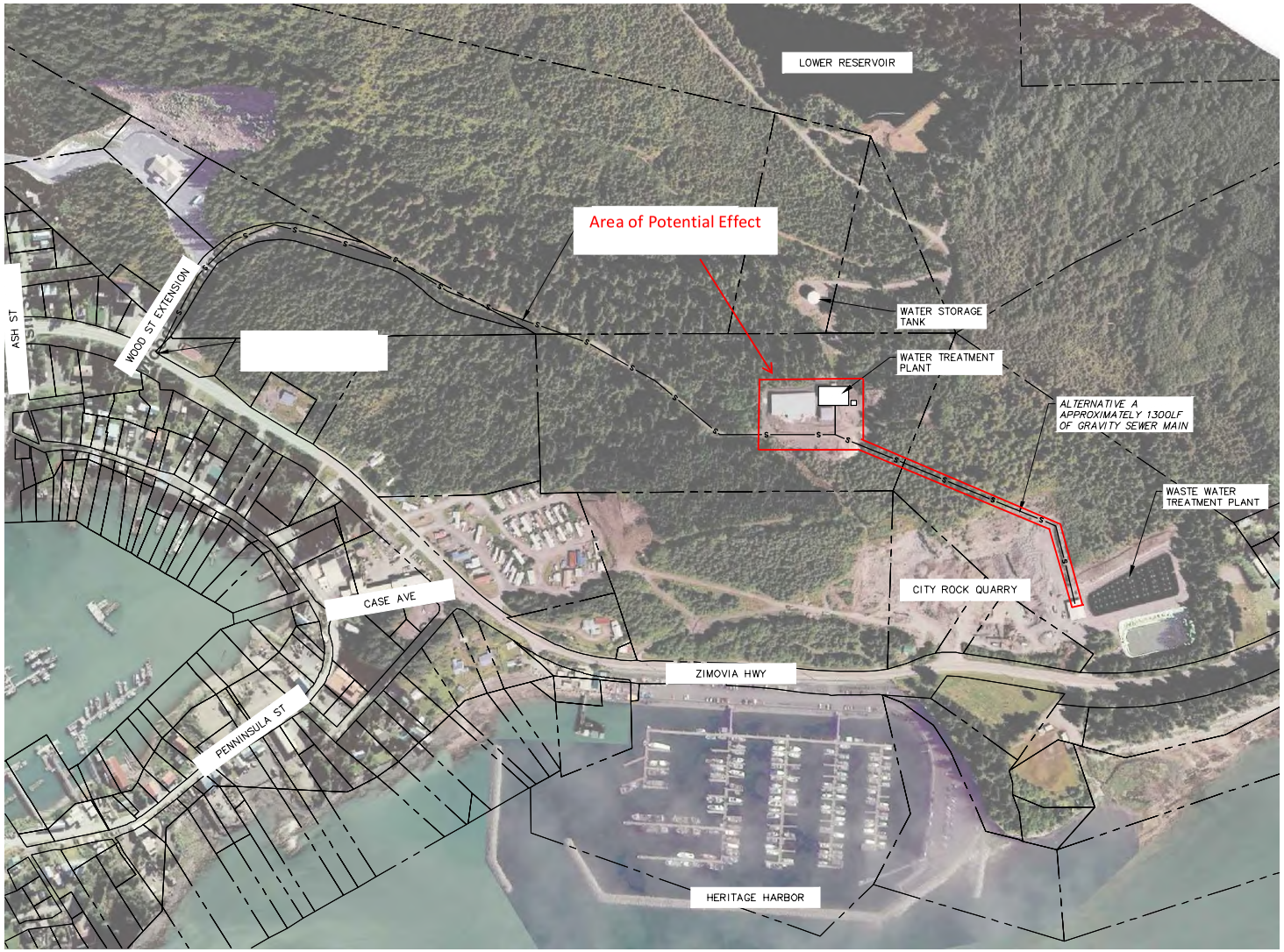
These photographs were taken on October 19, 2016 and follow the proposed project area traveling downhill from the WTP to the wastewater treatment facility. The wastewater treatment facility treatment facility can be seen in these photographs.

Image 11.

Image 12.

Image 13.

Attachment E
Area of Potential Effect Figure



PROJECT:

STATUS: DRAFT

CRW ENGINEERING GROUP LLC
3940 ARCTIC BLVD. SUITE 300
ANCHORAGE, ALASKA 99503
PHONE (907) 562-3252

Wrangell WTP Upgrades Project
Area of Potential Effect

DATE 10/5/16

SCALE GRAPHIC

File: J:\Jobsdata\20901.00 Wrangell Water Treatment Pilot Study\00 CADD\02 Figures\05 PER\20901.00 Sewer Disposal Alternatives.dwg

Attachment F
Cultural Resources Literature Review Memorandum
Prepared by Cultural Resources Consultants, LLC. October 17, 2016

CULTURAL RESOURCE CONSULTANTS LLC

3504 East 67th Avenue
Anchorage, Alaska 99507
(907) 349-3445

October 17, 2016

Wrangell Drinking Water Treatment Plant Pilot Study Project

Introduction

The following briefly summarizes the results of a cultural resources literature review for the Wrangell Drinking Water Treatment Plant Pilot Study Project. The project would be located in Wrangell, Alaska, east of Zimovia Highway near Township 62 South, Range 84 East, Sections 30 and 31; and Township 63 South, Range 84 East, Section 6 of the Copper River Meridian, USGS quadrangle Petersburg B-2 NE. The middle of project is at about 56.4591642766 N, -132.377090082 E.

Project Description

The City & Borough of Wrangell proposes improvements to its water treatment plant consisting of construction of a wastewater pipe and an expansion and remodel of the treatment plant buildings (Figure 1). The wastewater pipe would be either above or below ground, depending on alternatives selected. For one alternative, the gravity sewer main pipe would be approximately 1,350 linear feet (LF) in length and would run downhill from the existing water treatment plant to connect to the existing wastewater treatment plant. For the other alternative, the gravity sewer main pipe would be approximately 2,900 LF and would be constructed along the existing road to connect to the existing gravity sewer main. Various alternatives are being considered for the water treatment plant, but all options involve expansion and construction of new best technology facilities (e.g., a backwash clarifier and multimedia treatment system or additional roughing and sand filters).

Known Sites in the General Project Area

There are no known sites within the project limits listed in the Alaska Heritage Resource Survey (AHRS). West of the general project area, the closest known sites are a reported petroglyph (PET-00033), the Redmen's Cemetery and Native Cemetery (PET-00099), Eli Urho Kanerva Boat Shed and Warehouse (PET-00330), and Fremin Midden (PET-00483). To the east are two Wrangell water supply dams, PET-00571 and PET-00572.

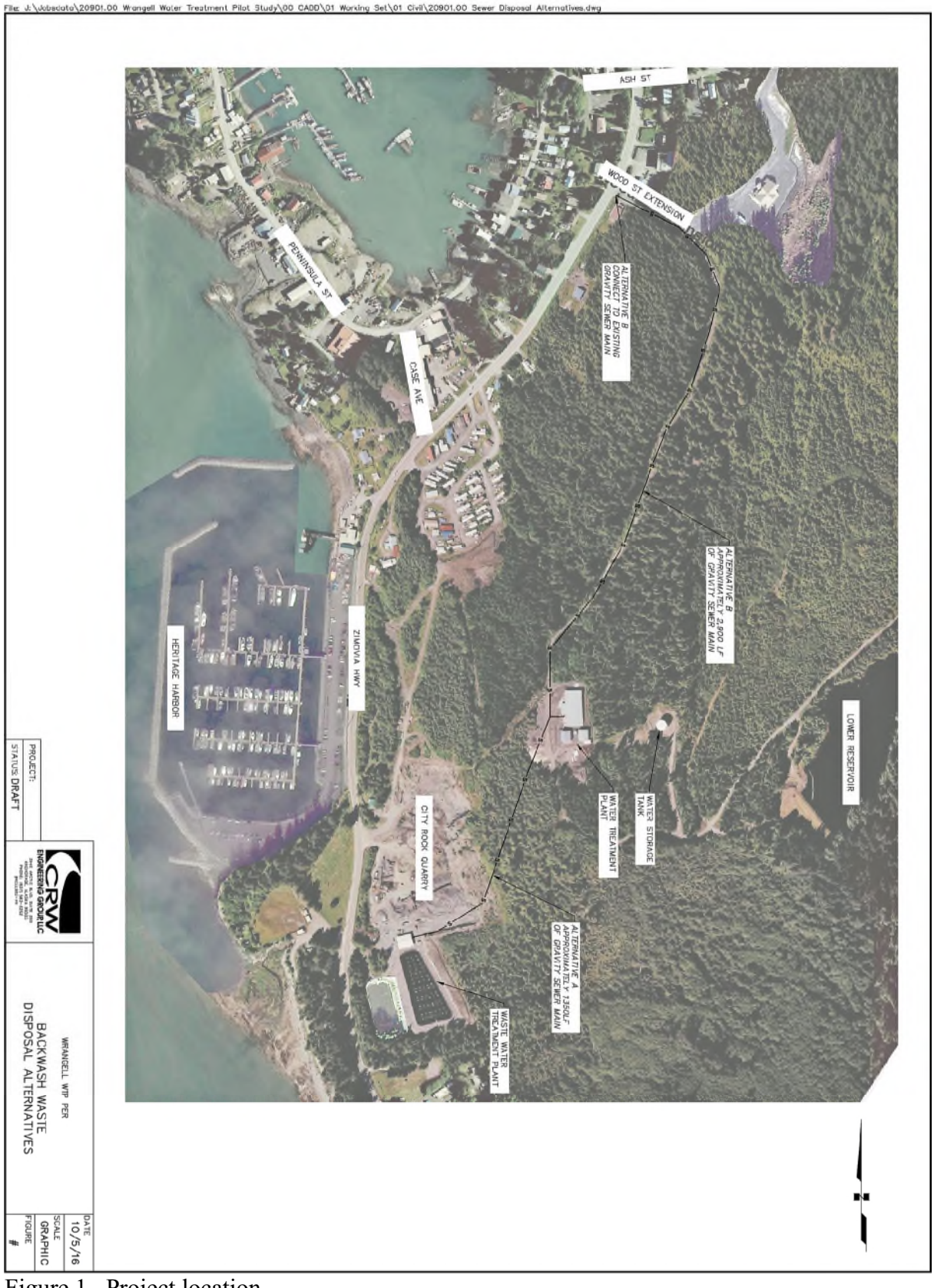


Figure 1. Project location.

Recommendations

There are no known cultural resources within the footprint of the proposed project, although this specific locale does not appear to have been archaeologically surveyed. However, because the proposed project is in an area where there is a low probability for undiscovered historic and archaeological sites, Cultural Resource Consultants LLC does not recommend an archaeological field survey. Among other criteria, Appendix D of the 2010 programmatic agreement[1] between the USDA Forest Service, Advisory Council on Historic Preservation, and Alaska State Historic Preservation Officer, defines areas of high archaeological sensitivity as "all land between mean lower low water and 100 ft. of elevation above mean high water, with no consideration of slope;" "lake and stream systems containing, or known to have contained, anadromous fish runs; including a focus on barrier falls locations in such systems;" and "elevated/fossil marine, river, and lake terrace systems." The project area generally is above the 100-foot contour, it is not near the mouth of any creeks, and the topography of the area too steep to be considered a marine terrace.

[1] *Third Amended Programmatic Agreement Among the USDA Forest Service, Alaska Region, the Advisory Council on Historic Preservation, and the Alaska State Historic Preservation Officer Regarding Heritage Resource Management on National Forests in the State of Alaska.*