FINAL ENVIRONMENTAL ASSESSMENT (EA)
FOR
MANAGEMENT OF WATER TREATMENT AT JOINT BASE ELMENDORF-RICHARDSON

PREPARED For:

Department of the Air Force

October 2023

Letters or other written comments provided may be published in the Final EA. As required by law, substantive comments will be addressed in the Final EA and made available to the public. Any personal information provided will be kept confidential. Private addresses will be compiled to develop a mailing list for those requesting copies of the Final EA. However, only the names of the individuals making comments and their specific comments will be disclosed. Personal home addresses and phone numbers will not be published in the Final EA.

FINDING OF NO SIGNIFICANT IMPACT (FONSI)

MANAGEMENT OF WATER TREATMENT AT JOINT BASE ELMENDORF-RICHARDSON

Pursuant to provisions of the National Environmental Policy Act (NEPA), Title 42 United States Code (USC) Sections 4321 to 4347, implemented by Council on Environmental Quality (CEQ) Regulations, Title 40, Code of Federal Regulations (CFR) § 1500-1508, and 32 CFR § 989, Environmental Impact Analysis Process, the U.S. Air Force (USAF) assessed the potential environmental consequences associated with constructing a new Water Treatment Plant (WTP) and dismantling and remediating the existing WTP at Joint Base Elmendorf-Richardson (JBER), Alaska.

The purpose of the Proposed Action is to meet obligations to provide safe drinking water to JBER facilities, including housing and administration facilities. PCBs in coatings, asbestos in building materials, and lead in paint have been detected throughout the existing water treatment facility at concentrations exceeding regulatory criteria, although no safe drinking water thresholds have been exceeded in water tested following treatment. The Proposed Action is needed to consistently provide safe and reliable drinking water that can accommodate existing and future peak demand, while meeting Environmental Protection Agency (EPA) and Alaska Department of Environmental Conservation (ADEC) drinking water regulations at JBER. In addition, the Proposed Action is needed to meet requirements under the Toxic Substances Control Act (TSCA).

The Environmental Assessment (EA), incorporated by reference into this finding, analyzes the potential environmental consequences of activities associated with the Management of Water Treatment at JBER project and provides environmental protection measures to avoid or reduce adverse environmental impacts.

The EA considers all potential impacts of Alternative 1 (Construct New WTP and Demolish Existing WTP) and the No-Action Alternative. The EA also considers cumulative environmental impacts with other projects in the Region of Influence.

ALTERNATIVE 1 (Preferred Alternative)

Under the Proposed Action, the owner of JBER's potable water utility, Doyon Utilities, LLC (DU), would construct a new, primarily gravity-fed WTP that meets JBER's current and expected demand for drinking water, including firefighting capabilities, during all conditions. To use the existing pipes from the raw water source in Ship Creek and two existing 1.5-million-gallon water tanks, the proposed new WTP would be built approximately 250-feet northwest of the existing WTP and adjacent to the existing water storage tanks. The project would occur within a new 8-ft-tall, fenced area of about 13,000 square feet (0.3 acres).

After the proposed new WTP has been commissioned by ADEC and is fully operational, the existing WTP would be dismantled and properly disposed, and the site would be remediated following applicable ADEC, EPA, and US Occupational Safety and Health Administration standards and methods for dismantling, segregating, and disposing building materials, depending on the nature of the waste (non-hazardous or hazardous).

NO ACTION ALTERNATIVE

Under the No Action Alternative, the Preferred Alternative (or any of the action alternatives) would not occur, and the current WTP would continue to operate and be maintained without any changes.

The No Action Alternative would not meet JBER's existing average and peak demand water requirements, since the existing WTP must process drinking water more slowly to meet present-day drinking water standards. The No Action Alternative may also not withstand outside threats and may be unable to provide adequate firefighting flow and pressure. The No Action Alternative would not meet the EPA's Polychlorinated Biphenyls (PCB) cleanup requirements and would have to operate under and comply with interim operating measures and sampling procedures outlined by the EPA. Once the interim measures expire, the EPA could require the WTP to cease operation because of the risk of PCB exposure to JBER's population and on-site workers.

SUMMARY OF FINDINGS

The analyses of the affected environment and environmental consequences of the Preferred Alternative concluded that by implementing standard environmental protection measures during construction and demolition activities, adverse effects to the environment were not likely to occur. This includes the execution of conditions stipulated in a Memorandum of Agreement (MOA) with the State Historic Preservation Office regarding the demolition of the historic WTP.

The USAF has concluded that significant adverse effects are not likely to result to the following resources as a result of the Preferred Alternative: Air installation compatible use zone/land use/noise; biological/natural resources, air quality, water resources, earth resources (geology/soils); socioeconomic resources/environmental justice; and climate and climate change. Significant adverse cumulative impacts are not anticipated to result from activities associated with the Preferred Alternative when considered with past, present, or reasonably foreseeable future projects.

A summary of resources for which an adverse effect finding has been mitigated or standard environmental protection measures are identified to support the finding of no significant impact is presented below.

Safety And Occupational Health. WTP workers' health and safety would be improved with construction of the proposed new WTP. While WTP construction and demolition activities would present typical construction site safety risks to workers, which are minimized by complying with occupational health and safety regulations and by implementing standard Best Management Practices, demolition of the existing WTP would increase the short-term risk associated with exposure to PCBs, asbestos-containing materials, and lead-based paints during their removal. To avoid exposure, contractors would be required to establish and maintain employee safety programs. Construction and demolition activities would result in short-term, minor adverse impacts to contractor safety within the project area which would be mitigated by adhering to regulatory requirements and approved safety plans.

Hazardous Materials/Waste. Construction of the proposed new WTP would involve the use of common hazardous materials and petroleum products in construction vehicles and equipment. To ensure the safe handling of hazardous and other waste materials and minimize the potential for spills or accidents during construction, contractors would be required to manage and dispose of all hazardous and nonhazardous materials and wastes in compliance with applicable regulations, USAF policy and procedures, the JBER Integrated Hazardous Material Plan, and the JBER Emergency Management Plan. In addition, all spills and encounters with historic spills will be reported to JBER Fire via 911, per the JBER Spill Management Plan.

During structural demolition of the WTP, hazardous materials will be managed in accordance with applicable EPA and ADEC regulations and agency-approved work plans and USAF and JBER policies and procedures. Ultimately, demolition activities would result in long-term, minor positive impacts to hazardous materials and wastes that exist within the WTP, since hazardous waste would be removed from the WTP site and placed in approved waste facilities.

Cultural Resources*.* Implementation of the Preferred Alternative will adversely and permanently affect the existing WTP, which is a historic property eligible for listing in the National Register of Historic Places. An MOA was prepared to resolve these adverse effects under 36 CFR Part 800. Mitigation established in the MOA includes documentation to Historic American Building Survey Level III standards (architectural drawings, photographs, and written description submitted to the Library of Congress). The MOA also includes installing outdoor interpretive panels discussing the architectural significance of the WTP and how it provided water to JBER. Although the impacts to historic properties will be severe, adverse, and long-term, by implementing the MOA, the impacts to cultural resources from Preferred Alternative will be appropriately mitigated to insignificance. No Alaska Native sites or resources are anticipated to be impacted.

PUBLIC INVOLVEMENT

A Notice of Availability (NOA) of the Draft EA and FONSI was published in the Anchorage Daily News and Mat-Su Valley Frontiersman, announcing the availability of the Draft EA for review on April 12, 2023 for a period of 30-days, ending on May 11, 2023. Comments were received from Alaska Department of Environmental Conservation acknowledging that the proposed footprint would impact a known DEC contaminated site and that coordination with DEC was required. The site and necessary coordination were included in Section 3.2.3. Comments were also received from Anchorage Water and Wastewater Utility (AWWU) specifically regarding dismissal of Alternative 4. Clarifications were made to the analysis of Alternative 4 in Section 2.5.3. AWWU's comments also identified inconsistency in the analysis of redundancy, which should have been associated with Selection Standard 4, and was corrected in Section 2.2. A summary of the changes made in the Final EA to address substantive comments is included in Section 1.5.3.

FINDING OF NO SIGNIFICANT IMPACT (FONSI)

Based on my review of the facts and analyses contained in the attached EA, conducted under the provisions of NEPA, CEQ Regulations, and 32 CFR §989, I conclude that the Preferred Alternative 1 – Construct New WTP and Demolish Existing WTP would not have significant adverse environmental impact, either by itself or cumulatively with other known projects. Accordingly, an Environmental Impact Statement is not required. The signing of this Finding of No Significant Impact completes the environmental impact analysis process.

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10 November, 2023

KEVIN J. OSBORNE, Colonel, USAF

HQ PACAF/A4C

Date

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GLOSSARY OF ABBREVIATIONS AND ACRONYMS

ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish and Game
ADNR	Alaska Department of Natural Resources
ACM	Asbestos-Containing Materials
ACAM	USAF Air Conformity Applicability Model
APDES	Alaska Pollutant Discharge Elimination System
APE	Area of Potential Effect
AQCR	Air Quality Control Region
AQIA	air quality impact analysis
AT	anti-terrorism
AWWU	Anchorage Water and Wastewater Utility
BMP	Best Management Practice
CAP	Criteria Air pollutants
CEMML	Center for Environmental Management of Military Lands
CFR	Code of Federal Regulations
CO	carbon monoxide
CO2e	carbon dioxide equivalent
CGP	Construction General Permit
CHPP	Central Heat and Power Plant
CVTC	Chickaloon Village Traditional Council
DoD	Department of Defense
DU	Doyon Utilities, LLC
EA	Environmental Assessment
EO	Executive Order

EPA	Environmental Protection Agency
°F	degrees Fahrenheit
FONSI	Finding of No Significant Impact
GHG	greenhouse gas
GWP	global warming potential
JBER	Joint Base Elmendorf-Richardson
IICEP	Interagency Intergovernmental Coordination for Environmental Planning
ITLO	Installation Tribal Liaison Officer
LBP	Lead-Based Paint
MGD	Million gallons per day
MMBtu/hr	British thermal units per hour
MMT	million metric tons
MOA	Memorandum of Agreement
MSGP	Multi-Sector General Permit
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NFPA	National Fire Protection Association
NH3	ammonia
NO_2	nitrogen dioxide
NOA	Notice of Availability
O_3	ozone
OSHA	US Occupational Safety and Health Administration
PACAF	Pacific Air Forces
Pb	lead

PCB	Polychlorinated Biphenyls
PFAS/PFOA	Perfluorooctane Sulfonate and Perfluorooctanoic Acid
PM	particulate matter
$PM_{2.5}$	less than or equal to 2.5 microns in diameter
PM_{10}	with less than or equal to 10 microns in diameter
PPM	parts per million
ROI	region of influence
SHPO	State Historic Preservation Office
SO_2	sulfur dioxide
SWPPP	Storm Water Pollution Prevention Plan
TSCA	Toxic Substances Control Act
TSDF	Treatment, Storage and Disposal Facility
USAF	United States Air Force
UST	underground storage tank
WTP	Water Treatment Plant

1.0 PURPOSE OF AND NEED FOR ACTION

1.1 INTRODUCTION

This environmental assessment (EA) evaluates the potential environmental effects of implementing alternative actions to provide safe drinking water to Joint Base Elmendorf-Richardson (JBER). The existing JBER Water Treatment Plant (WTP) became operational in 1957. Numerous upgrades over the past 65 years have occurred; however, much of the WTP's components have exceeded their design life and need to be replaced. During planning for the WTP renovation, building materials were sampled to evaluate for the potential presence of hazardous materials. Sampling identified polychlorinated biphenyls (PCB), asbestos-containing materials (ACM), and lead-based paint (LBP). Since the discovery of the PCBs, Doyon Utilities, LLC (DU) has worked with the U.S. Environmental Protection Agency (EPA) to address interim and long-term concerns to ensure safe drinking water continues to be provided to JBER.

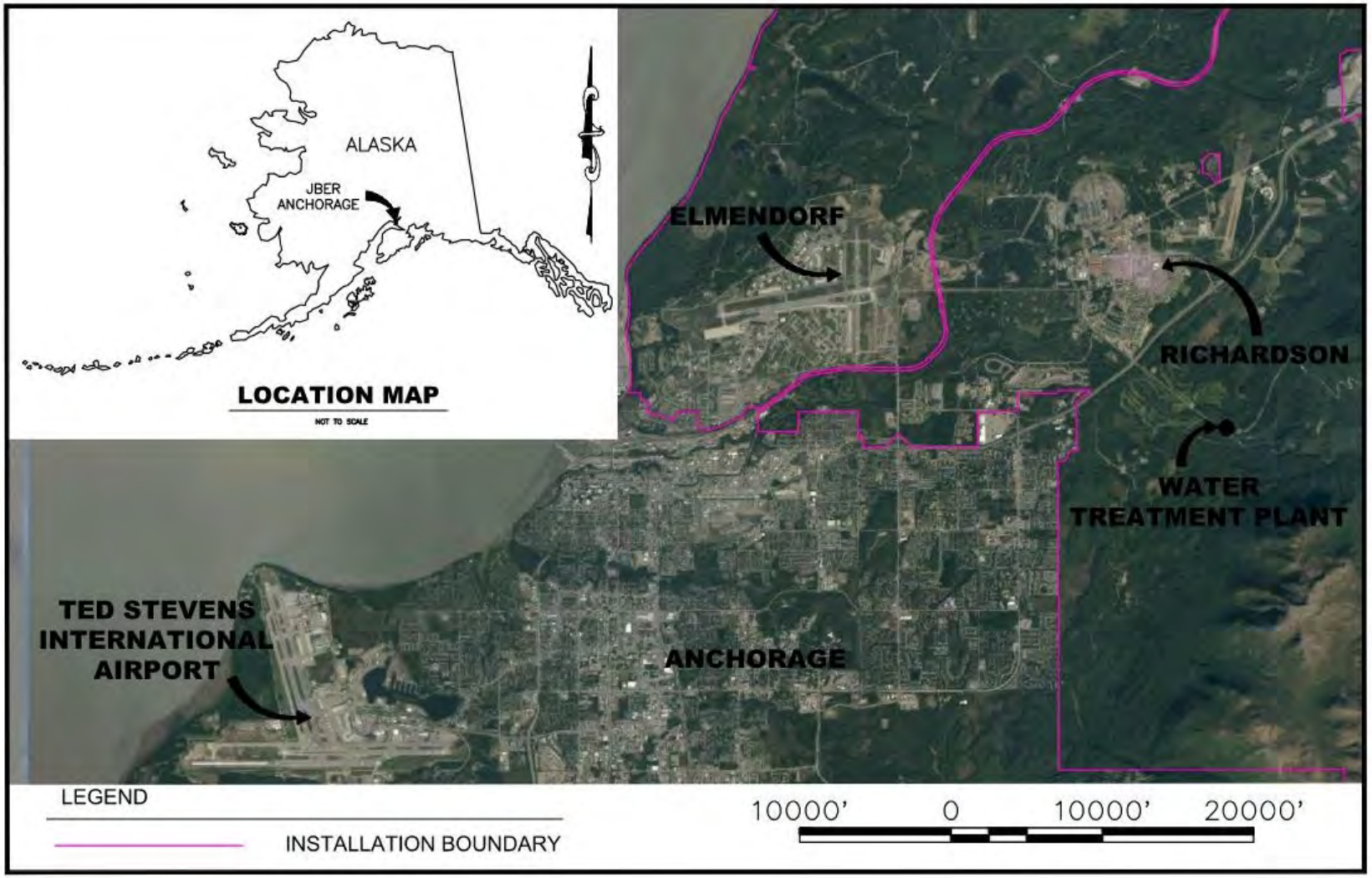
Located north and east of Anchorage, Alaska, JBER consists of the former Elmendorf Airfield and U.S. Army lands formerly known as Fort Richardson (USAF 2020c). Personnel began working at Fort Richardson in February 1941; after World War II, the Army moved its operation to the new Fort Richardson (Figure 1). The USAF assumed control of Elmendorf Airfield, part of the original Fort Richardson, and renamed it Elmendorf Air Force Base, gaining full ownership of Elmendorf and its facilities in 1951. In 2010, Fort Richardson transitioned as part of the Joint Basing initiative. Fort Richardson joined Elmendorf Air Force Base, and the installation became known as JBER.

The Department of Defense (DoD) previously owned and operated four utility systems on Fort Richardson, including potable water distribution, wastewater collection, natural gas distribution, and electric distribution. In 2005, the U.S. Army began a utility privatization (UP) initiative pursuant to 10 USC § 2688. Under the UP, the Army would transfer ownership of these utilities to a third party which would then be obligated to purchase, operate, maintain, and extend the systems as required and in accordance with applicable laws and regulations. DU, along with other bidders, submitted bids for the work. DU was selected and in September of 2007, DU and the DOD entered a 50-year UP contract for regulated services.

The JBER WTP provides water to two main public water systems; JBER-Richardson (AK2212039) and JBER-Elmendorf (AK2211423). As the water purveyor, DU manages the WTP and distribution lines on the JBER-Richardson side and provides water to the JBER-Elmendorf side of the installation. Under the terms of the contracts and its tariffs with the Commission, DU's service area only includes JBER-Richardson. The 673d Civil Engineer Group manages the distribution lines on the JBER-Elmendorf side of the installation (JBER 2022b). The two systems are connected and in essence operate as a continuous system from the WTP to the consumer (**Figure 1-1**). The combined JBER-Richardson and JBER-Elmendorf public water systems serve more than 40,000 persons.

The DU-DoD Contract requires that DU's facilities and operations remain compliant with all laws and regulations, including environmental regulations. In addition, DU holds the Alaska Department of Environmental Conservation (ADEC) approval to operate the water system and must ensure its operations meet the requirements of its permit and State of Alaska and Federal environmental laws and regulations.

Figure 1-1. JBER WTP Vicinity Map



The JBER-Richardson Potable Water Distribution System consists of wells, treatment equipment, storage tanks, pumps, ancillary structures, fire hydrants, valves, meters, and piping. JBER-Richardson has two raw water sources: one is the Ship Creek reservoir and the other includes three supply wells located on JBER-Richardson (**Figure 1-2**). The WTP receives raw water from Ship Creek Dam via a 20-inch water line. The JBER WTP is a conventional water treatment plant that employs the processes of coagulation, flocculation, sedimentation, filtration, and disinfection. The treatment processes are housed in one building. As the water leaves the WTP, final treatment is a disinfection process; it is stored nearby in two, 1.5-million-gallon storage tanks prior to distribution (Figure 1-3). Drinking water is then delivered to JBER-Richardson via a distribution system consisting of 44.7 linear miles of pipe, installed to an average depth of 10 feet below ground surface. The average demand for the entire JBER installation is 3.0 million gallons per day (MGD), and the peak demand is 7.5 MGD.

EPA and ADEC drinking water regulations have changed since the WTP was originally constructed. While the WTP was once able to process enough water to always meet average and peak drinking water demand while meeting water quality regulations, it currently cannot meet EPA and ADEC regulatory drinking water standards and meet the peak production requirement of 7.5 MGD. When the existing WTP is unable to meet JBER's existing average and peak demand water requirements, including adequate firefighting flow and pressures, the system must rely on three potable water wells constructed in the 1950s to prevent water demand from exceeding production.

PCBs in coatings, asbestos in building materials, and lead in paint have been detected throughout the WTP building at concentrations exceeding regulatory criteria. Although no safe drinking water thresholds have been exceeded following treatment for drinking, traces of PCBs below regulatory thresholds have been detected, and there is potential to further contaminate drinking water above the EPA's regulatory standard. Because operation of the WTP does not meet the requirements of the Toxic Substances Control Act (TSCA), the EPA has directed DU to ensure resolution of the WTP's contamination issues by October 2025 (EPA 2022c).

1.2 PURPOSE OF THE ACTION

The purpose of the Proposed Action is to meet obligations to provide safe drinking water to JBER facilities, including housing and administration facilities.

1.3 NEED FOR THE ACTION

The Proposed Action is needed to consistently provide safe and reliable drinking water to accommodate existing and future peak demand, while meeting EPA and ADEC drinking water regulations at JBER. In addition, the Proposed Action is needed for DU to comply with EPA's requirements under TSCA.

1.4 DECISION TO BE MADE

The decision to be made is the selection of an alternative for Pacific Air Forces (PACAF) to meet obligations to provide safe drinking water to JBER facilities. The decision options are:

1) Continue with current operations of the existing WTP (the No Action Alternative);
2) Select an alternative and prepare a Finding of No Significant Impact (FONSI); or
3) Prepare an Environmental Impact Statement if the alternatives would result in significant environmental impacts.

Figure 1-2. JBER Water Supply System Overview Map

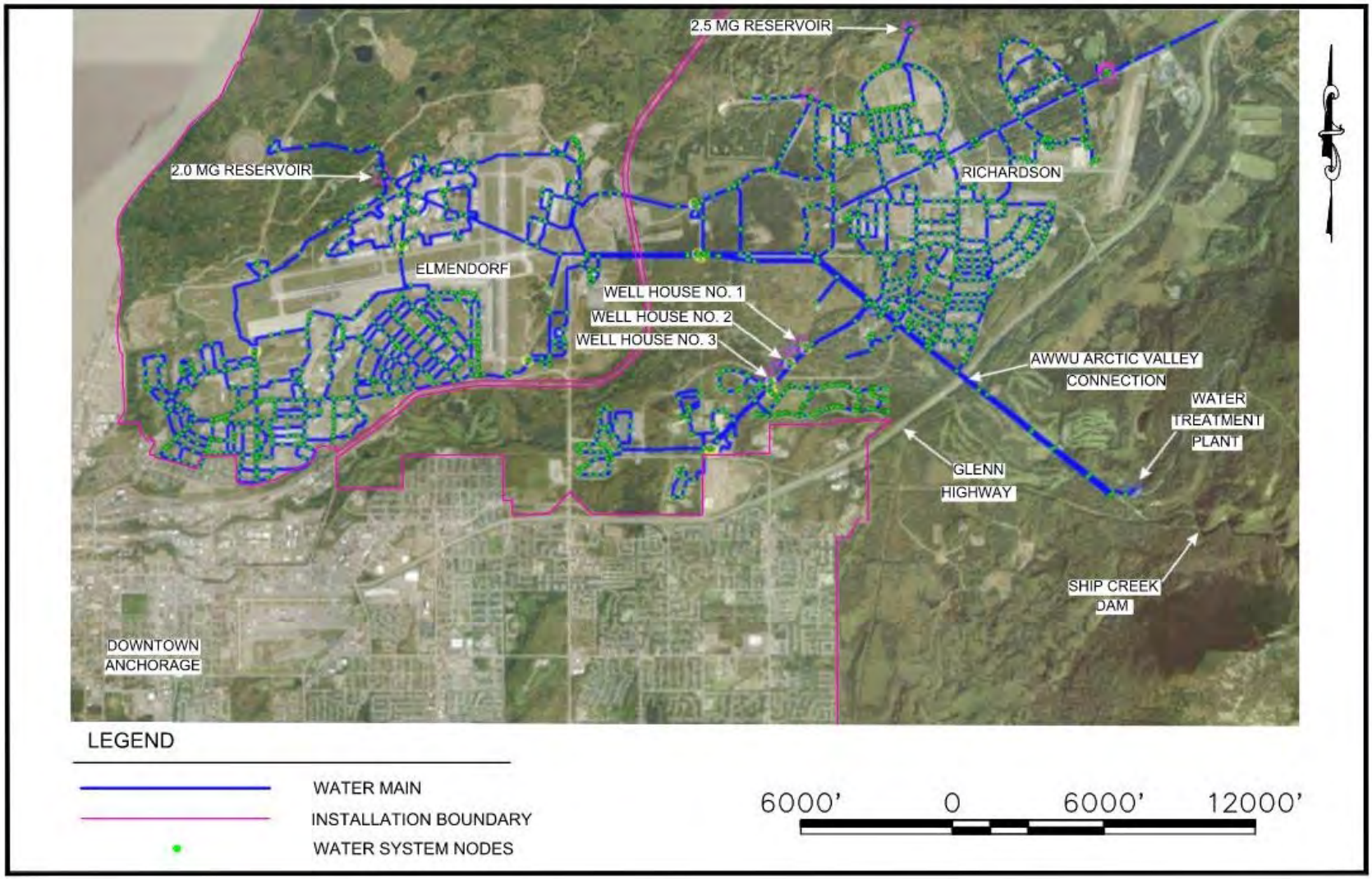
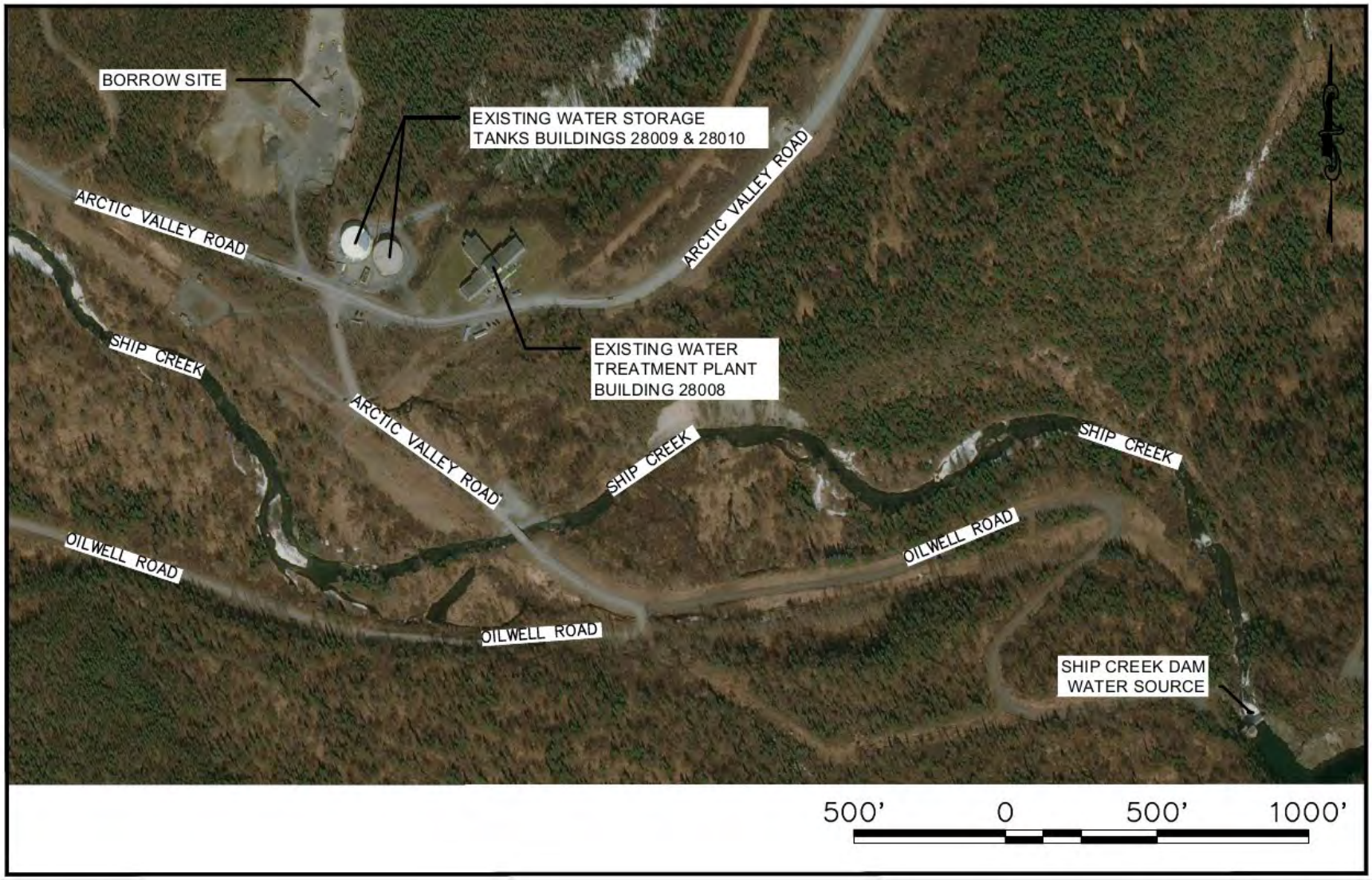


Figure 1-3. JBER WTP and Associated Features



1.5 INTERGOVERNMENTAL COORDINATION/CONSULTATIONS

1.5.1 Interagency and Intergovernmental Coordination and Consultations

Federal, state, and local agencies with jurisdiction that could be affected by the alternative actions were notified and consulted during the development of this EA.

Appendix A contains the list of agencies consulted during this analysis and copies of correspondence.

Coordination with the State Historic Preservation Officer (SHPO) was initiated 28 January 2022. Based on the potential for Adverse Effects to Historic Properties, a Memorandum of Agreement (MOA) was executed on 27 April 2023.

1.5.2 Government to Government Consultations

Consistent with DoD Instruction 4710.02, *Interactions with Federally-Recognized Tribes*, and AFI 90-2002, *Air Force Interaction with Federally-Recognized Tribes*, Consultation and Coordination with Indian Tribal Governments (6 November 2000), directs federal agencies to coordinate and consult with Federally Recognized Tribes whose interests might be directly and substantially affected by activities on federally administered lands. To comply with legal mandates, Federally Recognized Tribes that are affiliated historically with JBER were invited to consult on all proposed undertakings that have a potential to affect properties of cultural, historical, or religious significance to the Tribes. The tribal coordination process is distinct from National Environmental Policy Act (NEPA) consultation or the Interagency Intergovernmental Coordination for Environmental Planning (IICEP) processes and requires separate notification of all relevant Tribes. The timelines for tribal consultation are also distinct from those of intergovernmental consultations. The JBER point-of-contact for consultation with Alaska Native Tribes is the Installation Tribal Liaison Officer (ITLO). The JBER point-of-contact for consultation with the Advisory Council on Historic Preservation is the Cultural Resources Manager.

The Alaska Native Tribal governments that were coordinated with regarding this action are listed in Appendix A. Email correspondence was sent on 3 April 2023 notifying Alaska Native Tribes of the availability of the Draft EA and Draft FONSI. JBER confirmed that email correspondence was the preferred communication method and confirmed receipt of correspondence by each Tribal entity. An offer to Alaska Native Tribes was made for Government to Government consultation, however, no meeting was requested.

1.5.3 Public and Agency Review of EA

A Notice of Availability (NOA) of the Draft EA and FONSI was published in the Anchorage Daily News and Mat-Su Valley Frontiersman, announcing the availability of the Draft EA for review on April 12, 2023. The NOA invited the public to review and comment on the Draft EA. The public and agency review period will end on May 11, 2023. Public and agency comments received during the public comment period for the Draft EA are provided in Appendix A.

Copies of the Draft EA and draft FONSI were made available for review at the following locations:

Chugiak-Eagle River Library	Z.J. Loussac Library	JBER Library

12001 Business Blvd. #176 Eagle River Town Center Eagle River, AK 99577	3600 Denali St. Anchorage, AK 99503	Army Education Center Bldg. 7, Chilkoot Ave. JBER, AK 99505

Notification of the availability of the draft EA were sent electronically to those listed in Appendix A, Tables 1-5. Comments received are included in Appendix A. Comments were received from Alaska Department of Environmental Conservation acknowledging that the proposed footprint would impact a known DEC contaminated site and that coordination with DEC was required. The site and necessary coordination were included in Section 3.2.3.

Additionally, comments were received from Anchorage Water and Wastewater Utility (AWWU) specifically regarding dismissal of Alternative 4, pertaining to AWWU. Clarifications were made to the analysis of Alternative 4 in Section 2.5.3. AWWU's comments also identified inconsistency in the analysis of redundancy, which should have been associated with Selection Standard 4, and was corrected in Section 2.2. A summary of the changes made in the Final EA to address substantive comments from AWWU is included below.

Alternative 4 is more correctly titled "Purchase bulk water from AWWU and Demolish Existing WTP". This addresses poor wording and confusion over the intended scope of Alternative 4 in the original draft. Whether or not AWWU would be capable of meeting JBER's peak water demand as well as the peak demand of its permitted service area was derived originally from information contained in the AWWU Master Plan. This was not the most current, publicly available information, according to the letter from AWWU. The 2022 regulatory filings corroborated AWWU's claim that they had enough additional production capability to meet the peak capacity needs for JBER and their existing service area, under normal circumstances and thus meet selection standard 1. Table 1 and the analysis in 2.5.3 were corrected accordingly. The Draft EA was unclear in reference to whether, under Alternative 4, the existing WTP would be demolished or stabilized, which incorrectly led to Alternative 4 failing selection standard 3. Table 1 and the analysis in 2.5.3 were corrected to indicate that Alternative 4 would meet selection standard 3. The analysis of redundancy was incorrectly discussed in Alternative 4 as a component of selection standard 1. Redundancy is a fundamental component of resiliency and the ability to withstand outside threats, which is Selection Standard 4. A brief clarification was made in the description of the selection standard in Section 2.3 to correctly recognize redundancy as a part of Selection Standard 4. Further, the discussion of redundancy was moved where applicable to Selection Standard 4 in Section 2.5.3. The comment from AWWU also raises economic and other factors that may have been relevant if Alternative 4 were carried forward for analysis. However, since Alternative 4 fails to meet selection standards 4 and 6, those aspects of AWWU's comment are not discussed any further in this assessment.

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 PROPOSED ACTION

DU is proposing to meet its obligations to provide enough safe drinking water to JBER facilities in order to dependably and continuously meet current and future demand in support of JBER's mission. The existing WTP, constructed in the early 1950s, is currently unable to meet the peak demand for safe drinking water and may be at risk for failing due to unanticipated circumstances. In addition, PCBs in coatings, asbestos in building materials, and lead in paint have been detected throughout the WTP. Although no safe drinking water thresholds have been exceeded, some water samples taken at the end of the drinking water treatment process have indicated the presence of PCBs in the drinking water. The EPA has directed DU to ensure resolution of this issue by October 2025.

2.2 SELECTION STANDARDS

The NEPA and Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations [CFR] § 1502.14(a), 2023), and USAF regulations (32 CFR § 989.8) mandate the consideration of reasonable alternatives for the proposed action. "Reasonable alternatives" are those that could be utilized to meet the purpose of and need for the proposed action, and that "would cause a reasonable person to inquire further before choosing a particular course of action." Per the requirements of 32 CFR Part 989 of the USAF Environmental Impact Analysis Process (EIAP) regulations, selection standards are used to identify reasonable alternatives for meeting the purpose and need for the USAF action.

Potential alternatives to the proposed actions were evaluated according to six selection standards. The proposed action alternatives must meet the following selection standards:

Selection Standard 1: Supply Average and Peak Water Demand

Alternatives carried forward for further consideration must provide enough water to meet JBER's average and peak demands. Unified Facilities Criteria (UFC) provides requirements for typical storage and distribution systems for domestic water, fire protection, and non-potable water for the DoD. Historic use and population projections in accordance with the UFC were used to estimate the current and future average and peak water demands for the JBER system (HDR 2016). The average demand at JBER is 3.0 MGD, and the peak demand is 7.5 MGD. To ensure operational reliability, reasonable alternatives carried forward for consideration should have the capacity to meet the average day (24-hour) demand in 10 hours of operation.

Selection Standard 2: Meet Federal and State Water Quality Regulations

Alternatives carried forward for further consideration must meet all EPA and ADEC regulations for drinking water facilities' construction and operation. Regulations require the EPA and ADEC to approve WTP construction materials, water treatment chemical additives, and operational treatment methods prior to their construction and operation. Regulations also dictate finished water quality parameters.

Selection Standard 3: Meet EPA PCB Cleanup Requirements

Alternatives carried forward for further consideration must ensure the removal of all sources of PCB contamination and full reduction of exposure of PCBs to drinking water as directed under the TSCA. A broad family of man-made organic chemicals, PCBs were domestically manufactured from 1929 until banned in 1979. Due to their non-flammability, chemical stability,

high boiling point, and electrical insulating properties, PCBs were used in hundreds of industrial and commercial applications. PCBs have been demonstrated to cause a variety of serious, adverse health effects to the immune system, reproductive system, nervous system, and endocrine system of humans. PCBs have also been demonstrated to cause cancer and other health issues (EPA 2022b).

TSCA provides the EPA with the authority to require reporting, record-keeping and testing requirements, and restrictions relating to the use of chemical substances and/or mixtures that contain PCBs. Current PCB regulations, published pursuant to the TSCA statute, are found in Title 40 CFR Part 761(EPA 2021). The *PCB Site Revitalization Guidance Under the TSCA* (EPA 2005) also provides direction for complying with TSCA regulations for the cleanup and disposal of PCB contamination. Specifically, the TSCA and its implementing regulations at 40 CFR Part 761 generally prohibit the use of PCBs in concentrations greater than 50 parts per million (ppm) in any manner unless authorized by rule. Exceptions to this prohibition of use include where EPA approved encapsulation methods are employed.

The existing WTP is out of compliance with the TSCA. PCBs are found in the WTP in varying concentrations above 50 ppm in most painted surfaces on the interior of the building, in window caulking, and on painted concrete surfaces in the sedimentation tanks, filter bays, and the clear well. PCBs located on the interior surfaces are directly or indirectly in contact with drinking water. Water is sampled throughout the WTP weekly, and to date, there have been no exceedances of EPA drinking water standards, including those for PCBs. Although no drinking water thresholds have been exceeded, traces of PCBs below regulatory thresholds have been detected in water tested following drinking water treatment, and there is potential to further contaminate drinking water.

In addition, PCB-impacted sediment was detected in 2019 in the backwash discharge channel associated with the WTP. Detections of PCBs in soil and sediment exceeded the ADEC soil cleanup level of 1.0 ppm. The presence of PCBs in concentrations above 1.0 ppm presents a risk of exposure to human health and environmental receptors. ADEC regulates PCBs in soil and does not allow for disposal of contaminated soils and/or PCB bulk product wastes (building demolition materials) that contain PCBs greater than 1.0 ppm within the state of Alaska. Based on these detections, the WTP and backwash channel were determined to be out of compliance in 2019.

In 2020, DU requested a Risk Based Disposal Approval (RBDA) from the EPA that allowed DU to implement interim protective measures including construction of engineering controls, implementation of operational changes and routine facility inspections for paint chip debris, and sampling and analysis of the internal process water and final produced drinking water at the JBER WTP (EPA 2020). The purpose of this RBDA was to allow DU to continue operating the non-compliant WTP over the short term, in a manner that is protective of human health and the environment, while developing a plan to either remediate the existing plant or construct a new plant. In their approval the EPA states, “This approval shall expire on October 1, 2023, by which time the EPA expects Doyon to have a new water treatment plant in place. Disposal of PCB coatings in the existing WTP and soils in the exterior backwash channel is expected in the following construction season.” On August 31, 2022, DU requested EPA grant an extension on the approval of the 2020 RBDA to October 1, 2025, which was granted by the EPA on December 15, 2022 (EPA 2022c). All alternatives carried forward for consideration must meet EPA’s remediation or removal requirements as directed and specified under TSCA.

Selection Standard 4: Withstand Outside Threats and Natural Disasters

Alternatives carried forward for further consideration must be able to provide protection against terrorist and cyber-attacks and unexpected changes in water demand, influent water quality, and natural disasters.

Current anti-terrorism (AT) and force protection requirements are outlined in the Facility Risk Assessment and Mitigation Tool (FRAM-T) which examines risk criteria for a facility and provides a recommended standoff distance from roads and other buildings based on occupancy, replaceability, construction materials, and vulnerability to threats based on data from UFC 4-010-01, DoD Minimum AT Standards for Buildings (DoD 2022b). The minimum AT standards must be applied to renovations when the project cost exceeds 50 percent of the replacement cost of the existing building. For this project, the refurbishment cost of the WTP is estimated to be 95% of the replacement cost, so the existing WTP would need to be refurbished to meet the requirements. If a building has substantial blast resistance, roads and other buildings may be as close as 33 feet depending on the score determined by a FRAM-T completed for the project. A reasonable alternative carried forward in this analysis must meet the FRAM-T with the typical WTP construction methods to determine an appropriate risk-based setback distance from a public road of 110 ft.

According to an American Water Works Association funded report (Germano 2021), cyber risk is the top threat facing business and critical infrastructure in the U.S. Government intelligence confirms the water and wastewater sector is under a direct threat as part of a foreign government's multistage intrusion campaign, and individual criminal actors and groups threaten the security of U.S. water and wastewater systems' operations and data. A robust and tested cybersecurity program is critical to protect public health and safety, prevent service disruptions, and safeguard customer and employee personal and financial information. Inadequate cybersecurity measures carry tremendous risk. In addition to serious threats to people, property, operations and data, cybersecurity incidents on military bases could impact the ability to meet missions. A reasonable alternative carried forward here must be secure from cyberattack by having the capacity to deter, detect, deny, delay, and defend the water system's monitoring and control functions from cyber intrusions.

A reasonable alternative carried forward for consideration must be resilient to withstand outside threats, which includes redundancy in the ability to meet peak demand within the obligatory service area. It should be able to adjust to sudden changes that impact the treatment process or working environment such as influent water quality, treated water demand, or natural disasters (e.g., earthquake, forest fire, volcanic ash). The water system should also be able to be staffed by a single operator in times of staff shortages or other disruptions.

Selection Standard 5: Meet Adequate Firefighting Requirements

Alternatives carried forward for further consideration must meet flow and pressure requirements for firefighting, which are higher than those for typical average and peak use. The 2016 Water System Master Plan (HDR 2016) identified a fire flow design criteria of 5,000 gallons per minute for four hours based on an evaluation of the largest buildings on JBER, their required fire flow per building square foot (which depends on the hazardous/flammability rating of the building), and then applying the calculations into a system-wide water flow. Water must be provided at adequate pressure to maintain a minimum of 20 pounds per square inch throughout the JBER distribution system in order to provide adequate firefighting capabilities.

Selection Standard 6: Use Existing Drinking Water Infrastructure

Alternatives carried forward for further consideration must be able to connect to existing water sources and treatment infrastructure. Air Force Policy Directive 32-10, Installations and Facilities, dictates that new construction should be minimized and requires the use of existing infrastructure to the maximum extent possible (USAF 2019). An alternative must be able employ the existing raw water supply from Ship Creek, chlorine injection system, and the newly constructed 1.5-million-gallon water tanks to avoid the need for new, additional drinking water infrastructure.

2.3 SCREENING OF ALTERNATIVES

The following potential alternatives that might meet the purpose and need to provide safe drinking water to JBER were considered:

1) Alternative 1 – Construct New WTP and Demolish Existing WTP

This alternative would construct a new WTP adjacent to the existing water storage tanks. After the WTP is operational, the existing WTP would be dismantled, materials would be properly disposed of, and the site would be remediated upon demonstration that the new plant is fully operational.

2) Alternative 2 – Construct New WTP and Stabilize Existing WTP

This alternative would construct a new WTP adjacent to the existing plant. In accordance with EPA requirements, the existing WTP would be closed, secured, and stabilized in place for future demolition.

3) Alternative 3 – Remediate Existing WTP

This alternative would maintain the existing WTP. The plant would be remediated to meet TSCA regulations for the cleanup of PCB contamination and EPA and ADEC requirements for cleanup of LBP and ACM, and upgraded to meet future and existing water demand, current operating standards, and current occupational safety standards.

4) Alternative 4 – Purchase Bulk Water from Anchorage Water and Wastewater Utility (AWWU) and Demolish or Stabilize Existing WTP

This alternative would purchase bulk treated drinking water from AWWU to be acquired through three existing interconnections. In accordance with EPA requirements, the existing WTP would be demolished immediately or closed, secured, and stabilized in place for future demolition.

5) Alternative 5 – Other WTP Locations

This alternative would construct a WTP at another location on JBER. In accordance with EPA requirements, the existing WTP would be demolished immediately or closed, secured, and stabilized in place for future demolition.

6) No Action

This alternative would involve no upgrades, improvements, or remediation to the existing WTP. The plant's operation and maintenance would not change, including the current EPA requirements for monitoring and testing existing contamination within the building.

The selection standards described in Section 2.2 were applied to these alternatives to determine which alternatives could provide safe drinking water to JBER and would fulfill the

purpose and need for the action. The alternatives and how they meet the selection criteria are further explained in Sections 2.4 and 2.5.

Table 1 - Selection Standard Summary Table

Alternative Descriptions	Selection Standards					
	Supply Average and Peak Demand	Meet Federal and State Water Quality Regulations	Meet EPA PCB Cleanup Requirements	Withstand Outside Threats	Meet Adequate Firefighting Requirements	Use Existing Drinking Water Infrastructure
	(1)	(2)	(3)	(4)	(5)	(6)
Construct New WTP & Demolish Existing WTP	Yes	Yes	Yes	Yes	Yes	Yes
Construct New WTP & Stabilize Existing WTP	Yes	Yes	No	Partial	Yes	Yes
Remediate Existing WTP	Yes	Yes	No	No	Yes	Yes
Purchase bulk water from AWWU & Stabilize Existing WTP	Yes	Yes	Yes	No	Yes	No
Construct New WTP at Another Location	Yes	Yes	Yes	Yes	Yes	No
No Action	No	No	No	No	No	Yes

2.4 DETAILED DESCRIPTION OF THE ALTERNATIVE(S)

The application of the selection standards to the six alternatives revealed a single reasonable alternative - Alternative 1. A detailed description of Alternative 1 and the “No-Action” alternative, along with the selection standard analysis, is provided below. Alternatives 2, 3, 4, and 5 are fully described and the rationale for their dismissal from further consideration is explained in Section 2.5.

2.4.1 Alternative 1 (Preferred Alternative). Construct New WTP and Demolish Existing WTP

Alternative 1 would (Figure 2-1 and Figure 2-2):

- Construct a new, primarily gravity-fed WTP that meets JBER’s current and expected demand for drinking water, including firefighting capabilities, during all conditions. To use the existing pipes from the raw water source in Ship Creek and two 1.5-million-gallon water tank, the proposed new WTP would be built about 250-feet northwest of the existing WTP and adjacent to the existing water storage tanks. The project would occur within a new 8-ft-tall, fenced area of about 13,000 square feet (0.3 acres). Water pressure would be boosted by raw water feed pumps within the WTP, if needed.

Figure 2-1. Alternative 1 Overview

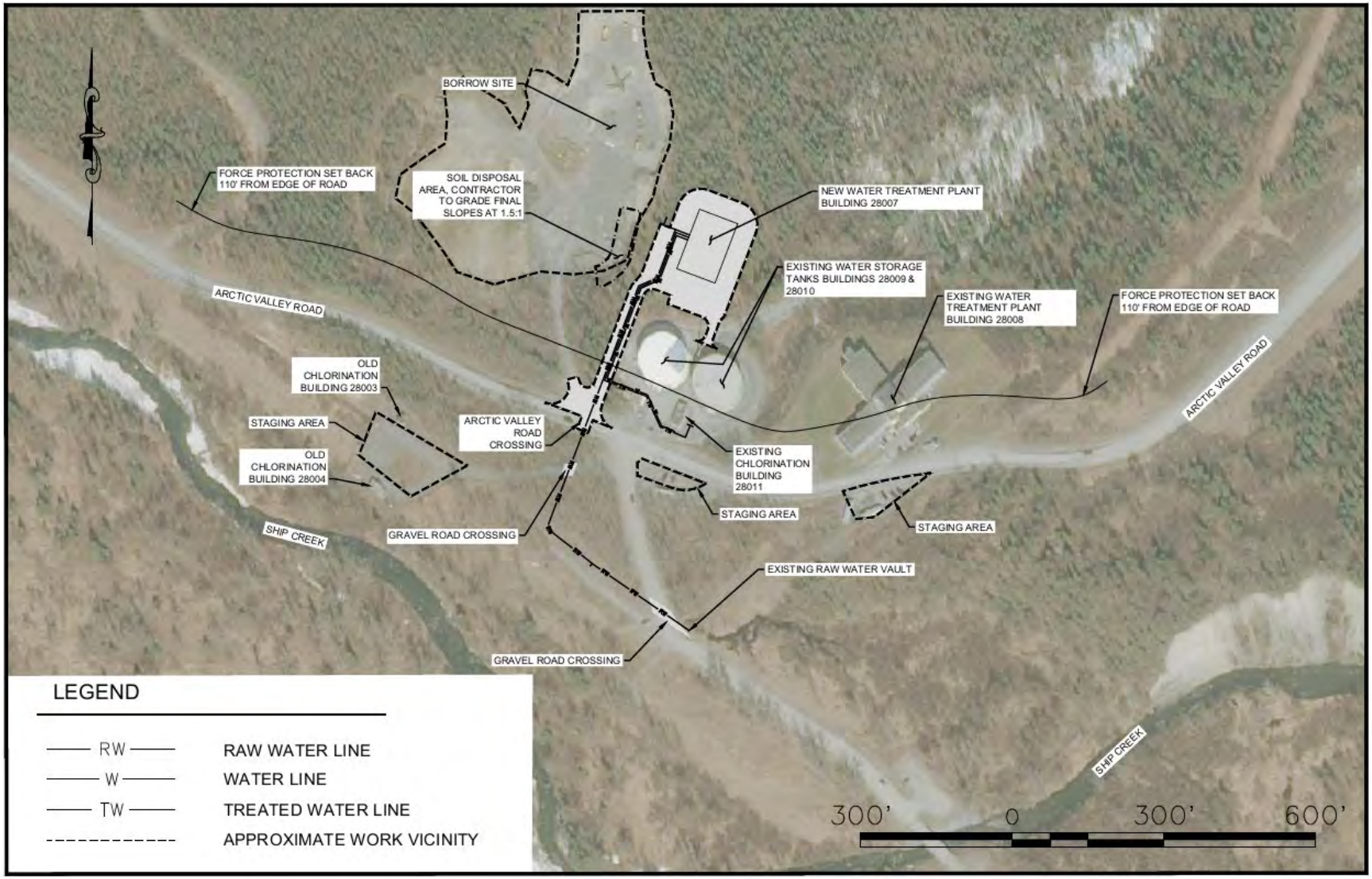
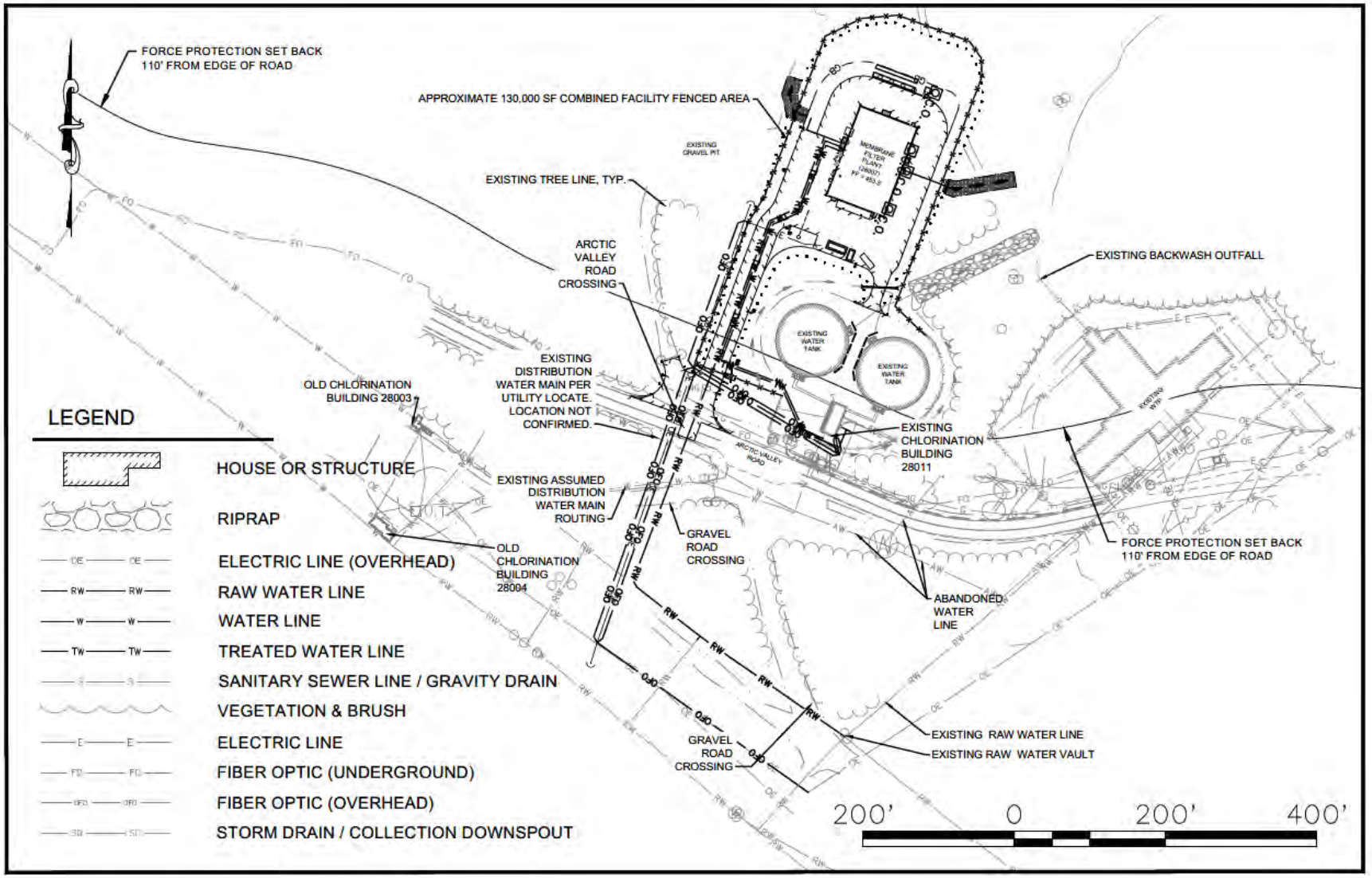


Figure 2-2. Alternative 1 Details



- Implement a WTP process that would include a direct microfiltration treatment process able to treat a wide range of influent water quality over the anticipated flows of the system
- Include an approximately 125-ft by 80-ft (10,000 sq ft), 24-ft tall pre-engineered metal building built on a 6-inch-thick, concrete floor slab foundation with concrete stoop and ramp entrances.
- Install access and security features that would include building setback (meeting DoD Minimum AT Standards for Buildings, DOD 2022b), curbs, gutters, parking spaces, a fire lane, bollards, chain-link fencing, a pivot gate, and a pedestrian gate.
- Install cyber-attack resistant measures within the plant.
- Include a generator and transformer, electrical service, facility lighting, a gas line, water lines, a 2,000-gallon fire guard tank, a 1,500-gallon septic tank, and a dumpster.
- Install a backwash line and outfall, drain fields, paving, and a culvert. Grading, clearing, vegetation removal, and earthwork disturbance (including ditching for the project's utilities) would also occur, and disturbed areas would be revegetated.

In addition, Alternative 1 would use three staging areas and a soil disposal/borrow site area as shown on Figure 1, and project personnel and waste would be transported to the project site via Arctic Valley Road.

Under Alternative 1, once the proposed new WTP has been commissioned by ADEC and is fully operational, the existing WTP would be dismantled and properly disposed, and the site would be remediated. A licensed and certified demolition contractor would develop a work plan following American Society for Testing and Materials (ASTM) E2893-16e1 *Standard Guide for Greener Cleanups* (ASTM 2017), which provides a process for identifying, prioritizing, and implementing activities to reduce the environmental footprint of a cleanup. The work plan would follow the primary federal and state regulations for PCBs - TSCA regulations at 40 CFR Part 761 and Alaska Solid Waste Management regulations (18 Alaska Administrative Code [AAC] 60). The EPA-approved work plan would also include Occupational Safety and Health Administration (OSHA) approved methods for dismantling and segregating building materials, depending on the nature of the waste (non-hazardous or hazardous). The work plan would include approaches to evaluating whether materials can be safely removed mechanically and disposed separately from or with the building components. Importantly, Alternative 1 would also include methods for handling and then disposing materials as follows:

- PCB bulk product waste and remediation waste with PCB concentrations of 50 ppm or greater would be disposed of at a landfill outside of Alaska; the state does not have any landfills permitted to accept large quantities of regulated hazardous wastes, such as PCB-impacted material as defined in 40 CFR Part 761. This PCB bulk product waste would be characterized and properly packaged in approved shipping containers for transportation to an EPA-licensed transporter via truck and barge to an approved hazardous waste landfill, likely in Idaho or Oregon.
- Building demolition wastes with concentrations of PCBs greater than 1 ppm, but less than 50 ppm, cannot be disposed within the state of Alaska because there are currently no municipal landfills permitted to accept PCB bulk product waste over 1.0 ppm. Any other PCB waste generated by the project would be disposed in the same manner as

TSCA regulated PCB bulk product waste (i.e., packaged and shipped out state for disposal at a permitted landfill outside Alaska).

- LBP is found with WTP materials also containing PCBs; therefore, materials containing lead paint would be handled and disposed according to their PCB concentrations (see bullets above).
- ACM, if not contaminated with lead or PCB, would be disposed at a landfill approved to accept ACM, likely the Anchorage Regional Landfill.
- Non-hazardous waste products would likely be disposed at the Anchorage Regional Landfill.

Under Alternative 1, once the existing WTP has been removed from the site, an EPA-approved work plan would be implemented to remediate the backwash channel soil to ensure that PCB levels are within acceptable limits. The work plan would include approaches to evaluating whether soil is disposed at a TSCA-permitted landfill or remediated in place.

Alternative 1 would meet JBER's current and expected future average and peak drinking water demand. Under this alternative, there would be no need to connect into wells or AWWU's system during times of high demand (Selection Standard 1) or to meet firefighting needs (Selection Standard 5). Alternative 1 design would meet current and anticipated future drinking water regulatory requirements (Selection Standard 2); as required by the Safe Drinking Water Act (SDWA) and other state and federal regulations, the treated water would meet water quality standards established by the EPA and adopted and enforced by ADEC (CRW 2021b). The alternative would be designed and sited to be able to connect directly to and use the nearby existing raw water line from Ship Creek, chlorine injection system, and water storage tanks (Selection Standard 6).

Because a new WTP would be constructed, Alternative 1 would eliminate all future risk of PCBs contaminating JBER's drinking water supply, PCB exposure to WTP operators, and the issue of noncompliance with EPA regulations (Selection Standard 3). It would also meet DU's mandate via its contract for utility operations at JBER to ensure compliance with agency orders regarding hazardous or environmental conditions. The existing WTP would be demolished following an EPA-approved plan, which would protect humans and the environment from PCB exposure risks.

Alternative 1 would ensure a resilient and secure water supply for JBER that would withstand outside threats (Selection Standard 4). The proposed new WTP's location, added security measures, and modern cybersecurity improvements would protect against unexpected attacks and safeguard JBER's drinking water supply. Under this alternative, the new, modern building would be capable of handling earthquakes.

2.4.2 No Action Alternative

Under the No Action Alternative, the current WTP would continue to operate and be maintained without any changes. The WTP was originally constructed by the U.S. Army in 1955 and became operational in 1957. Numerous upgrades over the past 65 years have occurred; however, much of the WTP's components are past their design life and need to be replaced.

The existing WTP would remain in place, connected to the existing Ship Creek raw water supply, chlorine injection system, and water storage tanks (Selection Standard 6).

The No Action Alternative would not meet JBER's existing average and peak demand water requirements (Selection Standard 1). Recently, the potable water wells have been used on occasion to supply the required water demand when it exceeded the production capacity of the WTP. The existing wells, however, are not capable of supplying adequate water volumes for extended periods of time. The wells and associated equipment were constructed in the 1950s and are at the end of their design life. The wells need to be refurbished, modernized, and source water protection improved. The upgraded wells would not withstand outside threats since the wells provide water to the installation through a single line with no redundancy.

Drinking water regulations have changed over the past 65 years since the WTP was originally constructed. Due to the aging infrastructure, drinking water must be processed more slowly to meet present-day drinking water standards (Selection Standard 2). The WTP cannot meet current EPA and ADEC regulatory drinking water standards and maintain a peak output of 7.5 MGD, and the operators must limit flow through the plant to less than 3.0 MGD at times of high raw water solids and color. This happens primarily during spring break-up and fall rains.

The existing WTP is currently out of compliance with the EPA because it does not meet the regulatory requirement of the TSCA and 40 CFR Part 761. The No Action Alternative would not meet EPA PCB cleanup requirements (Selection Standard 3) and would operate under and comply with interim operating measures and sampling procedures, which are outlined in the December 2022 EPA's Approval of Interim Measures to Prevent Releases of PCBs and Ongoing Monitoring, Pursuant to 40 CFR Part 761.6l(c) at Doyon Utilities Water Treatment Plant AKR000204883. This includes, but is not limited to, weekly inspections of the paint coatings and sampling of the drinking water (EPA 2022c and EPA 2020). Once the interim measures expire, the EPA could require the WTP to cease operation because of the risk of PCB exposure to JBER's population and on-site workers.

The No Action Alternative would not withstand outside threats (Selection Standard 4). The WTP would continue to be approximately 25 feet from Arctic Valley Road, 85-feet less than the minimum recommended anti-terrorism standoff distance of 110 feet. The building would remain at risk to natural disasters including earthquakes, since existing unreinforced masonry would remain potentially subject to collapse during seismic events, and other safety improvements would not be made. Fire suppression and protection improvements would not occur under the No Action Alternative.

There would be no improvements to the WTP building or cyber security. The supervisory control and data acquisition (SCADA) system monitors the WTP and numerous remote locations in the water distribution system. Although portions of the system were upgraded, and additional improvements to the network connections were made, the WTP needs further modern security safeguards for handling physical or electronic mischief (MWH 2012a).

The No Action Alternative would be unable to provide adequate firefighting flow and pressure (Selection Standard 5). As mentioned above, under normal demand conditions the existing WTP meets water quality standards; however, the WTP is unable to meet current drinking water quality standards while supplying the maximum water demand, and there is a reliance on wells and AWWU's water during times of unusually high water use. Without WTP improvements or replacement, the WTP would not be able to respond to a fire at JBER without using an alternative system. The No Action Alternative will be carried forward for further analysis, consistent with current CEQ regulations, to provide a baseline against which the impacts of the action alternative can be assessed.

2.5 ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION

As none of the other alternatives that were considered would meet the purpose and need or comply with all the selection standards, the following alternatives have been eliminated from further consideration.

2.5.1 Alternative 2. Construct New WTP and Stabilize Existing WTP

Under this alternative, a new WTP would be constructed as described under Alternative 1. Different from Alternative 1, after the proposed new WTP is commissioned and fully operational, the existing WTP would be stabilized and secured in place for future demolition.

An EPA-approved plan for securing and maintaining the current WTP in place will be developed under Alternative 2 to ensure building security and preventing release of any toxics until eventual demolition. DU has been actively managing PCB paint coatings within the WTP to ensure it does not pose an unacceptable risk of injury to human health or the environment. As part of this program, DU has instituted interim operating measures and sampling procedures which are outlined in EPA's Approval of Interim Measures to Prevent Releases of PCBs and Ongoing Monitoring, Pursuant to 40 CFR §761(c) at Doyon Utilities Water Treatment Plant AKR000204883 (EPA 2022c).

Because the WTP would remain in place under Alternative 2, the Interim Control Measures (including sampling procedures) would be modified for stabilizing and securing PCB coatings in the plant. In addition to the bullets above, it is expected that the procedures would include the following PCB-related measures:

- The building surfaces would be inspected monthly for loose paint chips. All observed paint chips would be placed in an approved and labeled waste container, and disposed in accordance with 40 CFR § 761.62(b);
- DU would maintain records of inspections for five years; and
- Other measures for handling hazardous materials could be added, as required by the EPA.

Under Alternative 2, once the existing WTP is replaced, the building would serve no purpose in providing utility service at JBER and would be secured in place. Future WTP demolition and disposal would follow similar methods to those described under Alternative 1. Differing from Alternative 1, the building's demolition and disposal timeframe are undefined at this time.

Similar to Alternative 1, Alternative 2's proposed new WTP includes a raw water filtration system that would be able to process enough water to maintain average and peak demand (Selection Standard 1). Alternative 2's proposed new WTP design would be approved by ADEC prior to construction and operation and treated water would meet water quality standards established by the EPA and adopted and enforced by ADEC (Selection Standard 2). The Alternative 2 proposed location would allow direct connection and use of the nearby, existing raw water line from Ship Creek, chlorine injection system, and water storage tanks (Selection Standard 6). The WTP would provide enough water to meet JBER's current and expected drinking water needs under all conditions (Selection Standard 2). It would also provide enough water for firefighting needs (Selection Standard 5).

While this alternative meets the purpose and need for the project and most selection standards above, this alternative was dismissed from further consideration because the existing WTP would be at risk to natural disasters, including earthquakes and fire (Selection Standard 4),

since existing unreinforced masonry would remain and no upgrades to the fire suppression system would be made. If the building were to sustain damage during an unexpected event, the remediation effort would be further complicated.

Alternative 2 was also dismissed from further consideration in the document because it would not meet EPA PCB cleanup requirements (Selection Standard 3). As previously stated, DU is currently operating the existing WTP under an approved RBDA with prescribed controls, sampling, analysis, inspection, and reporting requirements because the plant contains paint coating with PCB concentrations equal to or greater than 50 ppm, which are unauthorized per TSCA and its implementing regulations at 40 CFR Part 761. The EPA stated in the approval that they expect the existing WTP to be disposed in the construction season following construction of the proposed new WTP.

2.5.2 Alternative 3. Remediate Existing WTP

Alternative 3 would involve abating the hazardous materials content, upgrading the treatment processes to improve plant capacity and reliability, and other improvements to bring the facility up to current WTP operating requirements and standards.

To abate hazardous materials in the existing WTP, the *PCB Risk-Based Disposal Plan* (Stantec 2019) would be resubmitted for EPA approval. The overall goal of the abatement presented in the disposal plan is to achieve EPA compliance standards and manage risk to occupants and the public. Accordingly, the plan includes removal of PCB-containing coatings:

- From all surfaces adjacent to or in contact with drinking water;
- Where concentrations are at or greater than 50 ppm;
- Where the coating's physical condition is failing (e.g., delaminating, flaking) or impacted by rehabilitation activities; and
- Where physical contact by staff is frequent.

In addition, PCB-containing concrete and coatings with concentrations less than 50 ppm would be encapsulated.

This would be accomplished by:

- Complete removal and replacement of the building component that can be removed and replaced (such as handrails, vinyl, countertops, and caulking);
- Removal of the paint coating from concrete walls and structures by physical methods such as grinding. Contaminated dust would be collected and disposed in an approved landfill;
- PCB-containing waste material from the WTP would be properly packaged in approved shipping containers and transported by an EPA-licensed transporter via truck and barge to an approved landfill;
- PCBs have been documented migrating from the paint into the WTP's concrete walls and floors. After abatement is completed, if PCBs are still present in the underlying material in concentrations less than 50 ppm, the surface or material would be coated or encapsulated with a coating that is EPA-approved for contact with drinking water. The coating would prevent the remigration of PCBs out of the concrete and into the drinking water; and

- The settling basins, filter bays, and clear well would be lined, coated, or encapsulated to prevent drinking water from coming into contact with any residual PCBs. This would likely involve constructing stainless steel tanks within the existing basins.

In addition to the PCB-containing materials, abatement of ACM and LBP would occur under Alternative 3. Waste materials containing lead paint would be handled and disposed according to their PCB concentrations. ACM, if not contaminated with lead or PCBs, would be disposed at a landfill approved to accept ACM, likely the Anchorage Regional Landfill.

Once the remediation is complete under Alternative 3, substantial portions of the existing WTP would be upgraded as follows (GV Jones 2010 and MWH 2012b):

- Because the WTP cast iron process piping has reached or exceeded design life and shows loss of wall thickness, major sections of the large diameter process piping would be replaced;
- The chemical mixing, raw water rapid mix systems, and chemical feed systems would be replaced to address issues with chemical treatment that impairs the coagulation, flocculation, and filtration processes;
- The flocculation and sedimentation basins would be reconstructed to include new flocculation components and plate settlers, with ancillary sludge collection equipment;
- The WTP instruments and controls would be replaced, including the electrical and HVAC systems;
- Control and security technology would be replaced and improved. Existing masonry would be reinforced because several walls have unreinforced masonry and are potentially subject to collapse during seismic events;
- OSHA-required architectural life safety components and worker safety improvements would be installed, including egress, access, occupancy improvements and equipment hazards, handrails, and ladders; and
- Fire suppression and protection improvements would be installed, including a fire suppression system, smoke detection technology, and emergency lighting.

The upgraded water treatment system in Alternative 3 would be able to process enough water for the existing and future needs at JBER (Selection Standard 1) and meet firefighting water requirements (Selection Standard 5). The existing WTP improvements would be approved by ADEC. After the plant is remodeled, drinking water would meet federal and state water quality standards (Selection Standard 2). Further, Alternative 3 would be sited to be able use the nearby, existing drinking water infrastructure (Selection Standard 6).

Alternative 3 was dismissed from further consideration because it does not meet Selection Standard 3 since DU and USAF were unable to secure EPA's approval on a *PCB Risk-Based Disposal Plan* allowing continued use of the existing facility. DU coordinated with the EPA to develop this abatement plan without successful resolution. Despite extensive coordination effort over the course of two years, DU withdrew the abatement plan request and began to develop other alternatives.

Since 2001, the EPA's stated goal is zero ppm PCBs detected in potable water. Keeping an extensively abated WTP building in service, which still contains levels of PCB throughout its entirety, is not aligned with the EPA's site-specific goals for long-term use of the facility. A

records search of EPA databases and a nationwide inquiry of environmental professionals was unable to find any record of where a WTP was placed back into service following PCB abatement. Since there is no known established precedent for this process at any other water treatment facility in the country, and the abatement and encapsulation process could not guarantee that remigration of remaining PCBs would not occur back to the concrete surface, the risk associated with the methods proposed in the WTP Abatement Work Plan remained under question by the EPA.

Further, it is likely that the EPA did not approve the abatement plan because there are locations within the WTP where drinking water comes in direct contact with PCBs, particularly the WTP's concrete filter basins, which are coated with PCB-containing paint. While DU and USAF proposed to empty the concrete filter basins and strip the contaminated paint, TSCA does not authorize the use of "decontaminated" concrete which has been impacted by PCB paint to be in contact with drinking water. DU and USAF completed exhaustive research but were unable to find National Sanitation Foundation (NSF) 61 certified coatings that would adequately encapsulate the PCB-containing materials. DU and USAF also researched NSF-61-accepted basin lining systems that would allow required inspection of the filter basins structural walls needed for worker safety; however, none were found.

DU and USAF vigorously explored several alternate methods to meet EPA's requirements, including designing and installing special stainless-steel tanks to sit within the existing basins. The tanks would eliminate all contact of PCB-containing materials with water. However, these tanks would cause substantial difficulty for the long-term operation and inspection of the WTP. The filter media and tanks would need to be removed periodically for inspection of the underlying concrete structures, and the WTP is too small, and the ceiling is too low, to allow for reasonable removal and replacement of steel tanks.

Remediation and abatement in the existing plant is very complex because PCBs are in over 90 percent of the paint coatings, and PCBs are found in difficult-to-reach locations such as adjacent to filter media, in confined spaces, and behind process piping and electrical components.

It is not feasible to remove 100 percent of the PCBs from the facility while leaving the WTP in place and operational. During initial PCB abatement planning, DU and USAF considered closing half of the WTP, while keeping the other half online to produce water for JBER. This approach was deemed not reasonable because substantial modifications to the building, piping cross-connections, and operating systems would be required to separate the treatment process and create two, individual water treatment process trains (or sequences). Since nearly all the WTP surfaces are covered in non-compliant PCB paint coatings, the plant modifications to prepare for the abatement process could result in the release of PCB particles to drinking water and hazardous situations for WTP operators and construction workers.

PCB abatement would require mechanical removal of the paint coating, including sanding or grinding concrete and other surfaces that cannot be removed from the WTP. Physical methods would drive PCB (and lead) contaminated fine particulates airborne in the operating plant. Although work areas could be partially contained by engineering controls such as temporary walls and plastic sheeting, the controls would be insufficient to prevent contamination of the open process water sedimentary and filter tanks. For example, exit and entry points would be areas where PCBs could be released into the working area of the plant. Remediating PCBs from an active WTP would result in considerable exposure risk to drinking water and to WTP employees.

DU and USAF examined the potential to temporarily close the entire WTP to complete the remediation. Under this option, water would be acquired from the existing groundwater wells for at least two years while the existing WTP is abated and remodeled. This is not a feasible option because water provided from the wells does not meet AFI 48-144 for fluoride injection. The AFI requires installations serving 3,300 persons or more to provide optimally fluoridated water. The combined JBER Richardson and Elmendorf public water systems serve more than 40,000 persons.

In addition, the wells and associated equipment were constructed in the 1950s and are at the end of their design life. The wells need to be refurbished and modernized, and source water protection needs improvement for each well before they could be counted on to provide water while the existing plant is abated and remodeled. This option would not withstand outside threats since the wells provide water to the installation with no redundancy. This option would also pose a risk to the neighborhood surrounding the wells because the chlorine gas containers used to treat water at the wells would need to be replaced often. Alternative 3 cannot reasonably meet EPA PCB clean-up requirements. Due to PCB-containing material in contact with the water being treated for drinking and extensive hazardous materials throughout the WTP, it is not feasible to remove all hazardous materials and verify that hazardous materials are not impacting drinking water and JBER employees and visitors. It is not reasonable to risk the potential exposure of thousands of U.S. military personnel and their families to carcinogens in their drinking water, and DU and USAF remain concerned about the long-term risk of increasing PCBs in the potable water despite an abatement plan.

Alternative 3 was also dismissed from further consideration because it would not meet anti-terrorism requirements (Selection Standard 4). While the addition of building retrofits such as shield structures, systems to catch hazardous debris, and upgrading structural components will help mitigate terrorist attacks, the best way to meet requirements is to keep the threats as far away as possible from the people and buildings. The existing WTP is located approximately 25 feet from Arctic Valley Road. No improvements to the existing WTP would enable the plant to meet the minimum recommended anti-terrorism standoff distance of 110 feet. Changing the building's setback distance from Arctic Valley Road, interior treatment equipment, and piping to move the WTP an additional 85 feet away from the road is not reasonable, since it would require completely rebuilding a substantial portion of the WTP. In addition, rerouting Arctic Valley Road to increase the setback distance is not a reasonable solution. Any road improvements would need to meet current JBER road standards for sight distances and curve radii. Therefore, moving the road to be at least 110 feet away from the WTP would involve a complete reconstruction of at least 600 linear feet of roadway.

2.5.3 Alternative 4. Purchase bulk water from AWWU and Demolish Existing WTP

This alternative would purchase bulk treated drinking water from AWWU to be obtained through three existing interconnections that are currently maintained for emergencies — Arctic Valley, the Housing City By-Pass, and the Hospital City By-Pass. Some changes would be required to convert the emergency connections to the primary source of treated water. Once the primary source connection to the AWWU system is commissioned and fully operational, the existing WTP would be demolished immediately or stabilized in place as described in Alternatives 1 and 2, respectively.

Information provided by AWWU (AWWU 2023) and included in their 2022 regulatory filings (AWWU filing to Regulatory Commission of Alaska 2022), indicate that AWWU is capable of meeting the average and peak demand of their service area with enough additional capacity to

provide JBER's average demand of 3.0 MGD or peak demand of 7.5MGD (Selection Standard 1). AWWU is a large utility required to meet all state and federal drinking water standards (Selection Standard 2); therefore, use of the AWWU water at JBER would meet water quality standards. Alternative 4 would also meet JBER's firefighting water requirements (Selection Standard 5).

Alternative 4 was dismissed from further consideration because it failed to meet selection standards 4 and 6.

Alternative 4 does not meet selection standard 4 because of the reduction in water supply resiliency as well as limiting JBER's ability to implement present and future DoD antiterrorism and cybersecurity requirements. Under Alternative 4, AWWU would provide all the water to JBER as well as the entire Municipality of Anchorage Service Area. With only one regional drinking water supplier, beneficial redundancy provided by Doyon as an alternative utility provider in the region would be eliminated, Despite AWWU's multiple sources from which they draw water, a loss of any one of the three major contributing sources would push the remaining sources over or near their maximum design capacity and no alternative provider would be able to provide support in an emergency. Under its current Tariff, AWWU is also required to prioritize retail consumers over bulk water purchasers (RCA Original Tariff, RCA No. 122, Number 3). This alternative was also dismissed because the USAF would not have oversight or control over AWWU's security measures. Unlike DU, whose only customer is DoD, AWWU has a variety of customers whose threat vulnerability may not justify the level of security investments needed to protect DoD assets. AWWU would be required to balance the costs and benefits to those customers in capital spending decisions related to security. In addition, the geographic area comprising AWWU's system creates a greater vulnerability to natural and manmade threats. In combination with the reduced resiliency, this increased exposure further reduces the ability of Alternative 4 to withstand outside threats and natural disasters (Selection Standard 4).

Finally, because a new WTP would not be constructed, Alternative 4 was dismissed from further consideration in this document because it would not use DU's existing drinking water source and treatment infrastructure, including the raw water supply at Ship Creek, the chlorine injection system, and the two, newly constructed 1.5-million-gallon storage tanks (Selection Standard 6). AWWU commented that some of the infrastructure could continue to be used, but DU would have no obligation to transfer their rights or responsibilities to AWWU, including use of distribution infrastructure that DU owns and operates, or consent to the modifications necessary to support a new primary source. AWWU did not provide any facts to support a conclusion that such transfer or consent was likely.

2.5.4 Alternative 5. Other WTP Locations Alternatives

This alternative would construct a WTP at another location on JBER. In accordance with EPA requirements, the existing WTP would be demolished immediately or closed, secured, and stabilized in place for future demolition.

Although it would meet most Selection Standards, Alternative 5 was dismissed from further consideration because of its distance from the existing water infrastructure, including the raw water supply from Ship Creek, chlorine injection system, and water storage tanks (Selection Standard 6). Other locations would result in a larger project that would require constructing additional new infrastructure, resulting in a larger impact on the surrounding environment and more expense.

USAF policy (AFPD 32-10, Installations and Facilities) dictates that new construction should be minimized and requires the use of existing infrastructure to the maximum extent possible (USAF 2019); however, repurposing an existing building at JBER into a WTP is not feasible and was dismissed from further consideration. Importantly, there are no suitable buildings near the existing raw water line from the water source at Ship Creek and the water storage tanks. If a suitable building were found, new water line extensions would be needed to transport the raw, untreated water from Ship Creek to the plant and from the plant to the water storage tanks. WTPs are specialized buildings that must be able to treat and temporarily store water in a controlled setting. There are few unoccupied buildings on JBER that are large enough and can be remodeled to hold chemicals needed for water treatment and water treatment systems, equipment, and tanks.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

NEPA requires that the analysis address areas and components of the environment that may be potentially affected. This section identifies those areas. Locations and resources with little or no potential to be affected are summarized in Section 3.1. Locations and resources with short-term, adverse impacts are summarized in Section 3.2.

Each environmental resource discussion begins with an explanation of the affected environment within an expected geographic scope, known as the region of influence (ROI), and ends with a discussion of potential environmental consequences. The existing condition of each relevant environmental resource is described to provide meaningful points from which the public and agency decision-makers can compare potential future environmental, social, and economic effects.

3.1 SCOPE OF THE ANALYSIS

Based on the scope of the Preferred Alternative, issues with minimal or no anticipated impacts were identified and eliminated from further analysis through a preliminary screening process. The following describes those resource areas not carried forward for a detailed analysis, along with the rationale for their elimination.

Regardless of the alternative selected, the following resources are not likely to be significantly affected by the Preferred Alternative and are not discussed in detail in this EA:

- ***Air Installation Compatible Use Zone/Land Use/Noise***: The Preferred Alternative area is compatible with area land use (noise, accident potential, encroachment, etc.) and is not a hazard to air navigation (Federal Aviation Administration Aeronautical Study No. 2021-AAL-365-OE). The Preferred Alternative would be adjacent to existing drinking water infrastructure in an area that has been used for this purpose for over 65 years. As a result, the USAF anticipates no significant short- or long-term adverse impacts to the air installation compatible use zone, land use, or noise, and this resource area is not carried forward for detailed analysis.
- ***Biological/Natural Resources:*** There are no wetlands in the project area (USACE 2022). There are no federally listed Threatened or Endangered Species, or critical habitat in the proposed project area (USFWS 2022). The Preferred Alternative would be approximately 850 feet from Ship Creek, the nearest anadromous fish stream (Anadromous Waters Catalogue Code 247-50-10060; ADF&G 2022a), and there are no marine waters in the Preferred Alternative area. Best Management Practices (BMPs) to ensure control of fugitive dust from reaching Ship Creek and its riparian areas are

described in the Air Quality section of this EA. As there are no anticipated adverse effects to fish habitat, no Essential Fish Habitat analysis is necessary and the National Oceanic and Atmospheric Administration and National Marine Fisheries Service were not consulted. Based on a May 2022 aerial survey, there are no bald eagle nests within 660 feet of the Preferred Alternative area (USAF 2022a). Standard construction practices will be employed at JBER, including vegetation clearing and land disturbance not occurring between May 1 and July 15 to protect migratory birds, including those of Conservation Concern, from potential impacts during their nesting season. The presence of animal dens will be considered prior to tree clearing and ground disturbing activities, particularly between the months of October and May to avoid "take, closed season" under 5 AAC 85.015. All forest resources will be managed in accordance with Air Force Manual 32-7003. As per standard practice, cut woody materials with a diameter greater than four inches would be delimbed, debarked or bark split, cut to 4 to 6 feet lengths, and made available in JBER's woodlots or in an area accessible to recreators through the personal use firewood cutting program. Little brown bats are a State of Alaska Species of Greatest Conservation Need and are currently under review for potential ESA listing. The proposed project area is within known little brown bat habitat; however, standard management practices described in the JBER Integrated Natural Resource Management Plan (2022b) will be employed to ensure no adverse effect. Bats may not be legally harassed or killed without authorization. Occurrence of bats within the project area will be reported immediately to JBER Conservation. The USAF anticipates no significant short- or long-term adverse impacts to biological or natural resources, and this resource area was not carried forward for detailed analysis.

3.2 ENVIRONMENTAL RESOURCES INCLUDED FOR DETAILED CONSIDERATION

Air quality, water resources, safety and occupational health, hazardous materials/waste, cultural resources, earth resources, socioeconomic resources/environmental justice, and climate and climate change are areas that require analysis to determine their level of impact from the Preferred Alternative and the No Action Alternative. The following subsections provide in-depth analysis.

3.2.1 Air Quality

This section describes the ambient air resources within the ROI and the regulatory framework used to characterize it. Air quality is a measure of the concentration and distribution of natural and man-made pollutants known to be harmful to human health and the environment. As directed by the Clean Air Act (42 USC § 7401 et seq.), the EPA established primary and secondary National Ambient Air Quality Standards (NAAQS) for criteria pollutants in 40 CFR Part 50 (EPA 2022d). The six criteria pollutants include carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), ozone (O_3), lead (Pb), and particulate matter (PM) with less than or equal to 10 microns in diameter (PM_{10}) and PM with less than or equal to 2.5 microns in diameter ($PM_{2.5}$). The State of Alaska adopted the NAAQS and added an ambient air quality standard for ammonia (NH_3). The EPA designates geographic areas within the United States as either in attainment or nonattainment based on whether the levels of a given criteria pollutant meet the NAAQS. Geographic areas that meet or are cleaner than the NAAQS are described as attainment areas (also referred to as unclassified); while areas that have exceeded one or more of the NAAQS more than once in a year are designated as nonattainment areas. Nonattainment areas are subject to more stringent requirements and must develop a plan to meet the NAAQS.

Once a nonattainment area has demonstrated it meets the NAAQS, EPA redesignates it as an attainment area subject to maintenance plan requirements under Section 175A of the Clean Air Act. These areas are referred to as maintenance areas.

The ADEC Division of Air Quality has primacy for implementing and enforcing the CAA regulations in Alaska. To manage ambient air quality, ADEC subdivided Alaska into four Air Quality Control Regions (AQCR). JBER is within the Cook Inlet Intrastate AQCR, which encompasses the greater Anchorage Area Borough, Kenai Peninsula Borough, and the Matanuska-Susitna Borough.

Affected Environment

According to ADEC (2022), JBER is designated as an "attainment area" for all six criteria pollutants. Between 1971 and 2003, an area of Anchorage adjacent to JBER was a non-attainment area for CO; however, it was redesignated to maintenance for CO in July 2004. In March 2013, after being a non-attainment area for PM_{10} for 20 years, Eagle River (just northeast of JBER) was redesignated as a maintenance area (EPA 2022a).

JBER consists of multiple, distinct stationary sources that are owned, operated, and permitted by a few separate organizations. The USAF operates several minor and one major stationary source within the JBER boundary. DU operates multiple utilities within the JBER boundary under a single, major stationary source. DU operates two natural gas-fired boilers with a combined input rating of nine million British thermal units per hour (MMBtu/hr) and one 526 horsepower, diesel-fired emergency generator at the existing WTP. The emissions contribution from these emission units is minor in comparison with the other facilities operated under the DU stationary source. Annual, potential emissions from the existing WTP are presented in Table 3-1.

Environmental Consequences

Air Quality Impact Analysis

An air quality impact analysis (AQIA) was completed to quantify potential impacts to air quality resulting from the Preferred Alternative. The AQIA was performed using the USAF Air Conformity Applicability Model (ACAM) tool in accordance with Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR Part 989); and the General Conformity Rule (GCR, 40 CFR Part 93 Subpart B). The ACAM tool uses a combination of default settings and user inputs to estimate emissions associated with a preferred action or alternative. ACAM is designed to provide planning-level emission estimates based on user inputs and the best available information at the time of the environmental assessment. The ACAM tool for this effort estimated Criteria Air Pollutants (CAP) and greenhouse gas (GHG) emissions (described in Climate and Climate Change Section 3.2.8) on an annual basis during the construction and operating phases of the Preferred Alternative. CAP emissions were estimated using emission factors developed by USAF from several emission factor sets, including the EPA's Compilation of Air Pollutant Emissions Factors.

The ACAM tool requires start and end dates for each activity for which emissions are being estimated. For the purposes of the AQIA, it was assumed that construction would begin in May 2023, would require operations to occur 12 hours per day, five days per week, and would be completed in two years. Initial operation of the proposed new WTP would occur in 2025. Demolition of the existing WTP was assumed to begin in 2030, would occur 12 hours per day,

five days per week, and be completed within two years. Default ACAM settings were used for estimating construction and the vehicle fleet inventories required to construct the proposed new WTP and demolish the old facility. User-specific inputs entered into ACAM to estimate emissions also included the following:

1) Total square feet of area that would be disturbed;
2) Volume of material removed during excavation and trenching;
3) Volume of materials delivered to the site during site grading and laying down asphalt;
4) Square footage and height in feet of the proposed new WTP; and
5) Input rating for the emergency generator, boilers, water heater, and diesel storage tank.

Annual emission estimates from each phase of the proposed action are presented in Table 3-1. The inputs and outputs used to estimate air emissions from the Preferred Alternative are summarized below and detailed ACAM reports are provided in Appendix B. These emissions are compared to a set of insignificance indicators established by the USAF to assess whether the proposed action would potentially result in significant effect on air quality. Emissions below the insignificance indicators are deemed insignificant.

Table 3-1. Estimated Air Quality Emissions by Project Phase and Year for the Preferred Alternative

Year	Annual Emissions (Tons/Year)[1]							
	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$	Pb	NH_3
Construction Phase (New Water Treatment Plant)								
2023	0.27	1.60	1.87	0.05	3.94	0.06	0.00	0.00
2024	0.14	0.70	1.07	0.00	0.03	0.03	0.00	0.00
2025	0.33	5.46	1.97	0.00	0.18	0.18	0.00	0.00
Insignificance Indicator	250	250	250	250	250	100	25	100
Initial Operating Phase (New Water Treatment Plant)								
2026	0.35	12.23	3.39	0.01	0.39	0.39	0.00	0.00
2027	0.35	12.23	3.39	0.01	0.39	0.39	0.00	0.00
2028	0.35	12.23	3.39	0.01	0.39	0.39	0.00	0.00
2029	0.35	12.23	3.39	0.01	0.39	0.39	0.00	0.00
Insignificance Indicator	250	250	250	250	250	100	25	100
Demolition Phase (Existing Water Treatment Plant)								
2030	0.43	12.73	4.17	0.01	0.52	0.41	0.00	0.00
2031	0.47	12.98	4.57	0.01	0.58	0.42	0.00	0.00
2032	0.39	12.48	3.78	0.01	0.45	0.40	0.00	0.00
Insignificance Indicator	250	250	250	250	250	100	25	100
Steady State Operating Phase (New Water Treatment Plant)								
2033	0.35	12.23	3.39	0.01	0.39	0.39	0.00	0.00
Insignificance Indicator	250	250	250	250	250	100	25	100

1. VOC=volatile organic compounds; NO_X=nitrous oxides; SO_X=sulfur dioxides; Pb=lead NH_3=ammonia

Alternative 1 (Preferred Alternative)

Under the Preferred Alternative, potential short- and long-term impacts to air quality are anticipated. These potential air quality impacts would occur across four distinct phases:

1) Construction Phase (New WTP);
2) Initial Operating Phase (New WTP);
3) Demolition Phase (Existing WTP); and
4) Steady State Operating Phase (New WTP)

The potential short-term air quality impacts would occur during phases one and three. The long-term impacts to air quality would occur during phase two when the proposed new WTP initiates operation and in phase four when the facility becomes fully operational, and the existing plant has been demolished.

CAP emissions were estimated for each phase. Short-term air quality impacts were estimated from fuel-fired equipment and from fugitive dust generated from excavation, trenching, and site grading activities during construction of the proposed new WTP for the first phase. CAP emissions were estimated from the diesel-fired emergency generator, diesel storage tank, and natural gas-fired boilers and heaters. Emission estimates from the demolition of the existing WTP during phase three were estimated from fuel-fired construction equipment and fugitive dust expected to be generated from this activity. A summary of annual CAP emissions during each phase is provided in Appendix B.

Based on the annual emissions expected to occur during phases one through four, the Preferred Alternative would not result in a significant impact to air quality (Table 3-2). A very minor increase in long-term, annual emissions of NOx would occur under the Preferred Alternative from installation of a diesel-fired emergency generator, a diesel fuel storage tank, two natural gas-fired boilers, and one gas-fired water heater after the existing WTP emission sources are removed from service. There would still be a net emission increase in NOx as a result of the preferred alternative even when emission reductions from demolition of the existing WTP are complete and all of its associated equipment are taken out of service. To mitigate potential air quality impacts from fugitive dust during phases one and three of the Preferred Alternative, water would be applied to the disturbed soils at least once per day with additional application of water as needed. Ship Creek riparian areas will be monitored to ensure no fugitive dust reaches the creek. Speed limits would be established and enforced for activities within the construction site, when exiting the construction site, and while transporting materials on graded and ungraded roads. Net Change in Emissions from Alternative 1 (Preferred Alternative) is from the operational differences in existing WTP and new WTP.

Table 3-2. Net Change in Emissions from Alternative 1 (Preferred Alternative)

	Annual Emissions (Tons/Year)							
	VOC	**NO_x**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**	**Pb**	**NH_3**
Existing WTP	0.54	7.92	4.11	0.02	0.58	0.58	0.00	0.00
New WTP	0.35	12.23	3.39	0.01	0.39	0.39	0.00	0.00
Net Change	-0.19	+4.31	-0.72	-0.01	-0.19	-0.19	0.00	0.00

No Action Alternative

Under the No Action Alternative, a new WTP would not be constructed and the existing WTP would not be demolished. The existing conditions would remain the same. As a result, no additional or new impacts related to air quality would be expected.

3.2.2 Safety And Occupational Health

Affected Environment

This section describes the known or potential health and safety hazards in an ROI that includes the existing and proposed new WTP and a 500-foot buffer around the buildings. Contamination at the existing WTP is discussed in Section 3.2.3.

The WTP is routinely staffed by one to five employees and occupied 24 hours per day, seven days a week. Generally, an operator is stationed in the control room while other staff conduct sampling, maintenance, and repairs throughout the WTP, as well as at the off-site well houses and chlorination buildings. The foreman spends much of their time in the office space on the first floor. There are no full-time occupants in the remainder of the facility unless maintenance or repairs are being performed.

The WTP has existing safety and occupational issues. In 2017, an on-site, visual life safety, occupational health inspection was completed at the WTP (Stantec 2017b). The report considered the following regulations when investigating the WTP:

- OSHA regulations and standards;
- National Fire Protection Association (NFPA) 101 Life-safety Code;
- NFPA 5000, Building Construction and Safety Codes;
- Unified Facilities Criteria 1-200-01 – DoD Building Code; and
- National Electric Code

Numerous life-safety conditions were identified, including:

- Architectural life-safety (egress, access, signage, and occupancy);
- OSHA worker safety (clearances, equipment hazards, handrails, and ladders);
- Fire protection (fire suppression, smoke detection, emergency lighting, and fire hazards); and
- Electrical safety

According to the report, the building's exterior load-bearing walls are of concrete construction and cannot be categorized into a construction type per current code. There is no record of manufacturer testing to confirm whether the building materials can meet noncombustible or limited-combustible requirements (Stantec 2017b).

An egress analysis was completed and found that the WTP does not meet the requirements of special industrial occupancies (Stantec 2017b). Specifically, the length of a common path, dead end corridors, and required travel distance to exit the building do not meet code. Panic hardware is missing at the WTP exits, and exit doors are not outfitted with required fire-rated hardware components. In addition, exits on three of the four WTP floors are narrowly accessible and do not meet egress code or are completely missing. First and third floor doors swing directly into the stairway, reducing the travel path clearance. To access the WTP's basement exit to the stairway, a six-foot-high pipe and a rolled concrete threshold exceeding one-inch must be crossed (Stantec 2017b).

According to the report, there is currently no fire alarm system or device(s) in the facility, and the building does not have a sprinkler system (Stantec 2017b).

A stair tower exit connects the four building stories, including the basement. The stair tower is concrete construction with windows and does not meet the required separation distance to the elevator machine room. The window glazing within the stair tower is not tempered, and therefore is not compliant with life-safety requirements. In addition, the windows are failing as the wood framing is decaying and delamination is present (Stantec 2017b).

Indoor Air Quality

Carbon monoxide is an odorless, colorless, and toxic gas. Because it is impossible to see, taste, or smell fumes, CO has the potential to seriously harm employees in the workplace if not properly controlled. NOx, including nitrogen dioxide and nitric oxide, irritates mucosal linings and may contribute to respiratory issues and decreased lung function. OSHA specifies 8-hour total weight average (8h TWA) permissible exposure limit (PEL) for indoor levels of CO and NOx which establish the highest level of exposure an employee may be exposed to these pollutants without incurring the risk of adverse health effects. The level for NOx is 1ppm 8hr TWA or a 5ppm ceiling, and the level for CO is 35 ppm 8h TWA or a 200-ppm ceiling.

Seismic Evaluation

The WTP is in an active seismic zone, and since 2018 the area has experienced multiple earthquakes with magnitudes approaching 5.0. An engineering evaluation of the WTP structural integrity was conducted following the November 30, 2018 magnitude 7.0 earthquake (Stantec 2018b). The WTP showed evidence of significant structural movement. Although no conditions were found that would make it structurally unsafe to occupy, cracking of ceilings, walls, and floors were noted. The report recommended a re-inspection of the damaged areas should the building experience another earthquake of 6.0 or greater.

Site Hazards

The proposed project area is generally undeveloped, and risks to those accessing the site include slips, trips, and falls; exposure to the elements (e.g., heat and cold); and interaction with wildlife such as insects, moose, or bears. The project site's emergency response services are provided by on-base entities; 673d ABW Security Forces Office provides law enforcement, 673d Civil Engineering Squadron/Fire Department provides fire service, and 673d Medical Group provides medical services (USAF 2020c).

Environmental Consequences

Alternative 1 (Preferred Alternative)

The health and safety of WTP workers would be improved with construction of the proposed new WTP because the new facility would be built to meet or exceed current building and safety codes. Workers would no longer be exposed to contaminated materials found in and around the WTP, including PCBs, LBP, and ACM, which have been found to cause cancer and other serious health effects. Currently workers are instructed to use personal protective equipment to ensure they are not exposed. Further, WTP workers would no longer work in a building that has substantial issues with egress and exits, fire suppression and alarms, and may be at risk during large earthquakes.

Without proper building controls, NOx and CO emissions have the potential to impact the proposed WTP's indoor air quality and, in turn, workers' safety. To avoid this, the proposed WTP would include a low NOx certified boiler, and the boiler flue would be terminated a minimum distance of 10 feet from all building intakes in accordance with building code requirements. The proposed WTP is designed to be slightly positively pressured in relation to the interior to avoid air pollutants from entering the building. Also, testing and balancing specification 23 05 93-3.5.L would be followed "to measure building static pressure and adjust supply, return, and exhaust air systems to obtain the required relationship between each to maintain approximately 0.05-inch differential static pressure near building entries." These measures will ensure the proposed WTP is positively pressurized before occupied by workers to reduce the potential for air pollutants to be drawn into the facility.

New WTP construction activities would present typical construction site safety risks to workers, which are minimized by complying with occupational health and safety regulations and by implementing standard site safety BMPs. The construction site would be signed, and public access prohibited. A health and safety plan would be developed and implemented. Workers would practice construction safety measures, such as holding daily safety briefings and wearing appropriate protective footwear, gloves, clothing, and hearing and eye protection.

Although demolition of the WTP would present additional risks, demolition site safety is largely a matter of adherence to regulatory requirements imposed for the benefit of employees and implementation of operational practices that reduce risks of illness, injury, and death. The health and safety of military and civilian workers are safeguarded by DoD and USAF policies designed to comply with OSHA and the EPA. These standards specify the amount and type of training required for industrial workers, the use of protective equipment and clothing, engineering controls, and maximum exposure limits for workplace stressors.

Demolition activities would increase the short-term risk associated with exposure to PCBs, ACM, and LBP during their removal. Contractors would be required to establish and maintain safety programs for their employees. Additionally, contractors would be required to manage and dispose of all hazardous and nonhazardous materials and wastes in compliance with federal and state laws and regulations. These efforts would be coordinated with the appropriate USAF representative. Specifically, demolition risk would be minimized/mitigated by complying with all occupational health and safety regulations. Workers would be required to be properly trained/certified, wear the proper personal protective equipment as determined by the quantity and type of toxic materials, use proper abatement methods, and the site would have air monitoring and sampling before, during, and after the demolition.

Construction and demolition personnel working near heavy equipment could potentially be exposed to noise levels above 90 decibels; this is above the permissible noise exposure level as defined by OSHA (29 CFR § 1910.95). These levels would be reduced to permissible levels through feasible controls, such as the use of hearing protection equipment. Since the WTP is on Arctic Valley Road, it is possible that workers and the general public could approach the project area and encounter construction equipment and particulates generated during demolition activities. BMPs will be implemented by the contractor through an Alaska Pollutant Discharge Elimination System (APDES) Construction General Permit (CGP) storm water pollution prevention plan (SWPPP). BMPs to be implemented under the SWPPP will include controlled project entrances and exits and periodic dust control watering to minimize fugitive dust.

WTP demolition would permanently remove an unsafe building and would result in long-term, beneficial impacts to WTP worker and visitor health and safety. Construction and demolition activities would result in short-term, minor adverse impacts to contractor safety within the project area which would be minimized by regulatory requirements and approved safety plans. No significant impacts would occur to safety or health under Alternative 1 (Preferred Alternative).

No Action Alternative

Under the No Action Alternative, the health and safety of WTP workers would continue to be at risk. Workers would continue to be exposed to contaminated materials that are over EPA clean-up thresholds in and around the WTP and have to take extra precautions. WTP workers would also continue to work in a building that has improper egress and exits, is lacking updated fire suppression and alarm systems, and may be at risk of serious damage or collapse during large earthquakes. The moderate adverse impacts to WTP workers' health and safety due to the No Action Alternative would continue until the WTP is taken offline.

There would be no health or safety risk to construction or demolition personnel since no new construction or demolition would occur under the No Action Alternative.

While risks to safety and occupational risks would remain under the No Action Alternative, they are not significant.

3.2.3 Hazardous Materials/Waste

Affected Environment

This section describes the hazardous materials and waste in an ROI that includes a 500-foot buffer around the existing and proposed new WTP.

As discussed in Chapter 2, the existing WTP building contains PCBs, LBP, and ACM. The presence of these materials has been documented in numerous reports since 2016 when the planning for building upgrades began, including:

- Refurbish Water Treatment Plant Condition Assessment (Stantec 2016);
- Hazardous Materials Survey Report (Stantec 2017a);
- Plant Abatement Hazardous Material Data Report (Stantec 2018a);
- Initial Preliminary Assessment/Site Investigation for the Backwash Outfall Area (EMI 2018) and
- PCB Removal Work Plan WTP Backwash Channel (Stantec 2020)

Polychlorinated Biphenyls

Hazardous material investigations have documented PCB contamination throughout WTP building materials and structural components. In early 2017, PCBs were documented in paints on the WTP interior and exterior, along with coatings in contact with drinking water in process tanks. Additional sampling of materials within the building in later 2017 confirmed PCBs in paints and migration of the PCBs into concrete wall substrates. In 2018, four separate building material sampling events confirmed PCBs in paint, concrete, sludge, caulk, and mastic within the WTP. Incremental sampling of concrete (0.25-inch, 0.50-inch, and one-inch depths) has found PCB penetration to the maximum one-inch depth sampled.

PCB concentrations in the WTP range from "non-detect" (concentrations less than the laboratory detection limit) to 88,400 ppm. Building material samples which were non-detect for PCB Aroclors[1] had reporting limits below 1 ppm. The use of PCBs is not authorized for use under TSCA, which regulates the use, cleanup, and disposal of PCBs. PCB-containing building materials greater than 50 ppm are classified as PCB bulk product waste under 40 CFR § 761.3. Bulk product waste (in this case paint) with PCB concentrations greater than 50 ppm must be removed to less than or equal to 50 ppm.

Deterioration and wear of submerged coatings is evident in water-containing tanks. Remaining coatings are in dry locations, are very well adhered, and were difficult to remove for sampling efforts. Similarly, the paint on concrete walls and ceilings, as well as metal framing, is well-adhered and intact except in the Boiler Room B15 and throughout the basement where moisture has caused coatings to deteriorate.

A survey of WTP lighting fixtures found PCBs in various types of fluorescent luminaires at the WTP. The results of the survey stated that all luminaires that have not been replaced or do not have the label "NO PCBs" likely contain PCBs. As the electrical equipment and cables are in use, no sampling of these components has been undertaken; however, there is the potential for electrical equipment, wire insulation, and heat transfer systems to also contain PCBs.

PCB coatings exceeding EPA's threshold of 50 ppm are found in concrete tanks that hold process or drinking water (Stantec 2017a). Between 2008 and 2017, drinking water samples analyzed once every three years reported non-detectable concentrations of PCB compounds. In 2017, once PCBs were detected in WTP paint and coatings, sampling frequency was increased to a weekly program (EPA 2020).

PCBs and drinking water are discussed in the Water Resources (Section 3.2.4), and PCB soil contamination is discussed in Earth Resources (Section 3.2.5).

[1] Aroclor is a PCB mixture produced from approximately 1930 to 1979. It is one of the most commonly known trade names for PCB mixtures. There are many types of Aroclors and each has a distinguishing suffix number that indicates the degree of chlorination (EPA 2022b).

Lead-Based Paint

Surveys have documented lead levels in paint coatings throughout the WTP. However, only those that are at or above 5,000 ppm for bulk samples are classified as "lead-containing" under 40 CFR § 745.220. Sampled WTP components included:

- Windows, doors, and associated components;
- Metal guardrails and handrails;
- Interior wall concrete;
- Metal tanks; and
- Janitor closet's porcelain sink

Lead detected in surface soil surrounding the perimeter of the WTP roof drip line is discussed in Earth Resources (Section 3.2.5).

Asbestos-Containing Materials

ACM have been documented at the WTP in the following building materials (Stantec 2016; Stantec 2017a; Stantec 2018a):

- Vinyl asbestos floor finishes and underlying mastic located in the lab, control room, and adjacent staff break area (the material is concealed at the control room and staff break area by the existing floor tile finish);
- Cement asbestos board wall panels that are used as a protective finish in various locations of the facility, including within the:
    - Fume hood located in the laboratory;
    - Chemical room of the third level;
    - Filter bay and adjacent electrical room, vestibule of the second level; and
    - Pipe gallery of the basement;
- Hard insulation fittings on elbows and couplings of thermal system pipe runs identified at various locations of the facility, including the stairwell, control room located at the second level, and in the basement;
- Caulking at perimeter of exterior window frames located within the stairwell and in the chemical room; and
- Solid-core laboratory countertops

To avoid the potential for releasing asbestos into the WTP, the roof of the facility was not sampled; however, due to the building's age and method of construction, it is assumed that the roof also contains asbestos (Stantec 2018a).

Leaking Underground Storage Tanks

There is an active contaminated site due to diesel leaking from two 1950s-era, 10,000-gallon underground storage tanks (USTs 48 and 49) at the WTP (USAF site TU101 – Building 28-008 [formerly CC-FTRS-01] ADEC File No.: 2102.26.028). The USTs were removed and site investigations conducted by USAF found that contamination extends within groundwater and soil beneath the WTP building (USAF 2014). Diesel groundwater contamination is discussed in Water Resources (Section 3.2.4), and diesel soil contamination is discussed in Earth Resources (Section 3.2.5).

Universal Wastes

Universal wastes are a special group of hazardous wastes that are widely generated by businesses. To streamline the proper management of these wastes, the Universal Waste Rule

exempts certain wastes from the hazardous waste rule requirements as long as they are managed to prevent release to the environment and properly recycled or disposed of. The WTP contains various universal wastes including batteries, fluorescent lamps, mercury-containing thermostats, and control devices.

Environmental Consequences

Alternative 1 (Preferred Alternative)

New WTP Construction

Construction of the proposed new WTP would involve the use of common hazardous materials and petroleum products. Vehicles and equipment would contain fuel, oils, and lubricants. Construction equipment may be fueled on-site, and minor repairs may be conducted on-site; however, routine or major repairs would be done off-site at an appropriate maintenance facility. In addition, construction could generate some waste such as used oil or oily rags, and leaks or accidental spills or releases could occur. Any spills will be reported in accordance with the JBER Spill Management Plan (SMP).

To ensure safe handling of hazardous materials and minimize the potential for spills or accidents during construction, materials would be managed in compliance with applicable regulations, USAF policy and procedures (including 29 CFR 1910.1200, 49 CFR 171-178, federal acquisition regulation clause 52.223-5, federal standard 313, AFMAN 32-7002, AFMAN 23-209, AFI 90-821, JBERI 32-2001), the JBER Integrated Hazardous Material Plan, and the JBER Emergency Management Plan. DU and its contractors will be responsible for identification, proper handling, use, storage, transportation, and disposal of all hazardous material brought on JBER, including securing advanced approval of use of hazardous material on JBER and maintaining proof of approval. Management of hazardous material on JBER will be coordinated with the DU Contracting Officer Representative and submitted to the JBER Hazardous Material Coordinator.

All spills and encounters with historic spills will be reported to JBER Fire via 911, per the JBER SMP. The contractor will work with the JBER Spill Manager to ensure proper spill reporting to the agencies. All military, civilian, and contractor personnel operating on JBER will abide by the most current version of the JBER SMP for reporting spills.

While there could be some minor adverse impacts at the proposed project site, there would be no significant impacts to the human or natural environment from hazardous materials and waste from construction of the proposed new WTP under Alternative 1 (Preferred Alternative).

Existing WTP Demolition

During structural demolition of the WTP, hazardous materials will be managed in accordance with applicable EPA and ADEC regulations and agency-approved work plans that would be prepared by a qualified third-party contractor, as well as in accordance with USAF and JBER policies and procedures described above. The selected contractor would have experience with drafting and implementing required work plans and working with ADEC and EPA to obtain approval of the building demolition plans and other contaminated site cleanup, focused on removal and disposal of PCBs, LBP, and ACM. The approved work plans would include details on how hazardous and non-hazardous waste streams would be characterized and packaged for disposal. As working documents, the work plans would be updated and approved by the EPA and ADEC if unexpected conditions arise as work progresses.

The selected contractor's initial steps would be to identify building materials that could be locally recycled or salvaged as construction debris defined by ADEC Solid Waste Program 18 AAC 60. The selected contractor will follow ASTM E2893-16e1 Standard Guide for Greener Cleanups which provides a process for identifying, prioritizing, selecting, implementing, documenting, and reporting activities to reduce the environmental footprint of a cleanup. This would include identifying any material with PCB concentrations less than 1ppm which can be placed in most of the permitted landfills in Alaska. Waste identified with PCB concentrations greater than 1 ppm must be disposed in a landfill approved for PCB bulk product waste or PCB bulk remediation waste as defined in 40 CFR 761. This material is considered regulated PCB waste and must be disposed of in an EPA-licensed Treatment, Storage and Disposal Facility (TSDF) outside of Alaska.

It is expected that the WTP demolition will generate approximately 52 tons of PCB bulk product waste with concentrations of 1.0 ppm or greater,[2] and this waste would be transported out of state for disposal at a TSCA-approved landfill. Sample results indicate PCBs have migrated into the concrete at depths of over 1 inch. If PCB paint coating could not be successfully removed from the concrete and other painted materials and the concrete could not be abated to less than 1.0 ppm PCBs, the PCB bulk product waste is expected to be as much as 27,000 tons. PCB bulk product wastes would be properly packaged and shipped via an approved carrier to aTSDF outside Alaska.

Much of the LBP waste stream at the WTP is comingled with PCBs and cannot be separated due to the nature of the contaminated coatings. Therefore, the same quantity of LBP contaminated material as PCB-contaminated material would be expected to be generated during the WTP demolition. The LBP waste would be considered and treated as TSCA waste and would be containerized and shipped to an EPA-permitted TSDF.

It is expected approximately 28 tons of ACM waste that is not contaminated with lead or PCBs would result from the JBER WTP demolition. The ACM waste would be transported and disposed at a landfill approved to accept ACM, likely the Anchorage Regional Landfill.

It is expected that demolition of the WTP would produce two to five tons of non-hazardous wastes, including general construction debris such as unpainted materials, uncontaminated fixtures, and other solid waste. Because this waste stream is considered non-hazardous, it would be disposed at the Anchorage Municipal Landfill.

Demolition activities would result in long-term, minor positive impacts to hazardous materials and wastes that exist within the WTP. Hazardous waste would be added to approved waste facilities; therefore, no adverse significant impacts are anticipated from hazardous materials or waste under Alternative 1 (Preferred Alternative).

[2] The estimates of hazardous wastes are based on quantities that were characterized, transported, and disposed from the former JBER Central Heat and Power Plant (CHPP) demolition project. The demolition of the WTP is expected to have a similar waste stream, but because the WTP is roughly one-third of the size, the estimated PCB waste stream will be about one-third the volume of the former CHPP's waste stream.

No Action Alternative

Under the No Action Alternative, the hazardous materials within and around the current WTP would remain. As mentioned in Section 2.4.2, the WTP would continue to operate under and comply with the EPA-directed interim operating measures and sampling. WTP workers would continue to be exposed to the health risks due to PCBs, LBPs, and ACM.

While the effects due to hazardous materials, in particular PCBs, could be adverse and long term throughout JBER under the No Action Alternative, they would be less than significant because the WTP would continue to operate under the EPA's interim measures. Once the interim measures expire, the EPA could require the WTP to cease operation because of the risk of PCB exposure to the WTP staff and JBER's population and workers. Because the operation of the WTP complies with EPA measures, no significant adverse effects due to hazardous materials and waste would be expected under the No Action Alternative.

3.2.4 Water Resources

Affected Environment

This section describes water resources in an ROI that includes the JBER area.

Surface Water

The entire project area is located within the Ship Creek watershed. The largest watershed on JBER, Ship Creek watershed flows through the installation for 13.3 miles before emptying into the Knik Arm (USAF 2016b). Ship Creek is located approximately 850 feet from the project area. The proposed project is not within a 500-year floodplain (FEMA 2009).

The upper dam on Ship Creek forms a 2.8-acre reservoir, which provides the majority of the potable water for JBER and a portion of the water for the Municipality of Anchorage (described below). The drinking water dam, constructed in 1952, severely affects the creek's downstream hydrology and stream dynamics (USAF 2022b).

To protect surface water quality, JBER limits development and U.S. Army training in the vicinity of Ship Creek to the greatest extent possible (USAF 2022b).

Groundwater

Two freshwater aquifers underlie most of JBER and flow west from the Chugach Mountains to Cook Inlet and are recharged by ground water originating from precipitation in the mountains. The two aquifers lie in different soil strata and are separated by a 60- to 200-foot layer of impermeable Bootlegger Cove Clay (USAF 2022b).

The upper, unconfined aquifer lies in a 30- to 100-foot-deep layer of well-bedded and well-sorted gravel near the surface. This aquifer usually can be accessed at depths of less than 50 feet. There seems to be no interconnection between the two aquifers. Shallow aquifer ground water movement follows, for the most part, that of the surface topography. Flow is to the northwest along the northern limb of the moraine and to the southeast along the southern limb. The ground water divide coincides with the crest of the moraine. This aquifer is not used for drinking water (USAF 2022b).

The lower, confined aquifer lies in a 100- to 200-foot layer of sand and gravel. Impermeable clay above produces artesian conditions and protects the lower aquifer against seepage and pollutants from the surface; thus, water quality of this artesian aquifer is excellent. It is estimated that 75 million gallons of water originating from the mountains recharges the aquifer each day.

This aquifer usually can be accessed at 200 to 400 feet below the surface. JBER does not use this aquifer for its main source of drinking water, but as detailed in Chapter 2, it is a standby drinking water source when surface water supplies cannot meet demand. The Municipality of Anchorage uses water from this aquifer for various services, including industrial, commercial, domestic, and public supply (USAF 2022b).

Data collected during the 2013 site characterization activities conducted for USAF site TU101 – Building 28-008 (introduced in Hazardous Materials, Section 3.2.3) confirms the presence and concentrations of contaminates of potential concern in groundwater around the existing WTP (USAF 2014). Diesel range organics (DRO), residual-range organics, and benzene were detected in groundwater above the 18 AAC 75 Table C Groundwater Cleanup Levels in monitoring wells installed at this site. DRO, gasoline-range organics, benzene, naphthalene, polycyclic aromatic hydrocarbons, and arsenic were detected above screening levels. In addition, arsenic, benzene, and naphthalene were detected above screening levels in the water sample from an upgradient well, and DRO was detected above the screening level in the water sample from a downgradient well. No contaminants exceeded screening levels in water samples from four downgradient wells. Contaminated soil remains on the site and could pose a continuing source of contamination to groundwater (USAF 2014).

The groundwater plume (defined as the extent of DRO above the Table C Groundwater Cleanup Level) extends approximately 200 feet from the WTP toward the northwest and is approximately 220 feet wide. Historically, the depth to the top of the plume varies between approximately 40 and 45 feet below ground surface, and the seasonal water table fluctuation (smear zone) is approximately five feet. Groundwater monitoring completed in 2019 and reported in the *2019 Monitoring of State-Regulated Sites Annual Report* indicates the plume is stable (i.e., not migrating downgradient) and shrinking and that contaminant concentrations in groundwater are not increasing (USAF 2020b). Limited passive free product (diesel) recovery has occurred. Long-term groundwater monitoring continues, and land use controls/institutional controls are in place to prevent access and exposure to contaminated soil and groundwater.

Groundwater conditions were recently documented at seven locations within the project area during a field-based geotechnical analysis focusing on the proposed new WTP location (CRW 2021a). If observed during drilling, groundwater was recorded on the borehole or test pit logs. Also, piezometers were installed in some boreholes and test pits, and groundwater levels were recorded after the completion of drilling/excavating. Groundwater was only observed at one location on the site. A test pit 300 feet southwest of the WTP and 175 feet south of Arctic Valley Road had groundwater at 6.5 feet below the ground surface at the time of excavation. Groundwater was recorded in the test pit two weeks and two months later at 6.4 feet and 7.2 feet below ground surface, respectively.

Water Sources/Rights

JBER has two raw water sources: one source is Ship Creek reservoir and the other includes three supply wells feeding from the lower confined groundwater aquifer described above. JBER's average drinking water demand is 3.0 MGD, and the peak demand is 7.5 MGD.

Water rights for the installation stem from Executive Order 8102, Withdrawal of Public Lands for Use as a Military Reservation; Alaska 4 FR 1726 (May 2, 1939) which established a temporary withdrawal as a military reservation. Executive Order 8102 was amended by Executive Order 9526, 10 FR 2423 (March 2, 1945) when the jurisdiction of the property, including riparian and Federal Reserve Water Rights, was then vested in various departments, in this case the Army.

State of Alaska water use permits incorporating raw water from Ship Creek and the Ship Creek Dam were issued to the 172nd Infantry Brigade (Alaska) with priority appropriation dates in 1941 and 1967 for Ft. Richardson and Elmendorf Air Force Base (Certificate of Appropriation of Water Certificate Numbers 1554 and 1558, respectively).

Water Quality

Surface water quality within JBER's cantonment area is managed by the 673d CES/CEIEC Compliance. As an operator of industrial facilities, JBER is required to operate under ADEC's Multi-Sector General Permit (MSGP) for Storm Water Discharges Associated with Industrial Activity. Under the MSGP, JBER is responsible for ensuring stormwater runoff (rain, snow, snowmelt) that comes into contact with industrial activities (aircraft refueling, quarrying operations, hazardous waste storage) and associated materials does not adversely affect water quality of receiving water bodies. A key condition of the MSGP is the development and implementation of a SWPPP, which describes JBER's stormwater conveyance system, potential pollutant sources, stormwater control measures, water quality monitoring procedures, and facility inspections (USAF 2022b).

Water quality within the Ship Creek reservoir is good. To maintain the water quality of JBER's drinking water source, JBER has limited development along Upper Ship Creek above the dam (USAF 2022b).

As mentioned in Section 2.2, process water is sampled throughout the WTP weekly, and to date, there have been no exceedances of EPA drinking water standards.

Environmental Consequences

Preferred Alternative

Groundwater

The Preferred Action would not impact groundwater. Groundwater was not found in the area where the new WTP is proposed (CRW2021a). While there is diesel-contaminated groundwater in the existing WTP area, it is not expected to be encountered during demolition activities, since work would be limited to removal of the building foundation and adjacent soil. Operation of the proposed new WTP would reduce reliance on groundwater via existing wells. No adverse significant impacts are anticipated to groundwater under Alternative 1 (Preferred Alternative).

Water Sources/Rights

The Preferred Alternative would meet existing average and peak demand water requirements.

Water Quality

The Preferred Alternative is not expected to impact surface water quality. During construction of the proposed new WTP and demolition of the existing WTP, protective measures including a SWPPP would be prepared, and a Notice of Intent to seek coverage under the APDESCGP would be completed prior to construction. The SWPPP would include measures needed to comply with applicable regulations, minimize the potential for spills, and respond to a spill if one occurred. As a result, USAF anticipates no significant short- or long-term adverse impacts as a result of Alternative 1 (Preferred Alternative).

Because a new WTP would be constructed, the Preferred Alternative would eliminate all future risk of PCBs contaminating JBER's drinking water supply and the issue of noncompliance with

EPA regulations. In this case, there would be a benefit to JBER's drinking water quality under Alternative 1 (Preferred Alternative).

No Action Alternative

Groundwater

Under the No Action Alternative, to prevent water demand from exceeding production, groundwater would continue to be used on occasion via existing potable water wells.

Water Sources/Rights

The No Action Alternative would not meet JBER's existing average and peak demand water requirements. Recently, the potable water wells have been used on occasion to prevent water demand from exceeding production. The existing wells, however, are not capable of supplying adequate water volumes for extended periods of time because they are at the end of their design life and need to be upgraded. Even if the wells were upgraded, they would not withstand outside threats since the wells provide water through a single line with no redundancy.

Water Quality

Under the No Action Alternative, as detailed in Section 2.4.2 and above in this section, the existing WTP would continue to produce water to the required drinking water standards. To achieve this, the operators would continue to limit flow through the plant to less than 3.0 MGD at times of high raw water solids and color during spring break-up and fall rains.

The No Action Alternative would cause the WTP to remain out of compliance with the EPA and would continue to operate under and comply with interim operating measures and sampling procedures which are outlined in the EPA's Approval of Interim Measures to Prevent Releases of PCBs and Ongoing Monitoring, Pursuant to 40 CFR § 761.6l(c) at Doyon Utilities Water Treatment Plant AKR000204883 (EPA 2022c and EPA 2020). Once the interim measures expire (or if there are exceedances of PCB concentrations in tested water), the EPA could require the WTP to cease operation because of the risk of PCB exposure through drinking water to JBER's population and workers. Closure of the WTP could result in a significant impact to water resources since there would not be enough drinking water to meet JBER's needs under the No Action Alternative.

3.2.5 Earth Resources (Geology / Soils)

Affected Environment

This section describes the geology and soils in an ROI that includes the existing and proposed new WTP and a 500-foot buffer around the buildings.

Geology

The geology of the JBER area is described in detail in the Integrated Natural Resource Management Plan for JBER (USAF 2022b). The geological deposits consist of alluvial fans, alluvial cones, and emerged deltas. The area is within moderate to high seismicity and is subject to relatively large earthquakes and strong ground motion (CRW 2021a).

Soils

According to a geotechnical analysis completed by a licensed geotechnical engineer (CRW 2021a), soils in the project area are predominantly gravel and are generally well bedded and well sorted. The proposed new WTP site is generally composed of a thin organic mat underlain

by sandy silt/silty sand. Below the sandy silt/silty sand is sandy gravel. The existing WTP is partially mapped as man-made fill, chiefly gravel and sand with some silt and clay-size material (CRW 2021a).

The WTP discharges wastewater resulting from the drinking water treatment process (or process wastewater) primarily from the filter backwash directly to the forested area below the WTP. The backwash channel begins at the WTP basement discharge structure and extends about 400 feet. Flow disperses at the end of the main channel into two minor channels and a wide, flat plain area. Since operations began, paint chips from process water tanks captured in the filters have been discharged during the backwash process to this channel. A soil sampling program for PCBs and LBP was conducted for the backwash channel in 2018. All the soil samples collected during the sampling program have had lead detections levels below the project action level of 400 ppm. The highest lead result was 38.6 ppm. Of the 17 soil sample locations, 11 had detections of PCBs. Eight soil samples had concentrations of PCBs above the project action level of 1 ppm. The highest detected level of PCBs was 6.05 ppm. It was observed that soil samples closer to the outfall source had higher PCB concentrations, and the soil samples from the center of the channel had higher concentrations than the sides (EMI 2018).

PCB coatings and LBP have also been found in soil immediately adjacent to the WTP foundation in the roof drip line and in the backwash channel. Soil samples collected in 2018 at three locations along the building exterior found PCBs ranging from non-detect to 0.308 ppm. Lead detections in the same samples ranged from 16 ppm to 64 ppm.

As mentioned in Hazardous Materials (Section 3.2.3), there is an active contaminated site due to diesel leaking from two, 1950s-era, 10,000-gallon USTs at the WTP (ADEC File No.: 2102.26.028). The USTs were removed and site investigations found that diesel-contaminated soil extends beneath the WTP building.

The proposed project area is not a location where Perfluorooctane Sulfonate and Perfluorooctanoic Acid (PFAS/PFOA) would be expected to be present in soil or groundwater. The area surrounding the WTP was not identified as an aqueous film forming foam solution area in JBER's 2018 Site Inspection Report for Aqueous Film Forming Foam Areas (CH2M Hill 2018) and it is not being examined in JBER's on-going remedial investigation for PFAS/PFOA compounds. The proposed project area does not have a history of PFAS/PFOA compounds being released into the environment (e.g., fire training areas, past fire suppression activities using aqueous film forming foam); therefore, it is not assumed to be at risk for PFAS/PFOA compounds in soil or groundwater.

To date PFAS and PFOA compounds have been non-detect in drinking water supplied to the installation from the JBER WTP. DU conducted drinking water sampling in accordance with the 2017 Department of the Army Memorandum for Supplemental Drinking Water Monitoring Guidance for PFAS/PFOA compounds at the JBER WTP in 2019 and 2022. Water samples collected before treatment (raw water) and after treatment but before distribution were analyzed for PFAS/PFOA compounds by EPA method 537 in 2019 and revised method 537.1 in 2022. Sample results indicated the Ship Creek water supply was non-detect at the method reporting limits of 0.002 micrograms per liter (µg/L) in 2019 and 0.0019 µg/L in 2022, which is below the EPA Lifetime Health Advisory for PFAS compounds of 0.07 µg/L. Based on the current results, sampling will continue once every 3 years in accordance with the 2017 DoD guidance.

Environmental Consequences

Alternative 1 (Preferred Alternative)

Design of the Preferred Alternative will include recommendations contained in the geotechnical report, including seismic design parameters from the American Society of Civil Engineers for the Maximum Considered Earthquake and International Building Code. Fill material for the Preferred Alternative would come from the existing and permitted borrow site just north of the proposed WTP site. Unwanted excavated material would likely be disposed at the same borrow site or at another approved upland location.

The PCB-impacted soil and sediment in the WTP backwash discharge channel that exceeds the ADEC soil cleanup level of 1.0 ppm would be managed under a separate work plan and would be remediated during the building demolition. The contaminated soil would be considered PCB remediation waste and would be managed and disposed outside of the state of Alaska. It is expected that approximately 510 cubic yards (cy) or 825 tons of PCB remediation waste will be generated during cleanup. The contaminated soil and sediment would be packaged and sent for disposal at an EPA-permitted TSDF.

As stated in Hazardous Materials/Waste (Section 3.2.3), there is an active diesel-contaminated site that extends beneath the WTP building, and institutional controls are in place that restrict soil excavation without ADEC approval.

Earth resources would be improved under the Preferred Alternative because contaminated soils would be removed for proper disposal; therefore, no adverse significant impacts are anticipated to earth resources under Alternative 1 (Preferred Alternative).

No Action Alternative

Under the No Action Alternative, no new WTP would be constructed, and PCB- and LBP-contaminated soil would remain. The WTP would continue to operate under and comply with the EPA-directed interim operating measures and sampling. Once the interim measures expire, the EPA could require the WTP to cease operation, and PCB and LBP soil clean up measures would likely be initiated. Under the no action alternative, diesel-contaminated soil would continue to be actively managed by USAF as the designated Responsible Party on record with ADEC. Because the EPA and ADEC would continue to have oversight of soil contamination at the WTP, no significant adverse effects to earth resources would be expected under the No Action Alternative.

3.2.6 Cultural Resources

Affected Environment

This section describes cultural resources in an ROI that includes the proposed project's direct and indirect Area of Potential Effect (APE). The direct APE includes the area where the proposed new WTP is planned, where the WTP would be demolished, and areas where material borrow, soil disposal, and project staging would occur. The indirect APE includes a 500-ft buffer area around the proposed new WTP and a 100-foot buffer around direct APE areas outside the 500-foot buffer.

Two archeological investigations were conducted within the Preferred Alternative's APE. In 2005, archaeologists from the Center for Environmental Management of Military Lands (CEMML) surveyed the portion of the APE north of Arctic Valley Road. CEMML's pedestrian

survey included transects and systematic shovel tests in areas with a higher probability of containing cultural deposits. Neither the pedestrian survey nor the shovel testing identified any cultural resources within the APE (Raymond-Yakoubian 2006).

In June 2022, another field-based archeological survey of the APE was conducted at the request of the Chickaloon Village Traditional Council (CVTC). The survey consisted of pedestrian transects spaced at 15-meter intervals and shovel tests. Three cultural depressions that are assumed to be foxholes or training positions, a bark-stripped birch tree, an old electrical pole, and staircase were discovered during the survey; however, no features were found within the footprint of the proposed new WTP. No cultural materials were found during shovel testing. None of the discovered features were determined to be eligible for the National Register of Historic Places (CRC 2022a).

The existing WTP was constructed prior to 1951 and was added on to between 1951 and 1957. The WTP was evaluated for eligibility for the National Register of Historic Places in 2022 (CRC 2022b). Based on the evaluation completed by historical architects and archaeologists, the WTP was recommended as eligible for listing on the National Register of Historic Places under Criterion C as a significant example of the International Style.[3] Generally, the most common characteristics of International Style buildings are rectilinear (sides meeting at right angles) forms; plane surfaces with no applied ornament or decoration; flat roofs; open interior spaces; and the use of glass and steel with usually less-visible reinforced concrete (Chicago Architecture Center 2022). Further, the WTP retains a high level of all seven aspects of integrity (i.e., it has the ability to convey its significance) and, despite some condition issues and very minor exterior changes, its historic character is nearly intact (CRC 2022a).

Other known cultural resources in the general area, but outside the Preferred Alternative's ROI or APE, include prehistoric and historic sites. South of the existing WTP is a boulder spall (ANC-03334) and the Ship Creek Bridge (ANC-01831). West of the WTP is the Alvin Meyer Homestead site (ANC-01166) and "Five Historic and Prehistoric Features" (ANC-00822). To the northwest is the Moose Run Golf Course (ANC-01335) that includes three Quonset huts (ANC-01332, ANC-01333, ANC-01334), the clubhouse (ANC-01336), and the irrigation pump building (ANC-04484). To the north, ANC-02592 is a concentration of five stone tools, flakes, and a hearth (CRC 2022a).

Environmental Consequences

Alternative 1 (Preferred Alternative)

USAF transmitted a finding of no historic properties affected by construction of a new water treatment plant to the State Historic Preservation Office (SHPO), Anchorage Historic Preservation Commission, and Tribal entities, including the Native Village of Eklutna, CVTC,

[3] Criterion C is the "Embodiment of the distinctive characteristics of a type, period, or method of construction, or representation of the work of a master, or possession of high artistic values, or representation of a significant and distinguishable entity whose components may lack individual distinction." (NPS 2002).

Knik Tribal Council, Native Village of Tyonek, Chickaloon Moose Creek Native Association, Tyonek Native Corporation, Eklutna, Inc., and Cook Inlet Region Incorporated on January 28, 2022. The SHPO concurred with the finding on February 11, 2022; however, in a February 18, 2022 letter, CVTC requested that the area be re-examined for cultural resources. USAF agreed, and a work plan for the survey was submitted for SHPO and CVTC review on April 15, 2022. Although the SHPO found that the survey plan was appropriate, CVTC made several recommendations for additions to the methods and reporting, and many of these changes were incorporated prior to the survey.

The entire ROI/APE was surveyed and subsurface testing was completed on June 1 and 2, 2022. Three depressions, a bark-stripped birch tree, and recent structural material were documented. The stratigraphy, morphology, and placement on the landscape of the three depressions are consistent with fighting positions (foxholes). The bark-stripped tree was dated to approximately 20 years old and is unlikely to be associated with Dene activity (as a marker, for making material culture objects, or other function). The structural remains were deemed most likely associated with a structure that was built in the 1960s and demolished by 1999. None of the abovementioned items were found to be eligible for the National Register of Historic Places. USAF transmitted a finding of no historic properties affected in the direct APE and no adverse effect to historic properties within the indirect APE to the SHPO and Tribes on September 15, 2022. The SHPO concurred with the finding on October 28, 2022. No responses from Tribes were received.

On October 25, 2022, USAF notified the SHPO, Tribal entities, and the Anchorage Historic Preservation Commission that the WTP was eligible for the National Register of Historic Places and demolition would result in adverse effects to historic properties. The SHPO concurred on November 10, 2022. No comments were received from Tribal entities or the Anchorage Historic Preservation Commission.

Implementation of the Preferred Alternative will adversely and permanently affect the WTP, which is a historic property eligible for listing in the National Register of Historic Places under Criterion C — as a significant example of the International Style. A Memorandum of Agreement (MOA) was prepared to resolve these adverse effects under 36 CFR Part 800 (MOA; Appendix A). Mitigation established in the MOA includes documentation to Historic American Building Survey Level III standards (architectural drawings photographs, and written description submitted to the Library of Congress). The MOA also includes installing outdoor interpretive panels discussing the architectural significance of the WTP and how it provided water to JBER. Although the impacts to historic properties will be severe, adverse, and long-term, by implementing the MOA, the impacts to cultural resources from Alternative 1 (Preferred Alternative) will be appropriately mitigated to insignificance.

No Action Alternative

The No Action Alternative would result in no change to the WTP or the landscape. No impacts related to cultural or historic resources would be expected.

3.2.7 Socioeconomic Resources / Environmental Justice

Affected Environment

This section describes socioeconomic resources and environmental justice populations in the ROI that includes JBER.

The total payroll at JBER is about $1.1 billion, the overall operations and maintenance expenditures are about $477 million, and JBER's economic impact in Alaska is about $1.9 billion (JBER 2022a). JBER's median annual household income is $60,721. The median income for JBER residents under the age of 25 (the majority of JBER's population) is about $35,000 (U.S. Census 2020).

According to the 2021 Defense Spending report for Alaska (DoD 2022a), there are a total of 9,808 active-duty personnel assigned to JBER. JBER is also the home base for 769 reserve and 2,554 guard personnel and employs an additional 3,338 civilians. The total number of dependents of all personnel is 15,534. According to the U.S. Census Data (2020), 13,317 people live on base. The median age of JBER residents is 22 and most (55%) are male. Of the 3,156 households on base, about 83% are families and 63% of the households (about 2,000) have children. There are about 5,600 children under the age of 19 living at JBER (US Census 2020).

Housing at JBER is varied. Dormitories are provided for unaccompanied personnel between the ranks of E1 through E3 and E4 with less than three years of service. For higher-ranked military members and members with families, there are 19 distinct housing neighborhoods in JBER split between the Elmendorf and Richardson sides of base. There is a utility allowance program for gas and electric. Water, sewer, refuse, and recycling are free to residents. Housing on base is a public-private partnership with Aurora Military Housing, which owns the family housing and is responsible for maintaining, repairing, and managing the community (My Base Guide 2021).

There are four child development centers on base that care for children between the ages of six weeks and five years (JBER Life 2022). Elementary schools on JBER lands include Aurora Elementary (493 students), Orion Elementary (469 students), Government Hill Elementary School (457 students), and Mountain View Elementary (293 students) (Anchorage School District 2022). Ursa Major Elementary School also typically operates on JBER; however, the school is not currently in operation due to 2019 earthquake damage.

The ethnicity and poverty status at JBER was compared to data for the Municipality of Anchorage and 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 Preferred Alternative. Table 3-3 outlines the total population, median household income, percent of people living below the poverty level, and percent of people who identify as a minority population for JBER, the Municipality of Anchorage, and the State of Alaska.

The demographics of JBER are generally reflective of the wealth distribution and ethnic diversity of Anchorage and the State of Alaska. Approximately 41% of the total population of the State of Alaska is a minority (non-white) and about 42% of Anchorage is a minority. The JBER community has a racial makeup like the Anchorage and Alaska census areas, with minorities making up 35% of the total population. JBER and its adjacent communities have a slightly higher percentage of low-income residents than the Municipality of Anchorage, but a lower percentage of low-income residents than the State of Alaska census area. Approximately 16% and 9% of Anchorage and the State of Alaska Census Area populations live below the poverty level, respectively, while 10% of the JBER population lives below the poverty level (U.S. Census Bureau 2013).

Table 3-3. Socioeconomic and Environmental Justice Data for JBER, the Municipality of Anchorage, and the State of Alaska

Area	Total Population	Median Household Income (2021)	Below Poverty Level	Minority Population
JBER [1]	13,317	$60,721	10%	35%
Municipality of Anchorage	291,247	$86,654	9%	42%
State of Alaska	733,391	$77,845	16%	41%

1. Based on data for zip codes 99505 and 99506. (Source: U.S. Census Bureau 2020).

Environmental Consequences

Alternative 1 (Preferred Alternative)

Activities related to construction of a new WTP and existing WTP demolition were evaluated to determine if they would disproportionately impact a minority or low-income population. Because the demographics of JBER are generally reflective of the wealth distribution and ethnic diversity of Anchorage and the State of Alaska, the Alternative 1 (Preferred Alternative) would not disproportionately impact environmental justice populations. According to the U.S. EPA Environmental Justice Mapping Tool (https://www.epa.gov/ejscreen), the water utility service area within JBER is not considered a disadvantaged community.

The Preferred Alternative would result in minor beneficial effects on socioeconomic resources. It is expected that a portion of the implementation costs for construction and demolition activities would be expended in the Anchorage regional economy, increasing revenues in the local construction and engineering industries for the duration of the project. This direct benefit would also result in additional beneficial effects throughout the regional economy during this period, including indirect increases in revenue for suppliers to the construction and engineering industries and related increases in employee income, which is expected to result in additional spending on other goods and services in the region.

Under the Preferred Alternative, JBER's 3,150 households (approximate, including about 5,600 children), unaccompanied personnel dormitories, five child daycare centers, two elementary schools, and others working on the base would no longer be exposed to drinking water that comes in direct contact with PCBs.[4] The Preferred Alternative would also benefit JBER residents and employees because the new, modern WTP would provide safe and reliable drinking water even during most natural disasters and installation security breaches.

[4] Although no safe drinking water thresholds have been exceeded in water tested following treatment for drinking, traces of PCBs below regulatory thresholds have been detected, and there is potential to further contaminate drinking water above the EPA's regulatory standard.

Adverse impacts from Alternative 1 (Preferred Alternative) are not anticipated.

No Action Alternative

Under the No Action Alternative, there would be minor adverse effects on socioeconomic resources since JBER residents would continue to use drinking water exposed to PCBs.[5] However, because of the ongoing and intensive drinking water sampling program, the risk to the population while the WTP operates under the EPA's interim measures the potential impacts are low. Once the interim measures expire, closure of the WTP could result in significant repercussions to JBER residents, since there would not be enough drinking water to meet JBER's long-term needs under the No Action Alternative.

3.2.8 Climate and Climate Change

Affected Environment

According to the Western Regional Climate Center (WRCC), JBER lies in a transitional climatic zone between the maritime climatic zone of coastal Alaska and the continental climatic zone of interior Alaska. In the transition zone, temperatures are typically moderate with long, cool winters and short, warm summers (WRCC 2023b). The Chugach Mountains to the east-southeast influence the climate of the Anchorage Bowl by partially blocking the moist air that moves in from the Gulf of Alaska and Prince William Sound. In the winter, Anchorage is protected by the Alaska Range to the north, which prevents arctic air masses with extreme cold, from moving south into the region. In July, the average maximum temperature is 65.9 degrees Fahrenheit (°F) and the average minimum temperature is 49.4°F. In January, the average maximum temperature is 20.2°F and the average minimum temperature is 5.1°F. The average annual precipitation total is 14.63 inches with a total average annual snowfall of 56.6 inches (WRCC 2023a). The frost-free period for Anchorage ranges from 105 to 135 days per year on average (USDA NRCS 2019).

It is well documented that the earth's climate has fluctuated throughout its history. However, recent scientific evidence indicates a correlation between increasing global temperatures over the past century and the worldwide proliferation of GHG emissions by mankind. Climate change associated with global warming is predicted to produce negative environmental, economic, and social consequences across the globe. These global impacts would be manifested as impacts on resources and ecosystems in Alaska. Recent observed changes due to global warming include rising temperatures, shrinking glaciers and sea ice, thawing permafrost, sea level rise, a lengthened growing season, and shifts in plant and animal ranges. The impacts from climate change are already occurring in Alaska and include coastal erosion, increased storm effects, sea ice retreat, permafrost melt, and increased forest fires. The State of Alaska actively implements an Alaska Climate Change Strategy to adapt to current and anticipated impacts from climate change (State of Alaska 2015).

GHGs are gases that trap heat in the atmosphere by absorbing infrared radiation. GHG emissions occur from natural processes and human activities. GHGs include water vapor, carbon dioxide, methane, nitrous oxide, ozone, and several hydrocarbons and chlorofluorocarbons. Each GHG has an estimated global warming potential (GWP), which equates to the ability of a gas or aerosol to trap heat in the atmosphere. The GWP rating system is standardized to carbon dioxide, which has a value of one. To simplify GHG analyses, total GHG emissions from a source are often expressed as a CO2e. The CO2e is calculated by multiplying the emissions of each GHG by its GWP and adding the results together to produce a

single, combined emission rate representing all GHGs. While methane and nitrous oxide have much higher GWPs than carbon dioxide, carbon dioxide is emitted in such greater quantities that it is the overwhelming contributor to CO2e from both natural processes and human activities.

Annual CO2e emissions measured across Alaska from 1990 to 2015 averaged 47.39 gross and 26.68 net million metric tons (MMT) (ADEC 2018). Annual average CO2e emissions from the military sector for all installations and facilities in Alaska averaged 0.84 MMT (838,370 metric tons [MT]). Annual CO2e emissions within the Municipality of Anchorage averaged 1.0 MMT (1,013,623 MT). The annual CO2e emissions from the existing WTP is about 4,324 MT.

Environmental Consequences

Alternative 1 (Preferred Alternative)

The ACAM tool was used to estimate GHG emissions on annual basis during the construction, demolition, and operating phases of the Preferred Alternative using the inputs listed in 3.2.1 (also found in the summary and detailed ACAM reports provided in Appendix B). The ACAM model is programmed to use a combination of US EPA AP-42 emission factors and emission factors, global warming potentials, and calculation methods described in 40 CFR Part 98 were used estimate GHG emissions. GHG emissions are expressed in terms of carbon dioxide equivalents (CO2e), which includes contributions from carbon dioxide, nitrous oxide, and methane. These emissions are summarized in Table 3-4. Even at their peak in 2031, annual GHG emissions from the Preferred Alternative are about a quarter of the potential emissions from the existing WTP when operating at its full potential. The two boilers, which total 7.0 MMBtu/hr, are the primary source of GHG emissions at the existing WTP. Once the emission sources at the existing WTP are decommissioned and taken out of service, there will be a decrease in CO2e emissions of about 3,409 MT. The short-term increase in GHG emissions associated with the Preferred Alternative are very minor in comparison to the Municipality of Anchorage and Alaska as a whole.

Table 3-4. Estimated GHG Emissions by Project Phase and Year for the Preferred Alternative

Year	Greenhouse Gas Emissions (CO2e in Metric Tons/Year)
Steady State Operating (Existing WTP)	
Current	4,324
Construction Phase (New WTP)*	
2023	510
2024	240
2025	508
Initial Operating Phase (New WTP)*	
2026	915
2027	915
2028	915
2029	915
Demolition Phase (Existing WTP)	
2030	1,061
2031	1,133
2032	988
Steady State Operating Phase (New WTP)	
2033	915

* Does not include existing emissions from the existing WTP.

Under the Preferred Alternative, potential short-term GHG emissions increases would occur during construction of a new WTP and demolition of the existing WTP (Table 3-4). A very minor increase in short-term, annual GHG emissions would occur as a result of the Preferred Alternative during the construction phase. Prior to the demolition of the existing WTP, there would be a minor increase in GHG emissions when the new WTP is operating and the existing WTP still standing but closed and secured. Higher GHG emissions would be expected during the existing WTP demolition. Once the WTP is demolished and its associated emission sources are removed from service, there would be a net decrease in GHG emissions of about 3,409 MT annually because the new WTP would have a newer and more efficient diesel-fired emergency generator, diesel fuel storage tank, gas-fired water heater, and natural gas-fired boilers (2) than those associated with the existing WTP. Based on the annual emissions, the Alternative 1 (Preferred Alternative) would not result in a significant impact to GHG emissions.

No Action Alternative

Under the No Action Alternative, a new WTP would not be constructed and the existing WTP would not be demolished. The existing WTP currently emits approximately 4,324 MT of CO2e each year. The existing conditions would remain the same. As a result, no additional or new impacts related to GHG emissions would be expected and the impact would not be significant.

3.3 OTHER NEPA CONSIDERATIONS

3.3.1 Unavoidable Adverse Effects

This EA identifies any unavoidable adverse impacts that would be required to implement the Preferred Alternative and the significance of the potential impacts to resources and issues. Construction of a new WTP and demolition of the existing WTP would impact the local project area at JBER. The severity of potential impacts would be limited by implementation of BMPs, compliance with ADEC- and EPA-approved hazardous materials management plans during building demolition, mitigation included in a MOA developed with the SHPO, and other regulatory compliance for the protection of the human and natural environment.

Unavoidable short-term adverse impacts associated with implementing the Preferred Alternative would include: a temporary increase in air emissions during construction and demolition activities; potential exposure of workers to construction safety risks and to hazardous materials during demolition activities; and noise from construction activities. These effects are considered minor and would be confined to the immediate area. Use of environmental controls and implementing controls required in permits and approvals would minimize these potential impacts. Unavoidable long-term adverse impacts would occur to cultural resources since a National Register of Historic Places eligible building would be taken down and removed from the site.

For the Preferred Alternative to be accomplished, these impacts would occur. The action is required to provide safe drinking water to JBER facilities. No other alternative would consistently provide safe and reliable drinking water to accommodate JBER's existing and future peak demand, while meeting EPA and ADEC drinking water regulations and complying with the EPA's requirements under TSCA.

3.3.2 Relationship of Short-Term Uses and Long-Term Productivity

The relationship between short-term uses and enhancement of long-term productivity from implementation of the Preferred Alternative is evaluated from the standpoint of short-term effects and long-term effects. The Preferred Alternative would result in short-term construction-related impacts such as limited air emissions, dust generation, worker exposure to construction conditions and hazardous materials, and local employment and revenue. These impacts would be temporary, would occur only during construction, and are not expected to alter the long-term productivity of the natural environment.

The Preferred Alternative represents an enhancement of long-term productivity at JBER by providing a safe and reliant water source to support installation activities. The negative effects of short-term construction activity impacts would be minor compared to the positive benefits from replacement of the WTP. Immediate, and long-term, benefits would be realized for operation and maintenance after completion of the Preferred Alternative.

3.3.3 Irreversible and Irretrievable Commitments of Resources

This EA identifies any irreversible and irretrievable commitments of resources that would be involved in the Preferred Alternative if implemented. An irreversible effect results from the use or destruction of resources (e.g., energy) that cannot be replaced within a reasonable time. An irretrievable effect results from loss of resources (e.g., endangered species) that cannot be restored as a result of the Preferred Alternative.

The Preferred Alternative results in the demolition of a building that is eligible for the National Register of Historic Places. The demolition of this facility is irreversible. USAF has acknowledged this adverse effect and engaged in consultation with the SHPO to prepare an MOA to mitigate these adverse effects (Appendix A).

Material resources irretrievably used for the construction of the WTP would include construction materials, such as wood and metal, and water used for dust control purposes. Such materials are not in short supply and would not be expected to limit other unrelated construction activities in the area. As a result, the irreversible use of material resources would not be considered significant. However, the Preferred Alternative is sited to minimize the requirements for clearing or grading new otherwise undisturbed lands

Energy resources used for the implementation of the Preferred Alternative would be irretrievably lost. These would include petroleum-based products (e.g., gasoline and diesel) and electricity. During construction, and demolition and transport of hazardous waste outside Alaska, gasoline and diesel would be used for the operation of vehicles. This small-scale project and its consumption of these energy resources would not place a significant demand on their availability in the region. Therefore, significant irreversible energy-related impacts are not expected.

The use of human resources for construction and demolition activities is considered an irretrievable loss only in that it would preclude such personnel from engaging in other work activities. However, the use of human resources for the Preferred Alternative would represent employment opportunities considered beneficial.

3.4 CUMULATIVE EFFECTS

This EA also considers the impacts of cumulative effects as required in 40 CFR Part 1501. Cumulative effects, as defined by the CEQ (40 CFR §1508.1 (g)(3), 2023) are the "…effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time."

Actions announced for the ROI for this project that could occur during the same time period as the proposed action are listed in Table 3-5.

Table 3-5. Past, Present, and Reasonably Foreseeable Projects

Action	Description
Historic Buildings Demolition	At JBER, demolition of the following WWII-era buildings has occurred or is planned: • Building 10550, Urea Storage (Sand Storage) – demolition by neglect; • Building 9268, Liquid Oxygen (Cryogenics) – demolished 2020; • Building 8481, Wildlife Museum – demolished 2022; • Building 7250, Vehicle Operations – scheduled demolition 2023; and • Building 10286, Hangar 7 - planned In addition, demolition of the following Cold War-era buildings has occurred or is planned at JBER: • Building 18176, ANFLR-9 CDAA – demolition by neglect; • Building 7348 Office of Special Investigations– demolished 2011; • Building 16521 Maintenance Hangar 14– demolished 2011; • Building 17722 Warehouse Storage– demolished 2011; • Building 35750 Consolidated Transmitter Facility – demolished 2011; • No building #, Vehicle Maintenance Shop, Upper Site Summit – demolished 2012; • Building 7135 Kashim Enlisted Club– demolished 2012; • Building 39600, partial demolition of Battery Control Building and Barracks, Upper Site Summit – demolished 2012; • Building 38227, Vehicle Maintenance, Lower Site Summit – demolished 2012; • Building 10449 Dental Clinic– demolished 2014; • Building 12737 DLA Disposition Services Office – demolished 2014 • Building 32448 Munitions Maintenance Operations – demolished 2015; • Central Heating and Power Plant (Building 36012) – demolished 2018; and • Building 15658, Hangar 16, Combat Alert Cell – planned
Wildland Fire Management Activities	Wildland fire prevention measures, initiated in May 2022, within the Richardson Training Area to reduce hazardous (wood) fuels that accumulate and could contribute to uncontrollable wildfires.
North Runway Hill Removal Project (USAF 2017)	JBER completed an EA for this project that occurs on the north-south runway, runway 16/34. The runway has existing topographic safety hazards to JBER flight operations in the form of a hill to the north. This project is to continue the removal of the hill and transport soil removed from the hill to a disposal site located north of the North End Borrow Pit. (Another project, the JBER Runway 16/34 Extension, has a combined effect with this project, as they occur on the same area of land)

Action	Description
Arctic Valley Ski Area Strategic Plan Implementation	Goals of the strategic plan include developing a long-range master plan that would include phased implementation of substantial upgrades and enhancements at the ski area; enhancing experiences at the ski area (including upgrades to parking and pedestrian circulation); future infrastructure (including new lifts, lodge renovations, trails, and cabins); and improved recreational opportunities.
JBER-R CHPP Demolition	Site work and demolition of the CHPP, which was contaminated with PCBs, LBP, and ACM, was conducted from summer 2017 to November 2018.

For this EA analysis, these announced actions are addressed from a cumulative perspective and are analyzed in this section. These announced future actions would be evaluated under separate NEPA actions conducted by the appropriate federal agency. The USAF cumulative impact analysis considers these announced actions based on the best available information for these proposals by others.

Descriptions of the cumulative effects for the resource areas follow.

3.4.1 Air Quality

The ROI evaluated for potential cumulative air quality impacts included JBER, the DU Stationary Source, the Municipality of Anchorage, and Eagle River, Alaska. Projects within the ROI included in the cumulative AQIA was limited to the projects listed in Table 3-5. These projects, in conjunction with the proposed action, could have an incremental impact on air quality within the ROI. Currently, JBER is in attainment for all NAAQS. The Eagle River area, located north of JBER, was a moderate nonattainment area for PM_{10}, but was re-designated as a maintenance area in 2013 by the EPA (ADEC 2023a). The Municipality of Anchorage was in nonattainment for CO, but it was re-designated as a maintenance area in 2002 by the EPA (ADEC 2023b).

JBER would emit 662 tons of emissions per year if all stationary, emission sources owned by JBER operated to their full potential. The stationary source would emit 591 tons of emissions per year for all of its facilities combined when operating at their full potential. The emission contribution from the existing WTP is minor in comparison to emission units operated at the other facilities under the DU stationary source. Potential emissions contributions from the proposed new WTP would be similar to the existing plant. The highest short-term annual emission rate from the Preferred Alternative would occur in 2031 during demolition of the existing WTP with an estimated combined total of 19.0 tons of CAPs. Construction-related emissions from demolition of the existing WTP would contribute 2.3 tons of emissions with the new WTP emission sources contributing the remaining 16.7 tons in 2031. The annual CAP emissions from these new stationary sources represent the long-term emissions impact associated with the Preferred Alternative. Peak CAP emissions during construction of the proposed new WTP and demolition of the existing plant would be insignificant. A minor, net increase in emissions would occur as a result of the installation of new stationary source emission units at the proposed new WTP.

The cumulative effects on air quality within the ROI, when the emissions from Preferred Alternative are added to emissions from other proposed actions, are expected to be insignificant in the short and long term since many of the projects in Table 3-5 involve the demolition of facilities.

3.4.2 Safety and Occupational Health

Cumulative adverse effects of past, present, and reasonably foreseeable actions include commonplace risks to the public and workers such as slips, trips, and falls; exposure to the elements (e.g., heat and cold); and interaction with wildlife. In addition, building demolition has risks to worker health and safety, particularly if the buildings contain hazardous materials. Work safety is protected through the development and implementation of safety plans. Although these types of risks would be associated with most of the projects, they are relatively discrete, and the overall cumulative effects would be negligible. The Preferred Alternative would make a negligible contribution to cumulative adverse effects on safety and occupational health and safety.

3.4.3 Hazardous Materials and Wastes

Most of the past, present, and reasonably foreseeable actions likely involve construction and maintenance activities that use hazardous materials and petroleum products and may generate some waste. These actions would be expected to implement BMPs and compliance measures to safely manage hazardous materials and waste and minimize adverse effects.

Many of the building demolition projects listed in Table 3-5 involve the management and disposal of hazardous waste. During all building demolition projects, hazardous materials would be managed in accordance with applicable EPA and ADEC regulations and approved work plans. It is not likely that excavation of the Preferred Alternative would coincide with another project in time and physical proximity such that cumulative effects would occur. Likewise, building demolition activities in the project area are physically separate from other portions of the installation.

The Preferred Action, when added to other actions listed in Table 3-5, would not result in cumulative effects.

3.4.4 Water Resources

Cumulative adverse effects of past, present, and reasonably foreseeable actions include minor impacts to water quality due to expansion of impervious areas resulting from construction and demolition activities; however, projects with over one acre of ground-disturbing activities are conducted with a SWPPP and CGP in place to minimize impacts. No past, present, or reasonably foreseeable future action is expected to impact water sources or groundwater. No significant cumulative impacts would be expected to water resources.

3.4.5 Earth Resources (Geology/Soils)

Most of the past, present, and reasonably foreseeable actions would involve construction and demolition activities that would impact earth resources. If contaminated soils are encountered during any of the projects listed in in Table 3-5, contamination would be removed for proper disposal following EPA and ADEC regulations and workplans, like the Preferred Alternative. The Preferred Alternative, when added to other projects listed in in Table 3-5, could positively impact earth resources if contamination is present and would not contribute to significant cumulative impacts.

3.4.6 Cultural Resources Impacts

The Preferred Alternative would result in an adverse impact to a single historic property. Any other actions in the vicinity affecting historic properties could potentially interact or compound with detrimental historic property effects.

Altogether, many older buildings have been or will be demolished and removed from JBER (Table 3-5), which when added to the WTP demolition could result in a cumulative impact to cultural resources. It is expected that all building demolition activities including buildings demolished by neglect, would be coordinated with the SHPO. If any of the buildings are found to be eligible for the National Register of Historic Places, it is expected that a MOA would be developed, and mitigation measures would be implemented. Through the use of MOAs, the Preferred Action when added to other actions listed in Table 3-5 would not result in cumulative effects.

3.4.7 Socioeconomic Resources

In combination with other proposed or ongoing construction projects, the proposed project would likely result in a minor increase in the demand for construction-related services. The increase in economic activity associated with these projects would last for the duration of the construction periods. This would be a beneficial cumulative impact to the surrounding community. Further, the positive health and safety impacts of the proposed new WTP to JBER's residents and employees would be added to other new positive developments planned at JBER. As detailed in Section 3.2.7, the proposed project would not limit or otherwise negatively affect the environmental justice populations or the economy of the region and would not contribute to significant cumulative impacts associated with socioeconomic resources.

3.4.8 Climate and Climate Change

The cumulative air quality analysis described in Section 3.4.1 included an analysis of GHG emissions. It found that GHG emissions would peak in 2023 with 554 metric tons and the highest short-term emissions would occur in 2031 during WTP demolition when 1,133 tons of GHG would be emitted. Construction-related emissions from demolition of the existing WTP would contribute 218 tons of GHGs, and 915 tons of GHGs would be emitted by the new, stationary source emission units installed with the proposed new WTP. A minor, net increase in emissions would occur as a result of the installation of new stationary source emission units at the proposed new WTP.

When added to the emissions from Preferred Alternative, the cumulative effects on climate and climate change due to GHG emissions from projects listed in in Table 3-5 are expected to be insignificant in the short and long term.

3.5 POTENTIAL MITIGATION MEASURES

This section identifies BMPs and measures that are recommended to minimize potential environmental consequences of the Preferred Alternative to the highest degree possible. These are in addition to standard construction and resource management practices described for resource areas not otherwise further discussed in this analysis. In some instances, the same BMPs or conservation measures are applied to multiple resource categories.

Air Quality

- Soil stockpiles will be covered.
- Water from water trucks will be applied to fill and excavation areas, access and haul roads, and staging areas as needed to control fugitive dust, especially should risk of dust reaching Ship Creek occur.
- Low speed limit on access driveways will be followed to reduce dust generation.
- Construction vehicles and machinery idling will be restricted to a maximum of five minutes.

Safety and Occupational Health

- Construction Health and Safety Plans, OSHA regulations, and site BMPs will be followed for worker safety.

Hazardous Materials/Waste

- EPA- and ADEC-approved plans for the testing, management, and disposal of hazardous material will be developed and followed.
- All military, civilian, and contractor personnel operating on JBER will abide by the most current version of the JBER Spill Plan (SPCC/CPlan) for reporting spills.
- All spills will be reported to JBER Fire via 911, per the JBER Spill Plan.
- The contractor will work with the JBER Spill Manager for reporting spills to the proper agencies.
- An agency-approved plan for securing and maintaining the existing WTP in place for the short term, between when the proposed new WTP begins operation and when the existing WTP is demolished, will be developed. It is expected the plan will include:
    - Maintaining electrical power into the building in good condition;
    - Keeping the inside WTP temperature above freezing by properly maintaining and monitoring building boilers;
    - Locking, blocking, or removing all WTP ingress and egress points, and ensuring the surrounding fence remains locked and secured; and
    - Continuously monitoring WTP security using CCTV and personnel.

Water Resources

- An APDES CGP SWPPP would be developed to manage stormwater quality during construction

Cultural Resources

- Mitigation measures included in the MOA developed for the demolition of the WTP will be followed.
- In case of inadvertent discovery of cultural or historic resources, all work will be stopped, and cultural resources professionals will be notified.

4.0 LIST OF PREPARERS

This EA has been prepared under the direction of the Air Force Civil Engineer Center, USAF, and PACAF.

The individuals that contributed to the preparation of this EA are listed below.

Table 4-1. List of Preparers

Name/Organization	Education	Resource Area	Years of Experience
Robin Reich, Solstice Alaska Consulting, Inc.	B.S. Biology	NEPA, Socioeconomic Resources/ Environmental Justice	20
Charlene C. Johnson, 673d CES/CEIEC	M.S. Biology	NEPA	23
Amy E. Kearns, 673d CES/CEIEC	A.S. Fire Science, B.S. Forestry, M.S. Natural Resource Management	Air Quality	25
Kathleen Hook, DU	M.S. Environmental Quality Science; B.S. Geology	Water Resources; Hazardous Materials/Waste; Water Resources; Earth Resources	43
Melissa Shippey, CPESC, CISEC, DU	B.S. Natural Resources Management	Hazardous Materials/Waste, Water Resources; Earth Resources	20
Rebecca Venot, PE, CRW Engineering Group	M.S. Civil and Environmental Engineering; B.S. Mechanical Engineering	DOPAA; Occupational Safety	16
Margan A. Grover, 673d CES/CEIEC	M.A. Anthropology	Cultural Resources	26

5.0 PERSONS AND AGENCIES COORDINATED

The following Persons and Agencies were contacted with notification of the availability of the Draft EA for public review and comment.

Table 5-1. Persons and Agencies Coordinated

Federal Agencies	
Bureau of Indian Affairs	U.S. Environmental Protection Agency
Bureau of Land Management	U.S. Fish and Wildlife Service
Federal Aviation Administration	U.S. Department of Interior
National Park Service	U.S. Department of Transportation Federal Highway Administration
U.S. Department of Agriculture	
State Agencies	
Alaska Department of Environmental Conservation	Alaska Department of Natural Resources
Alaska Department of Fish and Game	Alaska State Historic Preservation Office
Alaska Department of Military and Veterans Affairs	Alaska Railroad Corporation
Elected Officials	
Representative Mary Peltola	Senator Lisa Murkowski
Office of the Governor	Senator Dan Sullivan
Local Agencies	
Anchorage Historic Preservation Commission	Port of Alaska
Anchorage Assembly	Port MacKenzie
Municipality of Anchorage	Ted Stevens Anchorage International Airport
Other Stakeholders	
Eagle River Community Council	Northeast Community Council
Fairview Community Council	South Fork Community Council
Mountain View Community Council	
Tribal Agencies	
CVTC	Native Village of Eklutna
Chickaloon Moose Creek Native Association	Native Village of Tyonek
Eklutna, Inc.	Tyonek Native Corporation
Knik Tribal Council	Cook Inlet Region Incorporated

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APPENDIX A

Interagency/Intergovernmental Coordination and Public Participation

Table 1 Federal Agencies Contacted with the Notice of Availability

Federal Agencies	
Bureau of Indian Affairs Alaska Regional Office 709 West 9th Street PO Box 21647	Bureau of Indian Affairs Anchorage Agency: Attn. Ms. Michelle Watchman 3601 C Street, Ste 1100 Anchorage, AK 99503-5947 Michelle.watchman@nps.gov
Bureau of Land Management Anchorage Field Office Attn: Bonnie Milton 4700 BLM Road Anchorage, AK 99507-2599 blm_ak_afo_general_delivery@blm.gov	Federal Aviation Administration Alaska Region Attn: Kerry Long 222 West 7th Avenue, # 14 Anchorage, AK 99513 jean.wolfers-lawrence@faa.gov
National Park Service Alaska Regional Office 240 West 5th Avenue, Ste 114 Anchorage, AK 99501 Sarah.creachbaum@nps.gov	U.S. Department of Agriculture Natural Resources Conservation Service Attn: Alan McBee 800 E. Palmer-Wasilla Highway Suite 100 Wasilla, AK 99654 Alan.mcbee@usda.gov
U.S. Department of Interior Office of Environmental Policy & Compliance Anchorage Regional Office Attn: Philip Johnson 1689 C Street, Room 119 Anchorage, AK 99501-5126 NEPA_OEPC@ios.doi.gov	U.S. Department of Transportation Federal Highway Administration Alaska Division Attn: Sandra Garcia-Aline 709 West 9th Street, Room 851 PO Box 21648 Juneau, AK 99802-1648 sandra.garcia-aline@dot.gov
U.S. Environmental Protection Agency Region 10 Policy and Environmental Review Branch Attn: Rebecca Chu 1200 Sixth Ave, Suite 155 Seattle, WA 98101 Chu.Rebecca@epa.gov	U.S. Fish and Wildlife Service Ecological Services Branch Attn: Doug Cooper 4700 BLM Road Anchorage, AK 99507 douglass_cooper@fws.gov
National Marine Fisheries Service Protected Resources Division Attn: Barbara Mahoney Anchorage Field Office 222 West 7th Ave. #43 Anchorage, AK 99513-7577 Barbara.mahoney@noaa.gov	National Marine Fisheries Service Protected Resources Division Attn: Greg Balogh Anchorage Field Office 222 West 7th Ave. #43 Anchorage, AK 99513-7577 Greg.balogh@noaa.gov
National Marine Fisheries Service Habitat Conservation Division Attn: Doug Limpinsel Anchorage Field Office 222 West 7th Ave. #43 Anchorage, AK 99513-7577 Doug.limpinsel@noaa.gov	

Table 2 State Agencies/Office Contacted with the Notice of Availability

State Agencies/Offices	
Alaska Department of Environmental Conservation Division of Air Quality Attn: Jason Olds 410 Willoughby Avenue, Ste 303 PO Box 111800 Juneau, AK 99801 jason.olds@alaska.gov	Alaska Department of Environmental Conservation Division of Environmental Health Attn: Christina Carpenter 555 Cordova Street Anchorage, AK 99501 christina.carpenter@alaska.gov
Alaska Department of Environmental Conservation Division of Spill Prevention and Response Attn: Tiffany Larsen 410 Willoughby Avenue, Ste 302 PO Box 111800 Juneau, AK 99811-1800 tiffany.larson@alaska.gov	Alaska Department of Environmental Conservation Division of Water Attn: Randy Bates 555 Cordova Street Anchorage, AK 99501-2617 randy.bates@alaska.gov
Alaska Department of Fish and Game Division of Wildlife Conservation Attn: Cynthia Wardlow 333 Raspberry Road Anchorage, AK 99518-1599 cynthia.wardlow@alaska.gov	Alaska Department of Environmental Conservation Office of the Commissioner Attn: Jason Brune PO Box 111800 Juneau, AK 99811-1800 Dec.commissioner@alaska.gov
Alaska Department of Natural Resources Commissioner Attn: John Boyle 550 West 7th Avenue, Ste 1400 Anchorage, AK 99501 john.boyle@alaska.gov	Alaska Railroad Corporation Attn: Christy Terry 327 West Ship Creek Avenue PO Box 107500 Anchorage, AK 99510 Public_comment@akrr.com
Alaska Resources Library and Information Services 3211 Providence Drive, Ste 111 Anchorage, AK 99508 reference@arlis.org	Alaska State Court Law Library 303 K Street Anchorage, AK 99501 library@akcourts.gov
Alaska State Department of Natural Resources, Office of History and Archaeology, Alaska State Historic Preservation Officer, Attn: Judith Bittner Judy.bittner@alaska.gov	Alaska Department of Fish and Game Division of Sport Fish 333 Raspberry Road Anchorage, AK 99518-1599 jay.baumer@alaska.gov
State of Alaska Office of the Governor Attn: Mike Dunleavy PO Box 110001 Juneau, AK 99811-0001	U.S. Congressperson Mary Peltola 121 West Fireweed Lane Suite 260 Anchorage, AK 99503 https://peltola.house.gov/contact/
U.S. House of Representatives Rep. Lisa Murkowski 510 L. Street Suite 600 Anchorage, AK 99501 https://www.murkowski.senate.gov/contact/email	U.S. House of Representatives Rep. Dan Sullivan 510 L. Street Suite 600 Anchorage, AK 99501 https://www.sullivan.senate.gov/contact/email
Alaska Department of Fish and Game Division of Habitat 333 Raspberry Road Anchorage, AK 99518-1599 ronald.benkert@alaska.gov	Alaska Department of Military and Veterans Affairs Major General Torrence Saxe PO Box 5800 Rm C-211 Camp Denali JBER, AK 99505 torrence.saxe@alaska.gov

Table 3 Local Agencies/Offices Contacted with the Notice of Availability

Local Agencies/Offices	
Anchorage Historic Preservation Commission Municipality of Anchorage c/o Planning Dept. Kristine Bunnell, Senior Planner PO Box 196650 Anchorage, AK 99519-6650 kristine.bunnell@anchorageak.gov	Municipality of Anchorage Attn: Dave Bronson 632 West Sixth Avenue, Ste 840 Anchorage, AK 99501 mayor@muni.org https://www.muni.org/Departments/Mayor/Pages/ContactTheMayor.aspx
Municipality of Anchorage Anchorage Community Development Authority 245 West 5th Avenue, Ste 122 Anchorage, AK 99501 info@acda.net	Municipality of Anchorage Community Planning & Development Attn: Lyon Craig 4700 Elmore Road Anchorage, AK 99507 Craig.lyon@anchorageak.gov
Ted Stevens Anchorage International Airport Attn: John Binder PO Box 196960 Anchorage, AK 99519 john.binder@alaska.gov	Anchorage Assembly Attn: Municipal Clerk PO Box 196650 Anchorage, AK 99519 wwmasmc@anchorageak.gov
Port MacKenzie Matanuska-Susitna Borough Attn: David Griffin 350 East Dahlia Avenue Palmer, AK 99645 David.griffin@matsugov.us	Port of Alaska Attn: Stephen Ribuffo 2000 Anchorage Port Road Anchorage, AK 99501 Steve.ribuffo@anchorageak.gov portofalaska@anchorageak.gov

Table 4 Other Stakeholders Contacted with the Notice of Availability

Other Stakeholders	
Eagle River Community Council 12002 Business Blvd. #123 Eagle River, Alaska 99577 eaglercommunitycouncil@gmail.com	South Fork Community Council 8609 Acadia Dr Anchorage, AK 99577 sofccak@gmail.com
Government Hill Community Council 1057 West Fireweed Ln Anchorage, AK 99503 ghccpres@gmail.com	Mountain View Community Council 3701 Mountain View Drive Anchorage, AK 99508 info@communitycouncils.org
Northeast Community Council 1057 West Fireweed Ln Anchorage, AK 99503 Northeastcommunitycouncil@gmail.com	Scenic Foothills Community Council 8609 Acadia Dr Eagle River AK 99577 sfccakpresident@gmail.com
Birchwood Community Council PO Box 670984 Chugiak AK 99567-0984 birchwoodcouncil@gmail.com	

Table 5 Tribal Entities Contacted for Government-to-Government Consultation and the Notice of Availability

Tribal Entities	
Chickaloon Native Village Ms. Kendra Zamzow Environmental Program Manager P.O. Box 1105 Chickaloon, AK 99674 klzamzow@chickaloon-nsn.gov	Chickaloon Native Village Ms. Jessica Winnestaffer Environmental Stewardship Director P.O. Box 1105 Chickaloon, AK 99674 jewinnestaffer@chickaloon-nsn.gov
Chickaloon Native Village Mr. Gary Harrison Traditional Chief P.O. Box 1105 Chickaloon, AK 99674 chiefgaryharrison@chickaloon-nsn.gov	Chickaloon Native Village Ms. Angie Wade P.O. Box 1105 Chickaloon, AK 99674 alwade@chickaloon-nsn.gov
Chickaloon Native Village Ms. Lisa Wade Executive Director (Acting) P.O. Box 1105 Chickaloon, AK 99674 cvadmin@chickaloon-nsn.gov	Eklutna Native Village Ms. Carrie Ann Brophil Land and Environment Coordinator 26339 Eklutna Village Road Chugiak, AK 99567 cbrophil@eklutna.org
Eklutna Native Village Dr. Marc Lamoreaux Land and Environment Director 26339 Eklutna Village Road Chugiak, AK 99567 marcl@eklutna.org	Eklutna Native Village Mr. Aaron Leggett President 26339 Eklutna Village Road Chugiak, AK 99567 aleggett@eklutna.org
Eklutna Native Village Mr. Richard Farber Tribal Administrator 26339 Eklutna Village Road Chugiak, AK 99567 rfarber@eklutna.org	Knik Tribe Mr. Theodore Garcia Environmental Coordinator P.O. Box 871565 Wasilla, AK 99687 tgarcia@kniktribe.org
Knik Tribe Mr. Richard Porter Executive Director P.O. Box 871565 Wasilla, AK 99687 rporter@kniktribe.org	Knik Tribe Mr. Richard Martin Historic Preservation Officer P.O. Box 871565 Wasilla, AK 99687 rmartin@kniktribe.org
Native Village of Tyonek Mr. Justin Trenton Environmental Coordinator P.O. Box 82009 100 A Street Tyonek, AK 99682 NVTEnvironmental_DIR@outlook.com NVTenvironmental_asst@outlook.com	Native Village of Tyonek Mr. Johann Bartels President P.O. Box 82009 100 A Street Tyonek, AK 99682 NVTPresident@gmail.com
Native Village of Tyonek Ms. Janelle Baker Tribal Administrator/ Council Secretary P.O. Box 82009 100 A Street Tyonek, AK 99682 NVTcouncilsecretary@yahoo.com	Cook Inlet Region, Inc. Ms. Sophie Minich President/CEO P.O. Box 93330 Anchorage, AK 99509 sminich@ciri.com
Eklutna, Inc Mr. Kyle Smith Director of Land Assets 16515 Centerfield Drive Suite 201 Eagle River, AK 99577 ksmith@eklutnainc.com	Eklutna, Inc Mr. Kyle Foster Chair & President 16515 Centerfield Drive Suite 201 Eagle River, AK 99577 kfoster@eklutnainc.com

Table 5 Tribal Entities Contacted for Government-to-Government Consultation and the Notice of Availability

Cook Inlet Region, Inc. Ms. Suzanne Settle VP, Energy, Land, & Resources P.O. Box 93330 Anchorage, AK 99509 ssettle@ciri.com	

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Anchorage Fish & Wildlife Field Office
4700 Blm Road
Anchorage, AK 99507
Phone: (907) 271-2888 Fax: (907) 271-2786

In Reply Refer To: November 04, 2022
Project Code: 2023-0012379
Project Name: Joint Base Elmendorf Richardson Water Treatment Plant Project

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, and proposed species, designated critical habitat, and some candidate species that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Please note that candidate species are not included on this list. We encourage you to visit the following website to learn more about candidate species in your area:

http://www.fws.gov/alaska/fisheries/fieldoffice/anchorage/endangered/candidate_conservation.htm

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

Endangered Species: The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect

threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see:

https://www.fws.gov/birds/policies-and-regulations.php

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a Federal nexus) or a Bird/Eagle Conservation Plan (when there is no Federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see:

https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php

In addition to MBTA and BGEPA, Executive Order 13186: Responsibilities of Federal Agencies to Protect Migratory Birds, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both

migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at:

http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm
http://www.towerkill.com
http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

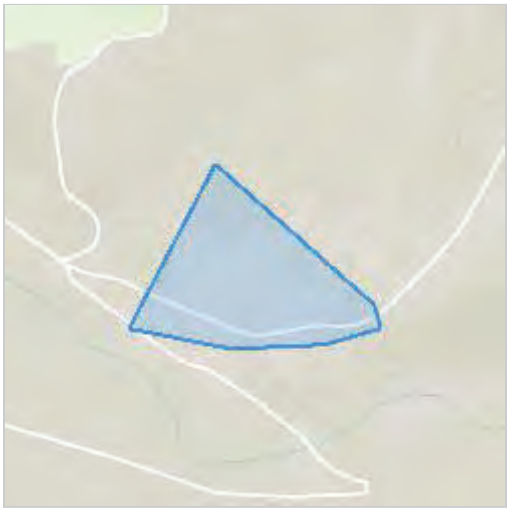
Anchorage Fish & Wildlife Field Office
4700 Blm Road
Anchorage, AK 99507
(907) 271-2888

Project Summary

Project Code: 2023-0012379
Project Name: Joint Base Elmendorf Richardson Water Treatment Plant Project
Project Type: Water Supply Facility - New Constr
Project Description: The US Air Force is considering constructing a new Water Treatment Plant (WTP) and dismantling the old WTP to meet their obligations to provide safe drinking water to JBER facilities, including housing and administration facilities.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@61.22849935,-149.65232327959012,14z



Counties: Anchorage County, Alaska

Endangered Species Act Species

There is a total of 0 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

There are migratory birds in your project area. Please refer to Alaska's Bird Nesting Season for recommendations to minimize impacts to migratory birds, including eagles.

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1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Jan 1 to Sep 30

NAME	BREEDING SEASON
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31
Hudsonian Godwit *Limosa haemastica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 15 to Jul 31
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds May 1 to Aug 15
Olive-sided Flycatcher *Contopus cooperi* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914	Breeds May 20 to Aug 31
Short-billed Dowitcher *Limnodromus griseus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds Jun 1 to Aug 10

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

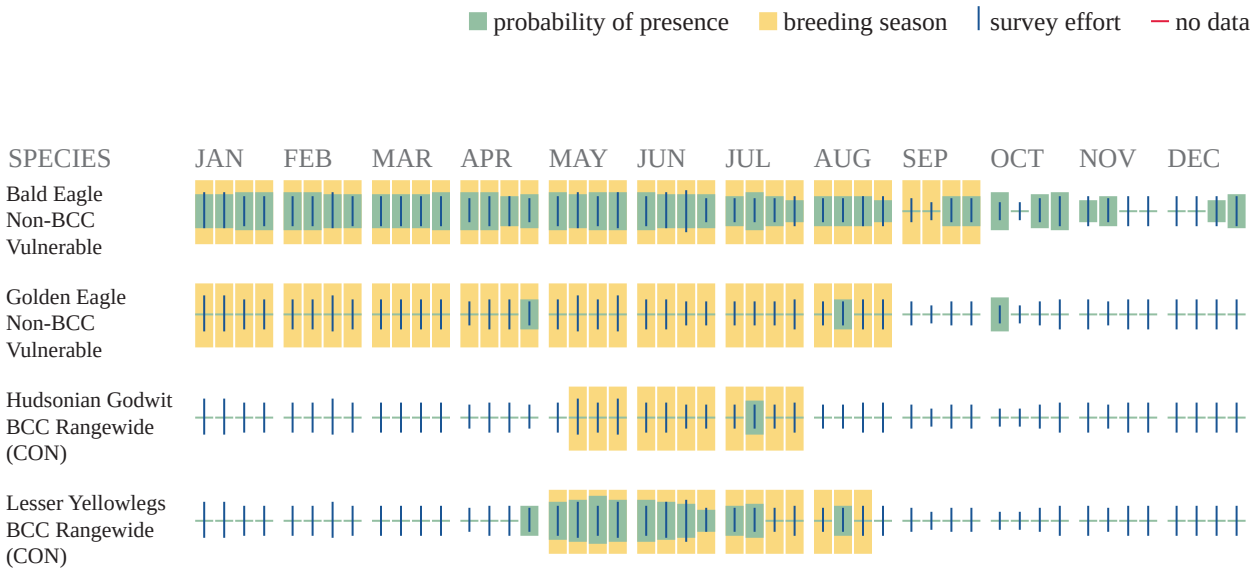
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

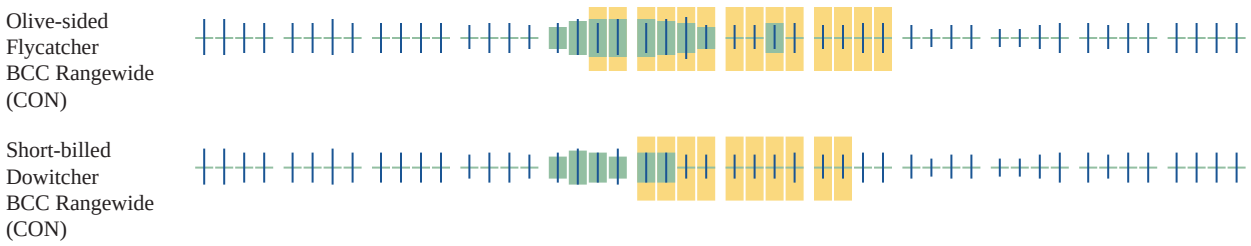
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

IPaC User Contact Information

Agency:	Solstice Alaska Consulting, Inc
Name:	Robin Reich
Address:	2607 Fairbanks Street
Address Line 2:	Suite B
City:	Anchorage
State:	AK
Zip:	99503
Email	robin@solsticeak.com
Phone:	9079295960

Olivia Cohn

From: Robin Reich
Sent: Friday, January 28, 2022 1:16 PM
To: Olivia Cohn
Subject: FW: Section 106 notification - Construct New Water Treatment Plant on JBER, AK
Attachments: 106application_JBER water treatment plant.pdf; Doyon WTP SHPO notification_signed.pdf

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From: GROVER, MARGAN A GS-12 USAF PACAF 673 CES/CEIEC <margan.grover@us.af.mil>
Sent: Friday, January 28, 2022 12:10 PM
To: 'DNR, Parks OHA Review Compliance (DNR sponsored)' <oha.revcomp@alaska.gov>
Cc: 'Richard Martin' <rmartin@kniktribe.org>; 'Angie Wade' <alwade@chickaloon-nsn.gov>; 'Jenny Blanchard' <j.haggar@hotmail.com>; 'Bunnell Kristine' <kristine.bunnell@anchorageak.gov>; 'Marc Lamoreaux' <marcl@eklutna.org>; cdowning@tyonek.com; Suzanne Settle <SSettle@ciri.com>; Info <info@eklutnainc.com>; Robin Reich <robin@solsticeak.com>; Melissa Shippey <mshippey@doyonutilities.com>
Subject: RE: Section 106 notification - Construct New Water Treatment Plant on JBER, AK

Attached is a notification under Section 106 of the National Historic Preservation Act. JBER is coordinating work to be completed by Doyon Utilities for construction of a new water treatment plant on the installation. The plant will be adjacent to the existing plant near Ship Creek. The area was surveyed for cultural resources in 2005 and none were reported. The attached letter provides additional information. JBER requests your concurrence that the proposed project will result in no historic properties affected. The attached report provides additional information.

Thank you for your time. Please let me know if you have any questions or concerns.

Margan A Grover
Cultural Resource Manager
Joint Base Elmendorf-Richardson
673 CES/CEIEC
(office) 907-384-3467
(mobile) 907-244-9188
margan.grover@us.af.mil
I live and work on Dena'ina Land.

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS, 673D AIR BASE WING
JOINT BASE ELMENDORF-RICHARDSON, ALASKA

MEMORANDUM FOR ALASKA DEPARTMENT OF NATURAL RESOURCES
OFFICE OF HISTORY AND ARCHAEOLOGY
ATTENTION: MS. JUDITH E. BITTNER

FROM: 673 CES/CEIEC
6326 Arctic Warrior Drive
JBER AK 99506-3240

SUBJECT: New Water Treatment Plant on Joint Base Elmendorf-Richardson (JBER)

1. Purpose and Need: The Joint Base Elmendorf-Richardson (JBER) Environmental Conservation Section (673d CES/CEIEC) is coordinating construction of a new water treatment plant. The new plant would replace the existing Doyon Utilities (DU)-owned and operated water treatment plant that processes water flowing from Ship Creek Dam. The purpose of this letter is to notify your office of this undertaking and request your concurrence on an assessment of effect.

2. Project Description and Area of Potential Effect: The proposed project would construct a new water treatment plant along Ship Creek and adjacent to the existing water treatment plant (Seward Meridian, Township, 13N, Range 2W, Section 9, Anchorage quadrangle A-8; Figure 1). As JBER's water utility provider, DU would construct the project (DU Project No. 8257). The proposed project's purpose is to build a water treatment plant that: supplies water at a quality that meets State and Federal drinking water standards, provides water at a quantity that fits JBER demands and authorized Ship Creek dam surface water rights, and is built before the current water treatment plant facility is closed. Its secondary purpose is to establish a simpler water treatment plant near the existing water treatment infrastructure that allows for the facility to be run by a single operator at any time of day. The proposed project is needed because the existing 1950s-era JBER water treatment plant facility is outdated and was built with materials that include lead-based paint, asbestos, and polychlorinated biphenyl-contaminated coatings that are in contact with treated drinking water. The U.S. Environmental Protection Agency has ordered the current water treatment plant facility to cease operations by October 1, 2023.

The project would construct a new gravity-fed water treatment plant system with pressure boosted by raw water feed pumps. To use the existing pipes and clear wells, the new water treatment plant would be built about 250 feet (ft) northwest of the current water treatment plant, adjacent to the two existing 1.5 million-gallon clear wells (water tanks). The project would occur in an 8-ft-tall fenced area of about 13,000 square (sq) ft (0.3-acres) with the following components (Figure 4):

- The membrane filter plant building would be an approximately 125-ft by 80-ft (10,000 sq ft), 24-ft tall pre-engineered metal building built on a 6-inch-thick concrete floor slab foundation with concrete stoop and ramp entrances.
- Access and security features would include curbs, gutters, parking spaces, a fire lane, bollards, chain-link fencing, a pivot gate, and a pedestrian gate.
- Project utilities would include a generator and transformer, electrical service, facility lighting, a gas line, water lines, a 2,000-gallon fire guard tank, a 1,500-gallon septic tank, and a dumpster.

- Additional project features would include a backwash line and outfall, drainfields, paving, and a culvert. Grading, clearing, vegetation removal, and earth work disturbance (including ditching for the project's utilities) would also occur, and disturbed areas would be revegetated.

The estimated 5.46-acre direct area of potential effect (APE) encompasses the approximately 0.3-acre (about 13,000 sq ft) fenced area where the pad would be placed and facility would be constructed, an approximately 4.7-acre (204,732 sq ft) area where material borrow and soil disposal would occur, and three separate staging areas that are south of Arctic Valley Road. Staging Area 1 is about 0.23-acres (10,825 sq ft), Staging Area 2 is about 0.13-acres (5,650 sq ft), and Staging Area 3 is about 0.1-acres (4,500 ft). The direct APE consists of a mix of undeveloped forest and industrial land use.

The estimated 32-acre indirect APE includes a 500-ft buffer area around the site of the new water treatment plant (a distance from which it would be visible) and a 100-ft buffer around direct APE areas outside the 500-ft buffer (a distance from which work could be seen or heard during construction). The indirect APE is a mix of industrial and undeveloped land. It is characterized by a large area of previously disturbed land (upon which borrow and fill work would occur) and existing water treatment facilities and equipment. The existing facilities and equipment include: two large water tanks; a shed-like outbuilding structure; chain link and barbwire fencing; a paved road; and electric transmission lines.

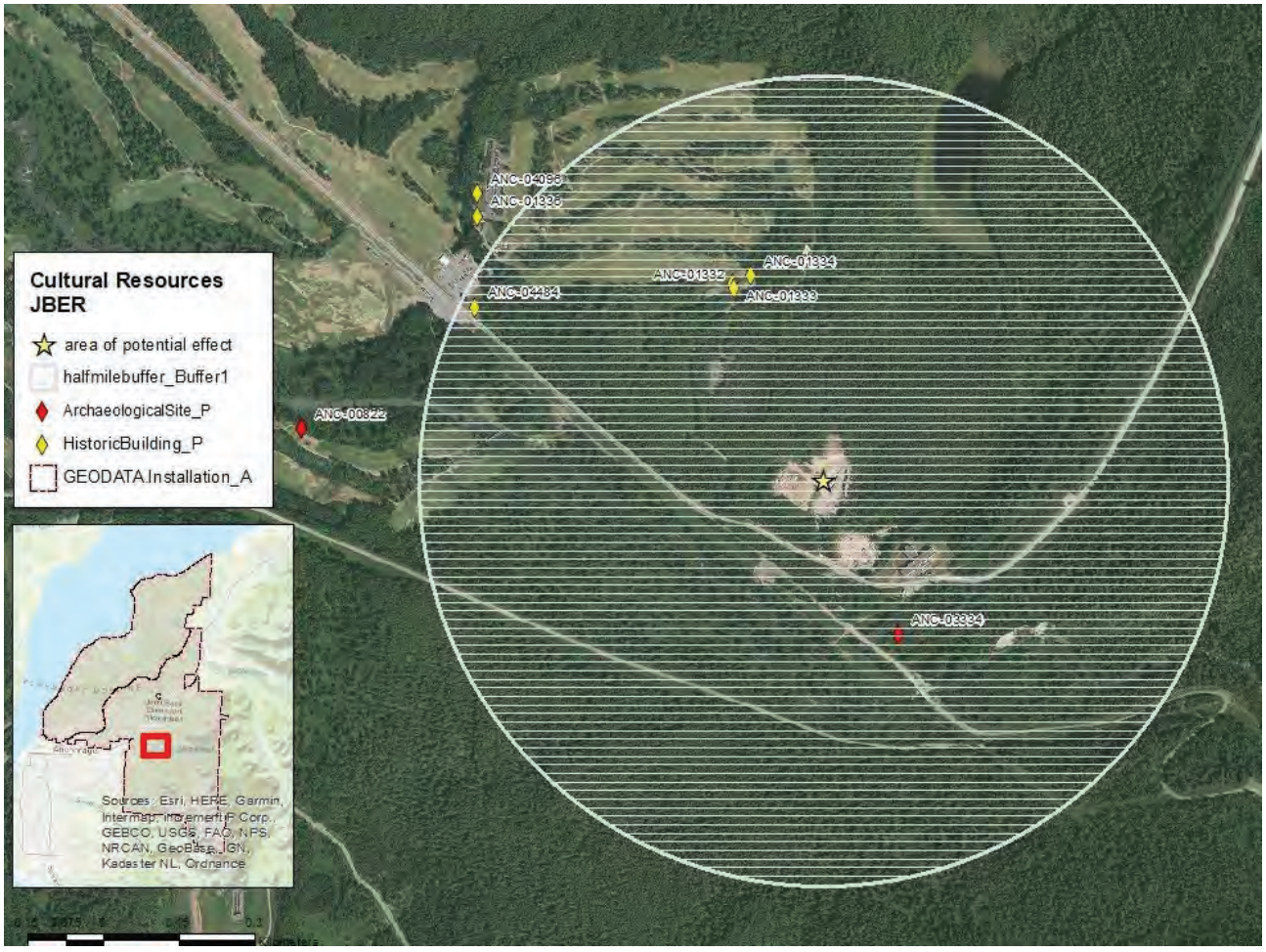

Figure 1. *Water treatment plant location and cultural resources within ½-mile.*

3. Historic Properties in the Area of Potential Effect: In 2005, the Colorado State University Center for Environmental Management of Military Lands and U.S. Army Garrison Alaska completed an archeological survey of the proposed project area as well as a literature review of cultural resources in the area.[1] The survey consisted of a pedestrian survey and judgmental subsurface testing that found no cultural resources within the direct or indirect APE.

The existing water treatment plant (latitude 61.227527, longitude -149.650527) was constructed in the 1950s, is about 250 ft southeast of the proposed new water treatment plant, and within the project's indirect APE. Although the building is over 60 years old, a determination of eligibility for the National Register of Historic Places (NRHP) has not yet been completed. For the purposes of moving forward with construction of the new water treatment plant before the Environmental Protection Agency requires shutdown of the existing plant in 2023, it will be treated as if it is eligible for listing on the NRHP. A formal evaluation of the existing water treatment plant's eligibility will occur if an undertaking directly affecting it is proposed (such as remediation or demolition) and when funding is available.

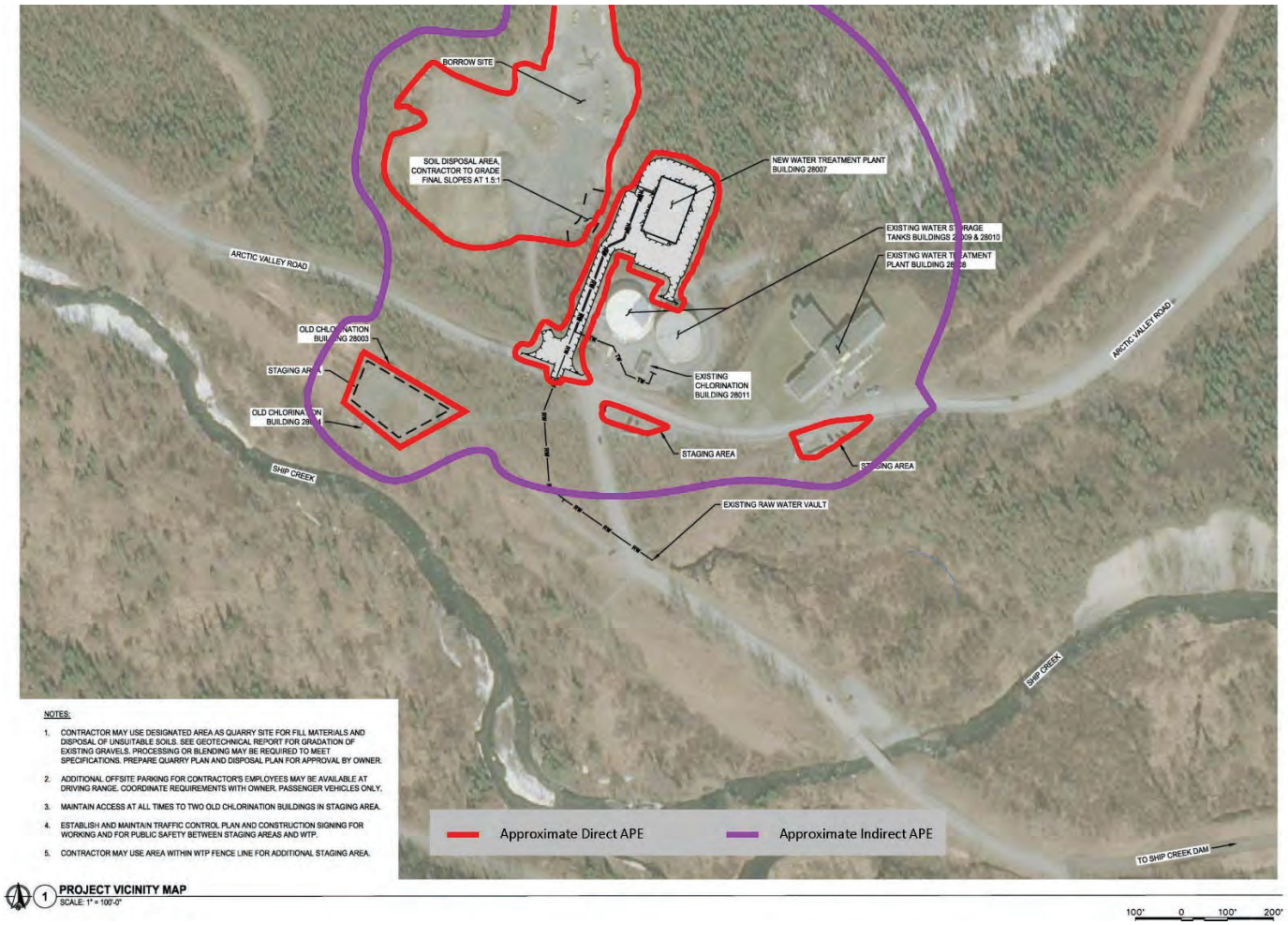

Figure 2. *Proposed project footprint with direct and indirect areas of potential effect.*

[1] Julie Raymond-Yakoubian and Aaron Robertson. 2006. Annual Report: Archaeological Survey and Evaluation, Fort Richardson and Fort Wainwright, 2005. Prepared by Center for Environmental management of Military Lands, Colorado State University. Prepared for Natural Resources Branch, US Army Alaska, Fort Richardson, pp. 57-58, 63-64.

Figure 3. *Looking east toward existing water tanks (foreground) and existing water treatment plant (background) from Arctic Valley Road.*

Figure 4. *Looking northeast from Arctic Valley Road to the existing water tanks.*

Figure 5. *Looking east at Arctic Valley Road and the existing water treatment plant.*

There are five cultural resources within ½-mile of the area of potential effect, in addition to the existing water plant. Three of the resources were buildings associated with Moose Run Gold Course that have been demolished. One is a pump house for the irrigation system at the golf course that has been found not eligible for the NRHP. The final resource was the location of a boulder spall tool that eroded from the banks of Ship Creek. Two test pits were excavated in the immediate vicinity, but no additional cultural deposits were encountered.[2] The stone tool was collected and is accessioned at the University of Alaska Museum of the North. The site was not evaluated for the NRHP and is, therefore, treated as eligible.

Table 1. Reported cultural resources within ½-mile of the area of potential effect.

AHRS # ANC-	Description or Site Name	NRHP status	Affected by undertaking?
01332	General Storage – Moose Run Golf Course	No (demo'd)	No
01333	General Storage – Moose Run Golf Course	No (demo'd)	No
01334	Moose Run Golf Course Quonset Hut	No (demo'd)	No
03334	Prehistoric Site – Fort Richardson	Unevaluated	No
04484	Irrigation Pump Building	No	No
n/a	Ship Creek Water Treatment Plant, Building 28008	Unevaluated	No

4. Assessment of Effects: The design and associated disturbance of the new water treatment plant would be similar to other facilities within the indirect APE. The proposed water treatment plant would not change the nature and experience of the indirect APE that is primarily characterized by industrial use of existing water treatment facilities, including large water tanks, outbuildings, and chain link fencing. The visual effect is consistent with the existing water treatment plant's potential NRHP eligibility. We request your concurrence with these assessments of effect. Although a boulder spall tool was recovered

[2] Kate S. Yeske and Edmund P Gaines. 2010. Letter Report: Various Projects on Fort Richardson. Prepared by Center for Environmental Management of Military Lands, Colorado State University. Prepared for Natural Resources Branch, US Army Alaska, Fort Richardson.

along the bank of Ship Creek, the area of potential effect is approximately 250 meters northeast of the river. In addition, the 2005 archaeological survey found no cultural material in the project area. JBER recommends that the construction of the new JBER water treatment plant will result in ***no historic properties affected*** in the direct APE and that there will be ***no adverse effect to historic properties*** within the indirect APE. We request your concurrence with this assessment of effect.

JBER has also consulted with the Federally Recognized Tribes (Native Village of Eklutna Traditional Council, Native Village of Tyonek, Knik Tribal Council, and the Chickaloon Village Traditional Council), The local and regional Alaska Native Corporations (Cook Inlet Regional Inc. and Eklutna Inc.), and the Anchorage Historic Preservation Commission. If you have any questions, please contact Margan Grover, 673 CES/CEIEC, at 907-384-3467 and margan.grover@us.af.mil or Melissa Shippey, DU, at 907-455-1513 and mshippey@doyonutilities.com.

DYE-PORTO.JEANNE.L.1246003641

Digitally signed by DYE-PORTO.JEANNE.L.1246003641
Date: 2022.01.28 07:36:52 -09'00'

JEANNE L. DYE-PORTO, GS-14, DAF
Chief, Installation Management Flight

CC: Kathleen Hook, DU, Director of Env
Melissa Shippey, DU, Env Compliance Coordinator

From:	Hellmich, Amy S (DNR)
To:	GROVER, MARGAN A GS-12 USAF PACAF 673 CES/CEIEC
Subject:	[Non-DoD Source] RE: Section 106 notification - Construct New Water Treatment Plant on JBER, AK
Date:	Friday, February 11, 2022 10:15:25 AM

3130-1R AF / 2022-00109

Good morning,

The Alaska State Historic Preservation Office (AK SHPO) received your correspondence (dated January 28, 2022) concerning the subject project on January 28, 2022. Following our review of the documentation provided, we concur with the finding of No Historic Properties Affected. Please note that our office may need to re-evaluate our concurrence if changes are made to the project's scope or design.

As stipulated in 36 CFR 800.3, other consulting parties such as the local government and Tribes are required to be notified of the undertaking. Additional information provided by the local government, Tribes, or other consulting parties may cause our office to re-evaluate our comments and recommendations. Please note that our response does not end the 30-day review period provided to other consulting parties.

Should unidentified historical or 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. Please note that some resources can be deeply buried or underwater, and that fossils are considered cultural resources subject to the Alaska Historic Preservation Act.

This email serves as our office's official correspondence for the purposes of Section 106. Thank you for the opportunity to review and comment. Please contact me at (907) 269-8724 or amy.hellmich@alaska.gov if you have any questions or we can be of further assistance.

Best regards,
Amy Hellmich

Amy Hellmich
Alaska State Historic Preservation Office
Office of History and Archaeology
Direct: (907) 269-8724
amy.hellmich@alaska.gov
Teleworking - Email is the best method of communication.

-----Original Message-----
From: DNR, Parks OHA Review Compliance (DNR sponsored) <oha.revcomp@alaska.gov>
Sent: Monday, January 31, 2022 1:11 PM
To: GROVER, MARGAN A GS-12 USAF PACAF 673 CES/CEIEC <margan.grover@us.af.mil>
Cc: Hellmich, Amy S (DNR) <amy.hellmich@alaska.gov>
Subject: FW: Section 106 notification - Construct New Water Treatment Plant on JBER, AK

Good afternoon,

The Office of History and Archaeology/Alaska State Historic Preservation Office received your documentation, and its review has been logged in with Amy Hellmich under 2022-00109. We may contact you if we require additional information. Our office ordinarily has 30 calendar days after receipt to complete our review, but our office has entered tolling in response to complications from COVID-19 and our review may be delayed as a result. Please contact the project reviewer or myself by email if you have any questions or concerns.

Best,
Sarah

Sarah Meitl
Review and Compliance Coordinator
Alaska State Historic Preservation Office Office of History and Archaeology
907-269-8720

-----Original Message-----
From: GROVER, MARGAN A GS-12 USAF PACAF 673 CES/CEIEC <margan.grover@us.af.mil>
Sent: Friday, January 28, 2022 12:10 PM
To: DNR, Parks OHA Review Compliance (DNR sponsored) <oha.revcomp@alaska.gov>
Cc: 'Richard Martin' <rmartin@kniktribe.org>; 'Angie Wade' <alwade@chickaloon-nsn.gov>; 'Jenny Blanchard' <j.haggar@hotmail.com>; 'Bunnell Kristine' <kristine.bunnell@anchorageak.gov>; 'Marc Lamoreaux' <marcl@eklutna.org>; cdowning@tyonek.com; Suzanne Settle <SSettle@ciri.com>; Info <info@eklutnainc.com>; Robin Reich <robin@solsticeak.com>; Melissa Shippey <mshippey@doyonutilities.com>
Subject: RE: Section 106 notification - Construct New Water Treatment Plant on JBER, AK

Chickaloon Village Traditional Council
(Nay'dini'aa Na' Kayax)

VIA EMAIL/FIRST CLASS MAIL

February 18, 2022

Margan A Grover
Cultural Resource Manager
Joint Base Elmendorf-Richardson
673 CES/CEIEC
(office) 907-384-3467
(mobile) 907-244-9188 / (telework) 907-688-0510
margan.grover@us.af.mil

RE: New Water Treatment Plant on Joint Base Elmendorf-Richardson (JBER)

Dear Margan Grover:

Chickaloon Native Village (CNV) is a federally-recognized Ahtna Dene' Tribe in southcentral Alaska, governed by CVTC. CNV's ancestral territory and traditional area of influence include trading trails that span from the Beaufort Sea to the Copper River Delta. This territory also encompasses much of southcentral Alaska; the Upper Cook Inlet; the Copper River Region; the Alaska Range and the Susitna River watershed. We acknowledge that this region overlaps neighboring Dene' and other Tribal traditional customary use areas.

Actions that occur within Dene traditional ancestral territory and customary area of use (as noted above) may impact the environment, Dene cultural resources, and the health of our Tribal citizens and community members. To mitigate these impacts, CVTC employs a Tribal Historic Preservation Officer working to identify, protect and preserve cultural sites and artifacts.

CVTC received notification and request for concurrence on finding of no historic properties affected on February 7, 2020. We appreciate the opportunity to consult on the proposed undertaking.

Consultation

The proposed project has not met the obligations for consultation with Alaska Native Tribal Governments under 36 CFR 800, as this letter is the first CVTC is learning of this proposed undertaking. Under the "Notice: Advisory Council on Historic Preservation Amendments to the Army Alternate Procedures",

> Tribal consultation means seeking, discussing, identifying and considering Tribal views through good faith dialogue with Federally recognized Indian Tribes on a government-to-government basis in recognition of the unique relationship between Federal and Tribal governments and the status of Federally recognized Indian Tribes as sovereign nations (see government-to-government relations). The Tribal Historic Preservation Officer (THPO) serves as the Tribal official for government-to-government consultation for undertakings affecting historic properties off Tribal lands only where the Tribal government has designated the THPO as the Tribe's designated representative responsible for carrying out such functions (2004 Federal Register 69(74):20580).

PO BOX 1105 Chickaloon, Alaska 99674 **Phone (907) 745-0749 Fax (907) 745-0709**
e-mail: cvadmin@chickaloon-nsn.gov **Home Page: http://www.chickaloon-nsn.gov**

While it is possible JBER may have sent an initial letter, to our knowledge there has been no follow-up since before the 2005 field surveys despite numerous requests in letters and meetings to JBER for follow-up on upcoming projects as well as initiating consultation much earlier in the process-at the inception of a project. These letters and meetings have also indicated CVTCs request to be involved in cultural resources fieldwork that attempts to document sites of cultural and religious significance to CVTC.

Findings
CVTC **concurs that there will be no adverse effects to:** ANC-01332 (General Storage-Moose Run Golf Course), ANC-01333 (General Storage-Moose Run Golf Course), ANC-01334 (Moose Run Golf Course Quonset Hut), ANC-04484 (Irrigation Pump Building), and n/a (Ship Creek Water Treatment Plant, Building 28008).

However, CVTC **does not concur** that there will be no adverse effects to historic properties. Oral history indicates Deshtnu Bena 'Spruce Hen Stream Lake' and Dishno Pond, are Dene place names located adjacent to upper Ship Creek on the military's Moose Run Golf Course.

Dgheyay Kaq' - 'Stickleback Mouth' / mouth of Ship Creek is an early name for Anchorage (Davis 1965:15,18). "Ship Creek was the hereditary fish camp site for several Eklutna families... In 1915 Dene were moved off their traditional site on Ship Creek." This area was known for stickleback runs, and remained an important food location for Dene. CVTC maintains many other oral traditions associated with this area.

The previous cultural resource surveys do not report how many subsurface tests were conducted. Two are reported, and this is inadequate to assess impacts to ancient, buried Dene sites. The recognition of a boulder spall tool at **ANC-03334** confirms CVTC's oral history of the importance of this area. This site remains unevaluated, and the two subsurface tests are insufficient to define the nature, extent, and geographic limits of the site.

CVTC requests:
1) Continued consultation on this proposed undertaking;
2) A Phase I archaeological survey designed to identify buried Dene sites utilizing standardized subsurface testing with CVTC representatives and monitors;
3) A Phase II archaeological survey to evaluate previously unevaluated sites designed and fieldwork conducted with CVTC representatives and monitors; and,
4) Additional information on the source of gravel fill and impacts to cultural resources in these fill source locations.

CVTC appreciates the opportunity to comment on this project with the JBER to steward Dene land, particularly in these culturally sensitive areas. We look forward to working with you, if you have any questions please contact Angela Wade, Tribal Historic Preservation Officer at alwade@chickaloon-nsn.gov or Norma Johnson, Deputy Tribal Historic Preservation Officer at nmjohnson@chickaloon-nsn.gov.

May Nek'eltaeni (Creator) Guide Our Footsteps,

Chief Gary Harrison (Feb 19, 2022 11:32 AKST)

Chief Gary Harrison
Traditional Chief/Chairman

PO BOX 1105 Chickaloon, Alaska 99674 **Phone (907) 745-0749 Fax (907) 745-0709**
e•mail: cvadmin@chickaloon-nsn.gov **Home Page: http://www.chickaloon-nsn.gov**

From:	GROVER, MARGAN A GS-12 USAF PACAF 673 CES/CEIEC
To:	"Hellmich, Amy S (DNR)"
Cc:	"Meitl, Sarah J (DNR)"
Subject:	FW: [URL Verdict: Neutral][Non-DoD Source] DU Project No. 8257 - New Water Treatment Plant on Joint Base Elmendorf-Richardson (JBER)
Date:	Wednesday, February 23, 2022 12:08:00 PM
Attachments:	DU Project No. 8257_response letter_021822 - signed.pdf

Good morning Amy
I'm not sure if you received the attached letter JBER received from Chickaloon Village Traditional Council regarding the proposed construction of a new water treatment plant by Doyon Utilities.

We received your SHPO concurrence on this project on 11 February 2022. The Tribe is requesting a new archaeological survey. We intend to re-examine the area of potential effect in coordination with CVTC (and others, if they wish) early this summer. The survey results will be provided to your office and other consulting parties. This may include a new assessment of effect.

Please let us know if this effects your concurrence.

Thanks so much!
Margan

Margan A Grover
Cultural Resource Manager
Joint Base Elmendorf-Richardson
673 CES/CEIEC
(office) 907-384-3467
(mobile) 907-244-9188 / (telework) 907-688-0510
margan.grover@us.af.mil
I live and work on Dena'ina Land.

From: Kristina Duncan <kmduncan@chickaloon-nsn.gov>
Sent: Tuesday, February 22, 2022 9:18 AM
To: GROVER, MARGAN A GS-12 USAF PACAF 673 CES/CEIEC <margan.grover@us.af.mil>
Cc: Angie Wade <alwade@chickaloon-nsn.gov>
Subject: [URL Verdict: Neutral][Non-DoD Source] DU Project No. 8257 - New Water Treatment Plant on Joint Base Elmendorf-Richardson (JBER)

Dear Margan Grover,

Please find our letter attached regarding the New Water Treatment Plant on Joint Base Elmendorf-Richardson (DU Project No. 8257).

Tsin'aen (thank you),

Kristina Duncan
ESD/THPO Administrative Assistant
Nay'dini'aa Na' Kayax (Chickaloon Village Traditional Council)
PO Box 1105
Chickaloon, AK 99674
Cell: (623) 363-4132
Email: kmduncan@chickaloon-nsn.gov

T s'itonhtna' nene' ghestnaa eɬ izdaa (*I live and work on Matanuska River land.*)
Message sent from the ancestral homelands of the Ahtna peoples.

From:	Hellmich, Amy S (DNR)
To:	GROVER, MARGAN A GS-12 USAF PACAF 673 CES/CEIEC
Cc:	Meitl, Sarah J (DNR)
Subject:	RE: [URL Verdict: Neutral][Non-DoD Source] DU Project No. 8257 - New Water Treatment Plant on Joint Base Elmendorf-Richardson (JBER)
Date:	Wednesday, February 23, 2022 12:52:45 PM

Hello Margan,

Thank you for letting us know. The results of the new archaeological survey could affect our concurrence. Please keep me appraised of the situation. We look forward to receiving the survey results.

Cheers.
Amy

Amy Hellmich
Alaska State Historic Preservation Office
Office of History and Archaeology
Direct: (907) 269-8724
amy.hellmich@alaska.gov
Teleworking - Email is the best method of communication.

-----Original Message-----
From: GROVER, MARGAN A GS-12 USAF PACAF 673 CES/CEIEC <margan.grover@us.af.mil>
Sent: Wednesday, February 23, 2022 12:09 PM
To: Hellmich, Amy S (DNR) <amy.hellmich@alaska.gov>
Cc: Meitl, Sarah J (DNR) <sarah.meitl@alaska.gov>
Subject: FW: [URL Verdict: Neutral][Non-DoD Source] DU Project No. 8257 - New Water Treatment Plant on Joint Base Elmendorf-Richardson (JBER)

---------- Forwarded message ---------
From: **GROVER, MARGAN A GS-12 USAF PACAF 673 CES/CEIEC** <margan.grover@us.af.mil>
Date: Fri, Apr 15, 2022 at 11:50 AM
Subject: Survey Work Plan review and comment - Doyon Utilities New Water Treatment Plant, JBER
To: DNR, Parks OHA Review Compliance (DNR sponsored) <oha.revcomp@alaska.gov>
Cc: Richard Martin <rmartin@kniktribe.org>, Angie Wade <alwade@chickaloon-nsn.gov>, Bunnell Kristine <kristine.bunnell@anchorageak.gov>, Marc Lamoreaux <marcl@eklutna.org>, Michael Yarborough <salvagerecovery@gmail.com>

Attached is the work plan for an archaeological survey on JBER. We began consultation on the construction of a new water treatment plant on the installation by Doyon Utilities in January 2022. We agreed, through consultation, that a new survey of the area of potential effect is required. The field work will be completed by Cultural Resource Consultants, under contract to Doyon. I have cc'd Mike Yarborough on this email.

The *Programmatic Agreement for Operation, Maintenance, and Development Activities on JBER* Stipulation II.B.3 requires that JBER consult with the SHPO and consulting parties on archaeological survey methods. Although the PA is currently in route for signatures (not executed), JBER believes it is good practice to implement some of the administrative requirements of the PA, such as consulting on field methods.

Your comments should be returned within 30 days of receiving the plan. Please include Mr. Yarborough in your response.

Thank you for your time.

Margan A Grover

Cultural Resource Manager

Joint Base Elmendorf-Richardson

673 CES/CEIEC

(office) 907-384-3467

(mobile) 907-244-9188

margan.grover@us.af.mil

I live and work on Dena'ina Land.

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS, 673D AIR BASE WING
JOINT BASE ELMENDORF-RICHARDSON, ALASKA

MEMORANDUM FOR ALASKA DEPARTMENT OF NATURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICER
ATTENTION: MS. JUDITH E. BITTNER

FROM: 673 CES/CEIEC
6326 Arctic Warrior Drive
JBER AK 99506-3240

SUBJECT: Work Plan and Survey Methods for New Water Treatment Plant on Joint Base Elmendorf-Richardson (JBER)

1. The Joint Base Elmendorf-Richardson (JBER) Environmental Conservation Section (673d CES/CEIEC) is coordinating construction of a new water treatment plant to be constructed by Doyon Utilities. We initiated consultation for this project on January 28, 2022. Your office concurred with a finding of "no historic properties affected" on February 11, 2022. However, consultation with other interested parties resulted in a request to re-survey the area of potential effect. JBER agrees that the survey is more than ten years old and did not document the locations or results of subsurface testing adequately. As a result, we required Doyon Utilities to complete another archaeological survey.

2. The purpose of this letter is to provide you with a copy of *Cultural Resources Study Plan: New Water Treatment Plant on Joint Base Elmendorf-Richardson* prepared by Cultural Resource Consultants, who will be conducting the survey. The *Programmatic Agreement for Operation, Maintenance, and Development Activities on JBER* (in route for signatures) Stipulation II.B.3 requires that JBER consults with the Alaska State Historic Preservation Officer (SHPO) and consulting parties on archaeological survey methods.

3. The Work Plan does not include a field schedule. Currently, Cultural Resource Consultants intend to conduct the survey after the review period for this plan has passed, the JBER Dig Permit Form 3 is complete, and the ground is no longer frozen. They anticipate this will be late May or early June.

4. JBER PA Stipulation II.B.3.a provides 30 days for comments on this plan. The Work Plan has also been provided to Federally Recognized Tribes (Native Village of Eklutna Traditional Council, Native Village of Tyonek, Knik Tribal Council, and the Chickaloon Village Traditional Council) and the Anchorage Historic Preservation Commission. If you have any questions or comments, please contact Margan Grover, 673 CES/CEIEC, at 907-384-3467 and margan.grover@us.af.mil.

DYE-PORTO.JEANNE.L.1246003641
Digitally signed by DYE-PORTO.JEANNE.L.1246003641
Date: 2022.04.14 13:41:29 -08'00'

JEANNE L. DYE-PORTO, GS-14, DAF
Chief, Installation Management Flight

Chickaloon Village Traditional Council
(Nay'dini'aa Na' Kayax)

VIA EMAIL/FIRST CLASS MAIL

May 13, 2022

Margan A Grover
Cultural Resource Manager
Joint Base Elmendorf-Richardson
673 CES/CEIEC
(office) 907-384-3467
(mobile) 907-244-9188 / (telework) 907-688-0510
margan.grover@us.af.mil

RE: New Water Treatment Plant on Joint Base Elmendorf-Richardson (JBER)

Dear Margan Grover:
Chickaloon Native Village (CNV) is a federally-recognized Ahtna Dene' Tribe in southcentral Alaska, governed by CVTC. CNV's ancestral territory and traditional area of influence include trading trails that span from the Beaufort Sea to the Copper River Delta. This territory also encompasses much of southcentral Alaska; the Upper Cook Inlet; the Copper River Region; the Alaska Range; the Matanuska watershed; and the Susitna River watershed. We acknowledge that this region overlaps neighboring Dene and other Tribal traditional customary use areas.

Actions that occur within Dene traditional ancestral territory and customary area of use (as noted above) may impact the environment, Dene cultural resources, and the health of our Tribal citizens and community members. To mitigate these impacts, CVTC employs a Tribal Historic Preservation Officer working to identify, protect and preserve cultural sites and artifacts.

CVTC received notification on the survey work plan for review and comment on the Doyon Utilities New Water Treatment Plant on April 15, 2022. CVTC appreciates the ongoing consultation including the opportunity to consult on the proposed survey work plan.

Work Plan Comments
Below please find general and detailed comments to improve and meet CVTCs and professional standards for a good faith effort at identification and evaluation of cultural resources.

1. The work plan and subsequent reports need to conduct a more thorough and inclusive literature review including all of the consulting Tribes as well as any additional Tribes or cultures with connections to the APE.

2. The survey needs to develop a specific methodology for recognizing and recording culturally modified trees including GPS coordinates, photographs, and descriptions of the modification.

3. Field effort should involve pedestrian survey with standardized and pre-approved subsurface testing frequency over the entirety of the proposed APE. All pedestrian survey should be documented via GPS tracking and reported in maps as well as digital track files in the final report.

4. Subsurface testing needs to occur more frequently and outside areas the archaeological contractor deems as "a higher potential for buried cultural resources." First, subsurface testing needs to establish a stratigraphic baseline for undisturbed deposits.

5. All surface exposures will be transected for careful inspection of cultural materials. In high probability areas, up to 16 shovel tests/acre will be utilized. Areas deemed having a higher potential for archaeological sites will be more intensively surveyed than areas less likely to encompass sites such as lowlands and steep slopes. Medium probability localities will be supplemented with 50% of the overall level of effort that would be conducted in a high probability location (8 tests/acre). In low probability areas such as wetland and disturbed areas pedestrian walk overs will be supplemented with 2 tests/acre.

6. The archaeological contractor should invite and include all consulting Tribes to participate and be compensated for field surveys. CVTC is especially interested in conducting fieldwork for this APE.

7. The archaeological contractor and JBER shall consult CVTC for site determinations of eligibility.

8. Final reporting needs to include maps of all areas transected, quantity and location of subsurface tests, and summary of culturally modified trees including maps of their locations and descriptions. Any LiDAR maps utilized for this project should also be included in the report.

CVTC appreciates the opportunity to comment on this project with the JBER to steward Dene land, particularly in these culturally sensitive areas. We look forward to working with you, if you have any questions please contact Angela Wade, Tribal Historic Preservation Officer at alwade@chickaloon-nsn.gov or Norma Johnson, Deputy Tribal Historic Preservation Officer at nmjohnson@chickaloon-nsn.gov.

May Nek'eltaeni (Creator) Guide our Footsteps,

Chief Gary Harrison (May 13, 2022 23:00 AKDT)

Traditional Chief Gary Harrison
Chickaloon Village Traditional Council

PO BOX 1105 Chickaloon, Alaska 99674 **Phone (907) 745-0749 Fax (907) 745-0709**
e•mail: cvadmin@chickaloon-nsn.gov **Home Page: http://www.chickaloon-nsn.gov**

Robin Reich

From: GROVER, MARGAN A GS-12 USAF PACAF 673 CES/CEIEC <margan.grover@us.af.mil>
Sent: Tuesday, September 27, 2022 9:33 AM
To: Robin Reich
Cc: Michael Yarborough
Subject: FW: Cultural resource survey report - Water Treatment Plant, JBER
Attachments: JBER water treatment plant report submittal letter.pdf

For your records. Here is the email and cover letter for the survey report submittal. I removed all the attachments but our cover letter.
Margan

From: GROVER, MARGAN A GS-12 USAF PACAF 673 CES/CEIEC
Sent: Thursday, September 15, 2022 12:35 PM
To: 'DNR, Parks OHA Review Compliance (DNR sponsored)' <oha.revcomp@alaska.gov>
Cc: 'Richard Martin' <rmartin@kniktribe.org>; 'Angie Wade' <alwade@chickaloon-nsn.gov>; 'Bunnell Kristine' <kristine.bunnell@anchorageak.gov>; 'Marc Lamoreaux' <marcl@eklutna.org>
Subject: Cultural resource survey report - Water Treatment Plant, JBER

Attached is a revised notification under Section 106 of the National Historic Preservation Act and accompanying report. Doyon Utilities proposes to construct a new water treatment plant on Joint Base Elmendorf-Richardson, near Ship Creek, that will replace the existing plant. We initiated consultation for this undertaking on January 28, 2022. Although the AK SHPO concurred that the project would result in no historic properties affected, CVTC requested that the archaeological survey be redone, due to the length of time since the last survey and the lack of detail in the original report. The report of the new survey is attached for your review. JBER recommends the proposed project will still result in no historic properties affected. We request your concurrence on this assessment of effect.

CVTC also requested an opportunity to examine the area of potential effect themselves. Please contact me if you are interested and provide some dates of availability. I recommend in the first few weeks of October.

Thank you for your time. Please let me know if you have any questions or concerns.

Margan A Grover
Cultural Resource Manager
Joint Base Elmendorf-Richardson
673 CES/CEIEC
(office) 907-384-3467
(mobile) 907-244-9188
margan.grover@us.af.mil
I live and work on Dena'ina Land.

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS, 673D AIR BASE WING
JOINT BASE ELMENDORF-RICHARDSON, ALASKA

MEMORANDUM FOR ALASKA DEPARTMENT OF NATURAL RESOURCES
OFFICE OF HISTORY AND ARCHAEOLOGY
ATTENTION: MS. JUDITH E. BITTNER

FROM: 673 CES/CEIEC
6326 Arctic Warrior Drive
JBER AK 99506-3240

Subject: Cultural Resource Survey and Assessment of Effect for the Proposed Joint Base Elmendorf-Richardson Water Treatment Plant Construction

1. Purpose and Need: The Joint Base Elmendorf-Richardson (JBER) Environmental Conservation Section (673d CES/CEIEC) is coordinating the cultural resources consultation for construction of a new water treatment plant. The new plant would replace the existing Doyon Utilities (DU)-owned and operated water treatment plant that processes water flowing from Ship Creek Dam. The purpose of this letter is to provide you the report on the archaeological investigation of the project's area of potential effect (attached) and provide an assessment of effect. A notification of this undertaking was sent to your office and consulting parties on January 28, 2022. You concurred on an assessment of no historic properties affected on February 11, 2022; however, Chickaloon Village Traditional Council (CVTC) requested that the area be re-examined for cultural resources in a February 18, 2022, letter. JBER agreed and a work plan for the survey was submitted for review on April 15, 2022. Although your office found that the survey plan was appropriate, CVTC made several recommendations for adjustments for additions to the methods and reporting. Many of these changes were incorporated and the survey was completed by Cultural Resource Consultants on June 1-2, 2022. A report is attached for your review. A site visit with tribal representatives will be conducted this fall before construction begins.

This letter does not address the demolition of the existing water treatment plant. It is currently being evaluated for eligibility for the National Register of Historic Places. A report and assessment of effect for that phase of the project will be submitted separately. An Environmental Assessment will also be completed for this project.

2. Project Description and Area of Potential Effect: The proposed project would construct a new water treatment plant along Ship Creek and adjacent to the existing water treatment plant (Seward Meridian, Township, 13N, Range 2W, Section 9, Anchorage quadrangle A-8; Figure 1). As JBER's water utility provider, DU would construct the project (DU Project No. 8257) and is responsible for environmental studies and permits. This phase of the project would construct a new gravity-fed water treatment plant system with pressure boosted by raw water feed pumps. To use the existing pipes and clear wells, the new water treatment plant would be built about 250 feet (ft) northwest of the current water treatment plant, adjacent to the two existing 1.5 million-gallon clear wells (water tanks). Figure 1 and Table 2 describe all known cultural resources within ½-mile of the direct area of potential effect in order to encompass any potential indirect effects.

The area of potential effect is approximately 5.46-acres. This encompasses the approximately 0.3-acre (about 13,000 sq ft) where the facility would be constructed, an approximately 4.7-acre (204,732 sq ft) area where material borrow and soil disposal would occur, and three separate staging areas south of Arctic Valley Road. Staging Area 1 is about 0.23-acres (10,825 sq ft), Staging Area 2 is about 0.13-acres (5,650 sq ft), and Staging Area 3 is about 0.1-acres (4,500 ft). The January 2022 notification letter provides a detailed description of the project.

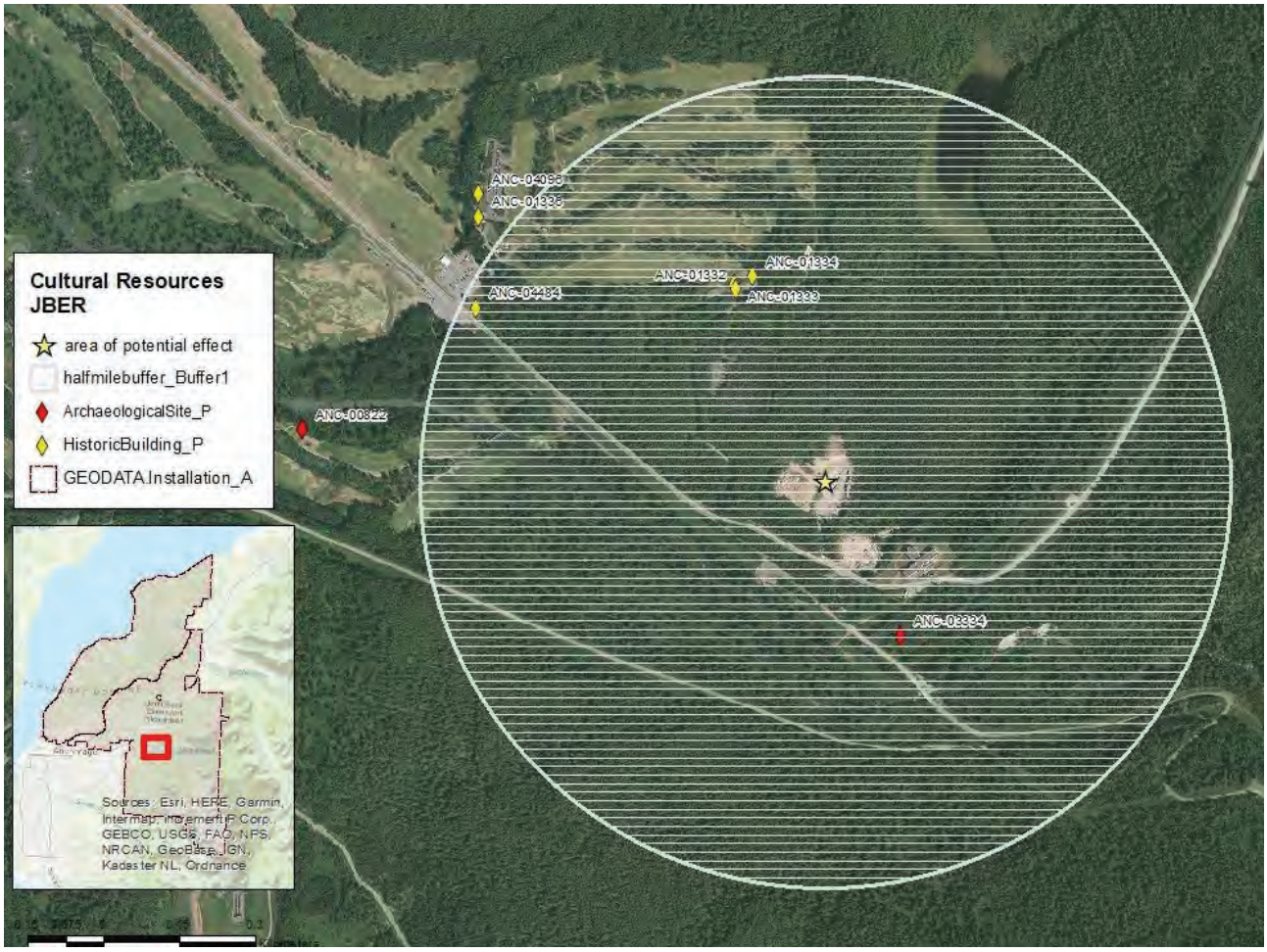

Figure 1. *Water treatment plant location and cultural resources within ½-mile.*

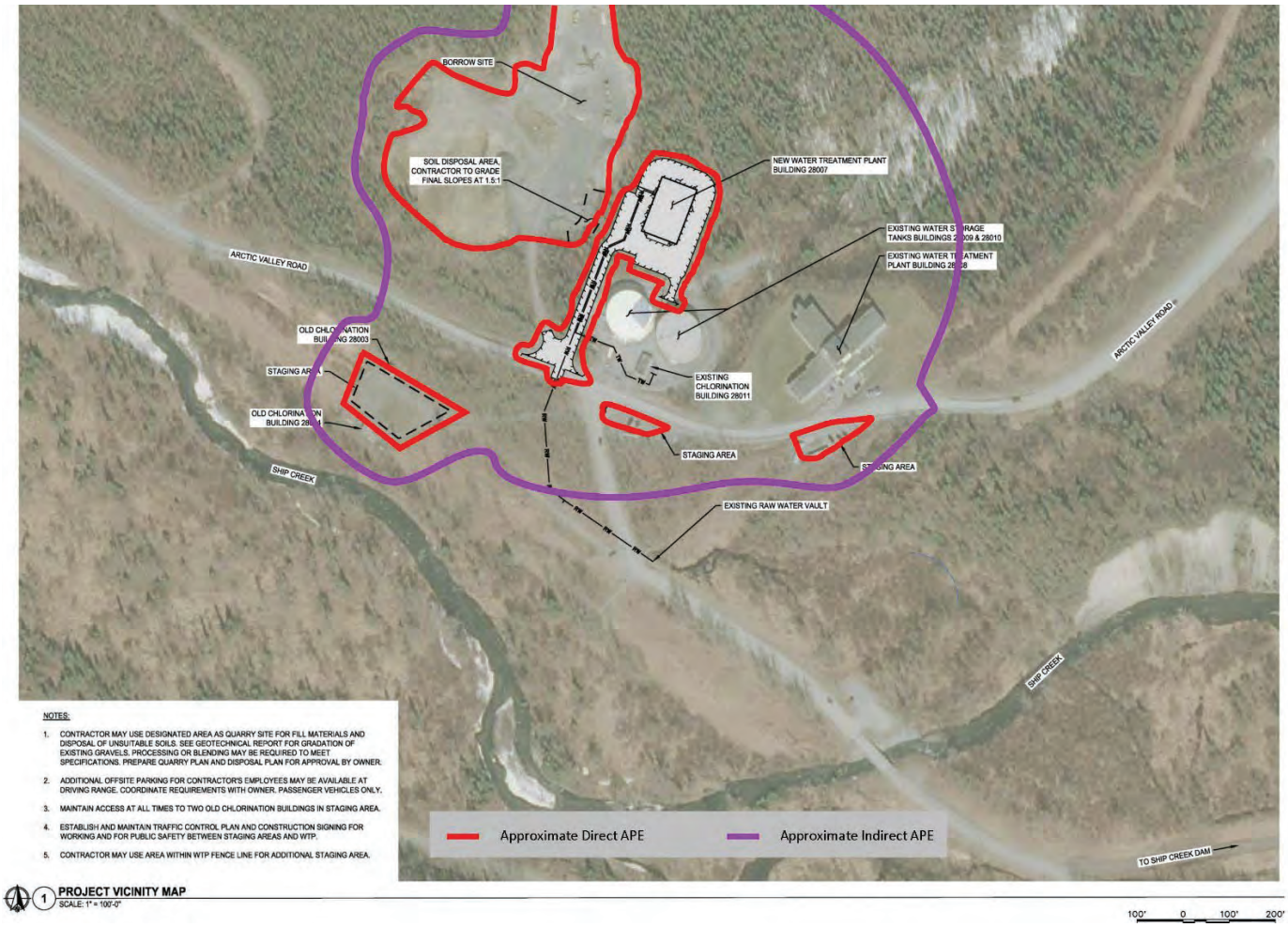

Figure 2. *Proposed project footprint with direct and indirect areas of potential effect.*

3. Historic Properties and the Area of Potential Effect: In 2005, the Colorado State University Center for Environmental Management of Military Lands and U.S. Army Garrison Alaska completed an archeological survey of the proposed project area as well as a literature review of cultural resources in the area.[1] The survey consisted of a pedestrian survey and judgmental subsurface testing that found no cultural resources within the direct or indirect APE.

The existing Ship Creek Water Treatment Plant (Building 28008) was constructed in the 1950s and is about 250 ft southeast of the proposed new water treatment plant, and within the project's indirect APE. Although the building is over 60 years old, a determination of eligibility for the National Register of Historic Places has not yet been completed. For the purposes of moving forward with construction of the new water treatment plant before the Environmental Protection Agency requires shutdown of the existing plant in 2023, it will be treated as if it is eligible for the National Register.

[1] Julie Raymond-Yakoubian and Aaron Robertson. 2006. Annual Report: Archaeological Survey and Evaluation, Fort Richardson and Fort Wainwright, 2005. Prepared by Center for Environmental management of Military Lands, Colorado State University. Prepared for Natural Resources Branch, US Army Alaska, Fort Richardson, pp. 57-58, 63-64.

There are seven cultural resources within ½-mile of the area of potential effect, in addition to the existing water plant. Three of the resources were buildings associated with Moose Run Gold Course that have been demolished. One is a pump house (ANC-04484) for the irrigation system at the golf course that has been found not eligible. The final resource was the location of a boulder spall tool (ANC-03334) that eroded from the banks of Ship Creek. Two test pits were excavated in the immediate vicinity, but no additional cultural deposits were encountered.[2] The stone tool was collected and is accessioned at the University of Alaska Museum of the North. The site was not evaluated for the National Register and is, therefore, treated as eligible. Dgheyaytnu or Dgheyay Leht ("Stickleback Creek", "Where Stickleback Run", or Ship Creek) is immediately south of the area of potential effect. This river is a reliable source of salmon and stickleback. As a result, there were Dene houses (the settlement called Dgheyay Kaq') along the northern bank closer to the river outlet as recently as the 1930s. Deshtnu Bena ("Spruce Hen Spring Lake" or Dishno Pond) is north of the area of potential effect. CVTC mentioned this location specifically as an area of concern in their correspondence. Little is known about the role of this pond in the past (for subsistence, navigation, religious, or other reasons), but combined with the presence of a stone tool along Ship Creek nearby, CVTC requested that the area of potential effect receive additional scrutiny.

Table 1. Reported cultural resources within ½-mile of the area of potential effect.

AHRS # ANC-	Description or Site Name	NRHP status	Affected by undertaking?
01332	General Storage – Moose Run Golf Course	No (demo'd)	No
01333	General Storage – Moose Run Golf Course	No (demo'd)	No
01334	Moose Run Golf Course Quonset Hut	No (demo'd)	No
03334	Prehistoric Site – Fort Richardson	Unevaluated	No
04484	Irrigation Pump Building	No	No
n/a	Ship Creek Water Treatment Plant, Building 28008	Unevaluated	No
n/a	Deshtnu Bena (Dishno Pond)	Unevaluated	No
n/a	Dgheyaytnu, Dgheyay Leht (Ship Creek)	Unevaluated	No

4. 2021 Archaeological Survey Results and National Register Eligibility: The entire area of potential effect was surveyed and subsurface testing was completed. All material was screened through ¼-inch hardware mesh. Soil stratigraphy was recorded and photographed. Test locations were mapped with a GPS. Three depressions, a bark-stripped birch tree, and recent structural material were documented. The stratigraphy, morphology, and placement on the landscape of the three depressions are consistent with fighting positions (foxholes). The bark-stripped tree was dated to approximately 20 years old and is unlikely to be associated with Dene activity (as a marker, for making material culture objects, or other function). The structural remains are most likely associated with a structure that was built in the 1960s and demolished by 1999. The attached report provides additional detail of the methods employed for the survey and an analysis of the resources encountered. JBER 673 CES/CEIEC agrees with the Cultural Resource Consultants recommendations (Table 2) that ***the cultural depressions, culturally modified tree, and structural remains (staircase and utility pole) are not eligible for the National Register of Historic Places***.

[2] Kate S. Yeske and Edmund P Gaines. 2010. Letter Report: Various Projects on Fort Richardson. Prepared by Center for Environmental Management of Military Lands, Colorado State University. Prepared for Natural Resources Branch, US Army Alaska, Fort Richardson.

Table 2. Recommendations for determinations of eligibility for the National Register of Historic Places.

Description or Site Name	DOE recommendation	Assessment of effect
Cultural depressions (fighting positions)	Not eligible	No effect
Culturally modified tree	Not eligible	No effect
Structural remains (staircase, utility pole)	Not eligible	No effect
ANC-03334, Prehistoric Site – Fort Richardson	Unevaluated (treat as eligible)	No indirect effects
Ship Creek Water Treatment Plant, Building 28008	Unevaluated (treat as eligible)	No indirect effects
Deshtnu Bena (Dishno Pond)	Unevaluated (treat as eligible)	No indirect effects
Dgheyaytnu, Dgheyay Leht (Ship Creek)	Unevaluated (treat as eligible)	No indirect effects

5. Assessment of Effect: Provided you agree with the determinations of eligibility above, JBER recommends that the construction of the new JBER water treatment plant will result in ***no historic properties affected*** in the direct APE and that there will be ***no adverse effect to historic properties*** within the indirect APE. We request your concurrence with this assessment of effect.

JBER has also consulted with the Federally Recognized Tribes (Native Village of Eklutna Traditional Council, Native Village of Tyonek, Knik Tribal Council, and the Chickaloon Village Traditional Council), The local and regional Alaska Native Corporations (Cook Inlet Regional Inc. and Eklutna Inc.), and the Anchorage Historic Preservation Commission. If you have any questions, please contact Margan Grover, 673 CES/CEIEC, at 907-384-3467 and margan.grover@us.af.mil.

DYE-PORTO.JEANNE.L.1246003641

Digitally signed by DYE-PORTO.JEANNE.L.1246003641
Date: 2022.09.15 07:19:32 -08'00'

JEANNE L. DYE-PORTO, GS-14, DAF
Chief, Installation Management Flight

Robin Reich

From: GROVER, MARGAN A GS-12 USAF PACAF 673 CES/CEIEC <margan.grover@us.af.mil>
Sent: Tuesday, October 25, 2022 11:17 AM
To: DNR, Parks OHA Review Compliance (DNR sponsored)
Cc: Richard Martin; Angie Wade; Bunnell Kristine; Marc Lamoreaux
Subject: Section 106 notification - Water Treatment Plant demolition, JBER
Attachments: oha report cover sheet_bldg eval.pdf; 106application_bldg demo.pdf; JBER water treatment plant bldg eval submittal letter.pdf; JBER WTP Determination of Eligibility_final.pdf

Attached is a notification under Section 106 of the National Historic Preservation Act. JBER previously coordinated the construction phase of this project with you. Since that time, the National Register status has been evaluated. The attached report provides that evaluation. The attached letter provides additional information about the undertaking and an assessment of effect. JBER recommends that the JBER Cold War Water Treatment Plant on Ship Creek is eligible for the National Register under Criterion C. We also recommend that the demolition of the building would result in adverse effects to historic properties. Provided you concur, a Memorandum of Agreement will be developed to resolve those effects. The Advisory Council on Historic Preservation has been invited to participate.

Please feel free to contact me with any questions or concerns.

Thank you for your time.

Margan A Grover
Cultural Resource Manager
Joint Base Elmendorf-Richardson
673 CES/CEIEC
(office) 907-384-3467
(mobile) 907-244-9188
margan.grover@us.af.mil
I live and work on Dena'ina Land.

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS, 673D AIR BASE WING
JOINT BASE ELMENDORF-RICHARDSON, ALASKA

MEMORANDUM FOR ALASKA DEPARTMENT OF NATURAL RESOURCES
OFFICE OF HISTORY AND ARCHAEOLOGY
ATTENTION: MS. JUDITH E. BITTNER

FROM: 673 CES/CEIEC
6326 Arctic Warrior Drive
JBER AK 99506-3240

Subject: Determination of Eligibility for the Joint Base Elmendorf-Richardson Cold War Water Treatment Plant (ANC-04658)

1. Purpose and Need: The Joint Base Elmendorf-Richardson (JBER) Environmental Conservation Section (673d CES/CEIEC) is coordinating the cultural resources consultation for construction of a new water treatment plant. The new plant would replace the existing Doyon Utilities (DU)-owned and operated water treatment plant that processes water flowing from Ship Creek Dam. The purpose of this letter is to provide you the determination of eligibility for the existing Water Treatment Plant (Building 28008, ANC-04658) and provide an assessment of effect. A notification of this undertaking was sent to your office and consulting parties on January 28, 2022. You concurred on an assessment of no historic properties affected on February 11, 2022; however, Chickaloon Village Traditional Council (CVTC) requested that the area be re-examined for cultural resources in a February 18, 2022, letter. JBER agreed and a work plan for the survey was submitted for review on April 15, 2022. The report for the new survey was submitted on September 21, 2022. At this time, your office has not responded. An Environmental Assessment will also be completed for this project.

2. Project Description and Area of Potential Effect: The proposed project would construct a new water treatment plant along Ship Creek and adjacent to the existing water treatment plant (Seward Meridian, Township, 13N, Range 2W, Section 9, Anchorage quadrangle A-8; Figure 1). As JBER's water utility provider, DU would construct the project (DU Project No. 8257) and is responsible for environmental studies and permits. This phase of the project would demolish the existing Water Treatment Plant (Building 28008, ANC-04658). The area of potential effect is the building footprint and the surrounding 15 meters. Figure 1 and Table 1 describe all known cultural resources within ½-mile of the direct area of potential effect in order to encompass any potential indirect effects.

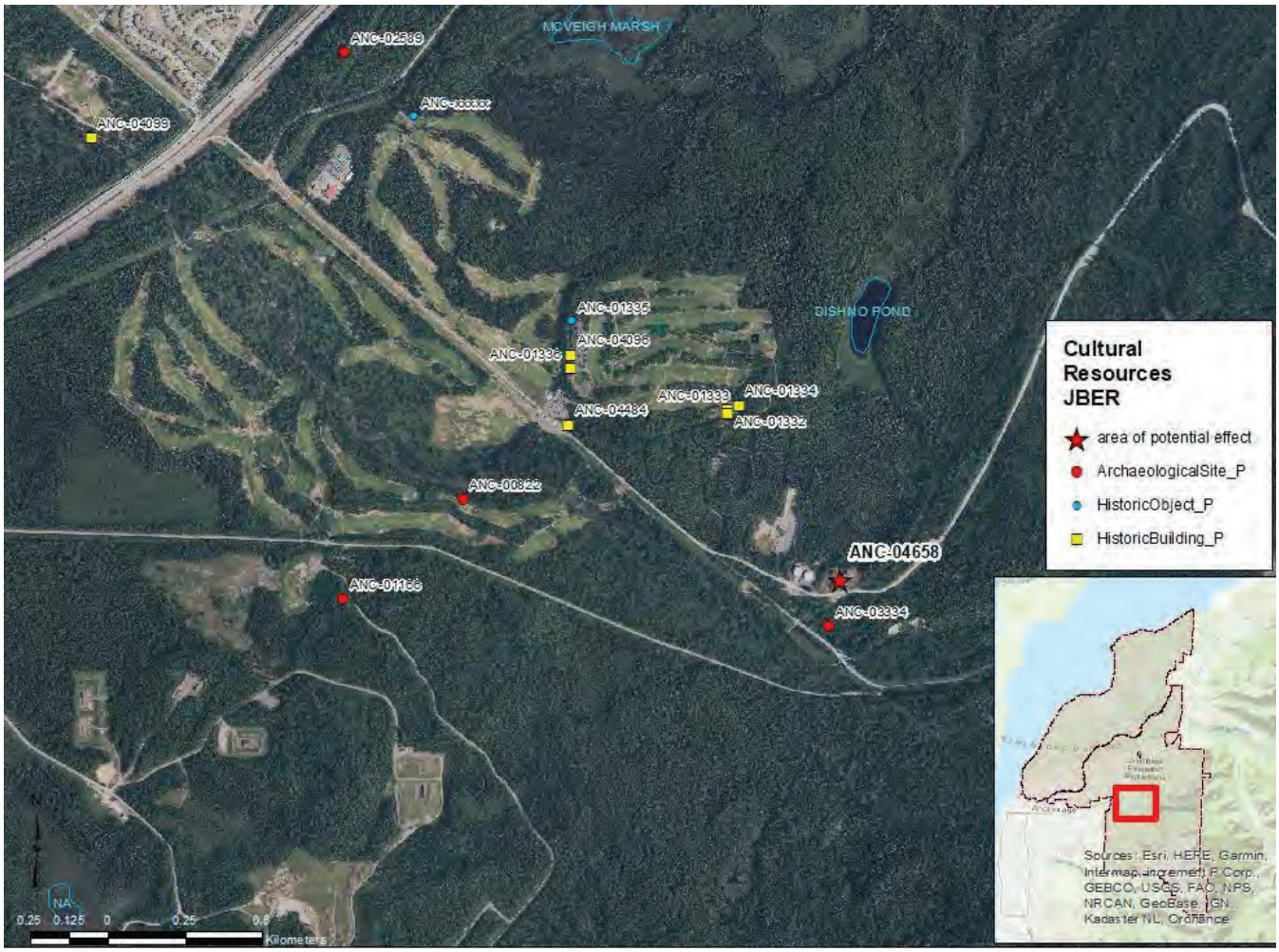

Figure 1. *Water treatment plant location and cultural resources discussed here.*

3. Historic Properties and the Area of Potential Effect: In 2005, the Colorado State University Center for Environmental Management of Military Lands and U.S. Army Garrison Alaska completed an archeological survey of the proposed project area as well as a literature review of cultural resources in the area.[1] The survey consisted of a pedestrian survey and judgmental subsurface testing that found no cultural resources within the direct or indirect APE. The area of potential effect for the construction of the new Water Treatment Plant was surveyed by Cultural Resource Consultants in 2022[2] using pedestrian survey and judgmental subsurface testing. No cultural resources were found that were eligible for the National Register of Historic Places.

There are seven cultural resources within ½-mile of the area of potential effect. Three of the resources were buildings associated with Moose Run Gold Course that have been demolished. One is a pump house (ANC-04484) for the irrigation system at the golf course that has been found not eligible. The

[1] Julie Raymond-Yakoubian and Aaron Robertson. 2006. Annual Report: Archaeological Survey and Evaluation, Fort Richardson and Fort Wainwright, 2005. Prepared by Center for Environmental management of Military Lands, Colorado State University. Prepared for Natural Resources Branch, US Army Alaska, Fort Richardson, pp. 57-58, 63-64.

[2] Aubrey L. Morrison, Hollis A. Reddington, and Michael R. Yarborough. 2022. Cultural Resource Survey for the Proposed Joint Base Elmendorf-Richardson (JBER) Water Treatment Plant. Cultural Resource Consultants LLC, prepared for Solstice Alaska Consulting Inc., Anchorage, Alaska.

final resource was the location of a boulder spall tool (ANC-03334) that eroded from the banks of Ship Creek. Two test pits were excavated in the immediate vicinity, but no additional cultural deposits were encountered.[3] The stone tool was collected and is accessioned at the University of Alaska Museum of the North. The site was not evaluated for the National Register and is, therefore, treated as eligible. Dgheyaytnu or Dgheyay Leht ("Stickleback Creek", "Where Stickleback Run", or Ship Creek) is immediately south of the area of potential effect. This river is a reliable source of salmon and stickleback. As a result, there were Dene houses (the settlement called Dgheyay Kaq') along the northern bank closer to the river outlet as recently as the 1930s. Deshtnu Bena ("Spruce Hen Spring Lake" or Dishno Pond) is north of the area of potential effect. Little is known about the role of this pond in the past (for subsistence, navigation, religious, or other reasons).

Table 1. Reported cultural resources within ½-mile of the area of potential effect.

AHRS # ANC-	Description or Site Name	NRHP status	Affected by undertaking?
01332	General Storage – Moose Run Golf Course	No (demo'd)	No
01333	General Storage – Moose Run Golf Course	No (demo'd)	No
01334	Moose Run Golf Course Quonset Hut	No (demo'd)	No
03334	Prehistoric Site – Fort Richardson	Unevaluated	No
04484	Irrigation Pump Building	No	No
n/a	Deshtnu Bena (Dishno Pond)	Unevaluated	No
n/a	Dgheyaytnu, Dgheyay Leht (Ship Creek)	Unevaluated	No

4. Determination of eligibility for the ER Cold ar ater Treatment Plant uilding 28008 ANC-04 58 . The Water Treatment Plant was constructed in the late 1940s with an addition in 1957. It has a T-shape design with four levels. Although it was built in two phases, they have near-identical construction materials and detailing, indicating that they were designed to be have a cohesive appearance and built within a short period. It has boxy massing with flat roofs. The foundation is concrete slab on grade. The walls of the northeast and southwest wings are concrete at the level of the basins but the remainder is steel frame with insulated metal panels. The detailing and organization of the windows, entrances, and projections are consistent with the International Style of architecture, with foreshadowing of New Formalism. The JBER Cold War Water Treatment Plant (Building 28008, ANC-04658) retains all seven aspects of integrity and is ***recommended eligible for the National Register under Criterion C***. According to the attached evaluation, both the interior and exterior of the building contribute to this significance. We request your concurrence with this determination of eligibility.

5. Assessment of Effect: Provided you agree with the determinations of eligibility above, JBER recommends that the ***demolition of the JBER Cold War Water Treatment Plant (Building 28008, ANC-04658) will result in adverse effects to historic properties***. We request your concurrence with this assessment of effect. We propose to enter into a Memorandum of Agreement and to work with you and Doyon Utilities to complete our Section 106 requirements under the National Historic Preservation Act per 36 CFR 800.5.

[3] Kate S. Yeske and Edmund P Gaines. 2010. Letter Report: Various Projects on Fort Richardson. Prepared by Center for Environmental Management of Military Lands, Colorado State University. Prepared for Natural Resources Branch, US Army Alaska, Fort Richardson.

JBER has also consulted with the Federally Recognized Tribes (Native Village of Eklutna Traditional Council, Native Village of Tyonek, Knik Tribal Council, and the Chickaloon Village Traditional Council), and the Anchorage Historic Preservation Commission. A separate notification has been sent to the Advisory Council on Historic Preservation. If you have any questions, please contact Margan Grover, 673 CES/CEIEC, at 907-384-3467 and margan.grover@us.af.mil.

DYE-PORTO.JEANNE.L.1246003641

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JEANNE L. DYE-PORTO, GS-14, DAF
Chief, Installation Management Flight

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS, 673D AIR BASE WING
JOINT BASE ELMENDORF-RICHARDSON, ALASKA

MEMORANDUM FOR ADVISORY COUNCIL ON HISTORIC PRESERVATION
FEDERAL PROPERTY MANAGEMENT SECTION
ATTENTION: KATHERINE KERR, PROGRAM ANALYST

FROM: 673 CES/CEIEC
6326 Arctic Warrior Drive
JBER AK 99506-3240

Subject: Determination of Eligibility for the Joint Base Elmendorf-Richardson Cold War Water Treatment Plant (ANC-04658)

1. Purpose and Need: The Joint Base Elmendorf-Richardson (JBER) Environmental Conservation Section (673d CES/CEIEC) is coordinating the cultural resources consultation for construction of a new water treatment plant and demolition of the existing plant. The new plant replaces the existing Doyon Utilities (DU)-owned and operated water treatment plant that processes water flowing from Ship Creek Dam. The purpose of this letter is to notify you that JBER has determined that the demolition of the existing Water Treatment Plant (Building 28008, ANC-04658) will result in adverse effects to historic properties, in accordance with 36 CFR 800.5.

2. Project Description and Area of Potential Effect: The proposed project would construct a new water treatment plant along Ship Creek and adjacent to the existing water treatment plant (Seward Meridian, Township, 13N, Range 2W, Section 9, Anchorage quadrangle A-8; Figure 1). As JBER's water utility provider, DU would construct the project (DU Project No. 8257) and is responsible for environmental studies and permits. The proposed project's purpose is to build a water treatment plant that: supplies water at a quality that meets State and Federal drinking water standards, provides water at a quantity that fits JBER demands and authorized Ship Creek dam surface water rights, and is built before the current water treatment plant facility is closed. Its secondary purpose is to establish a simpler water treatment plant near the existing water treatment infrastructure that allows for the facility to be run by a single operator at any time of day. The proposed project is needed because the existing 1950s-era JBER water treatment plant facility is outdated and was built with materials that include lead-based paint, asbestos, and polychlorinated biphenyl-contaminated coatings that are in contact with treated drinking water. The U.S. Environmental Protection Agency has ordered the current water treatment plant facility to cease operations by October 1, 2023.

This notification addresses the demolition phase of the project (Water Treatment Plant, Building 28008, ANC-04658). The area of potential effect is the building footprint and the surrounding 15 meters. Figure 1 and Table 1 describe all known cultural resources within ½-mile of the direct area of potential effect in order to encompass any potential indirect effects.

A notification of the first phase of this undertaking was coordinated with the Alaska State Historic Preservation Officer (AKSHPO) and other interested parties on January 28, 2022. AKSHPO concurred on an assessment of no historic properties affected by the construction phase on February 11, 2022; however, Chickaloon Village Traditional Council (CVTC) requested that the area be re-examined for

cultural resources in a February 18, 2022, letter. JBER agreed and a work plan for the survey was submitted for review on April 15, 2022. The report for the new survey was submitted on September 21, 2022, which concluded that the construction of the new plant will still result in no historic properties affected. At this time, the AKSHPO and other parties have not responded. An Environmental Assessment will also be completed for this project.

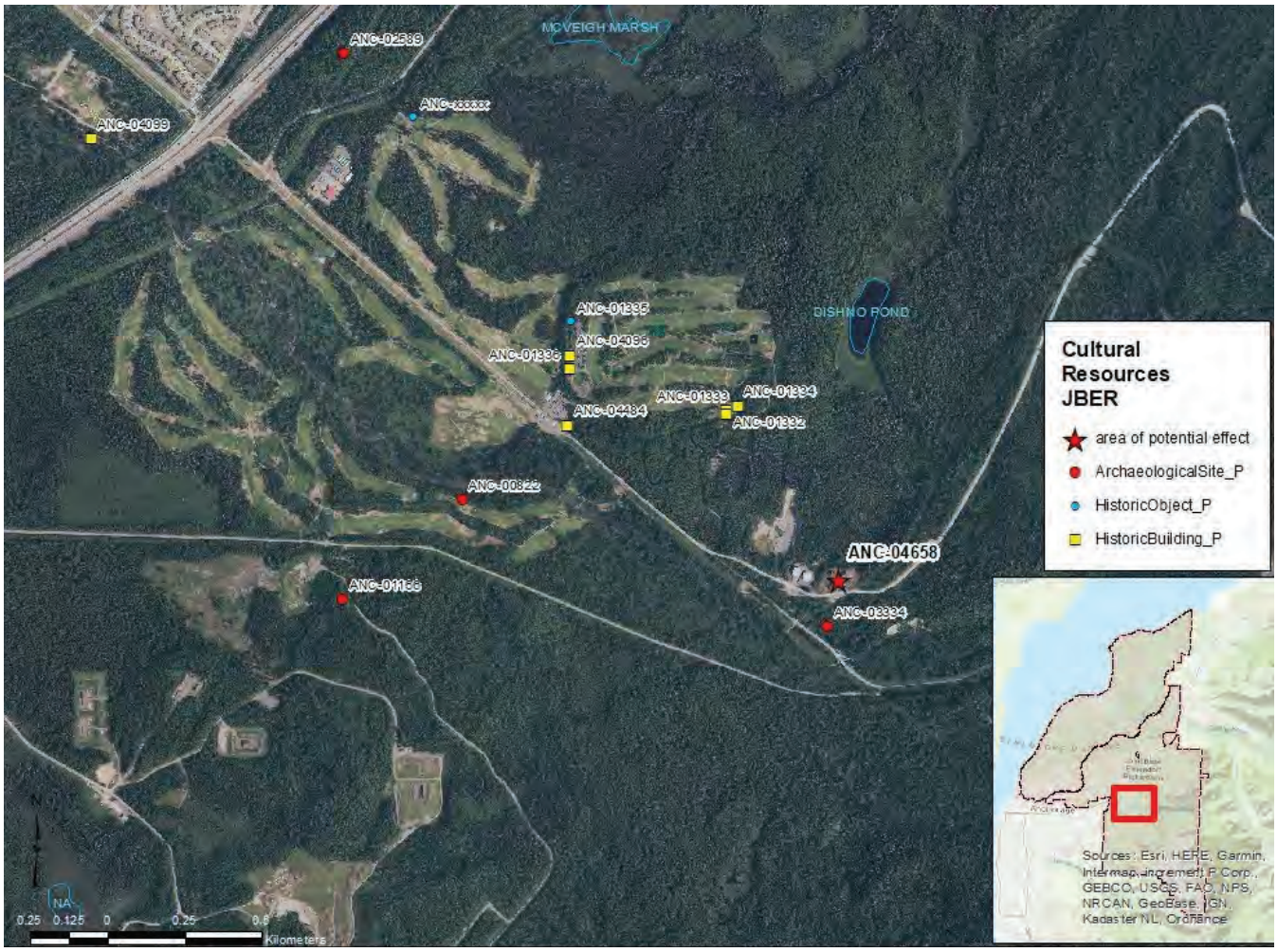

Figure 1. *Water treatment plant location and cultural resources discussed here.*

3. Historic Properties and the Area of Potential Effect: In 2005, the Colorado State University Center for Environmental Management of Military Lands and U.S. Army Garrison Alaska completed an archeological survey of the proposed project area as well as a literature review of cultural resources in the area.[1] The survey consisted of a pedestrian survey and judgmental subsurface testing that found no cultural resources within the direct or indirect APE. It did not include the existing water treatment plant. The area of potential effect for the construction of the new water treatment plant was surveyed by

[1] Julie Raymond-Yakoubian and Aaron Robertson. 2006. Annual Report: Archaeological Survey and Evaluation, Fort Richardson and Fort Wainwright, 2005. Prepared by Center for Environmental management of Military Lands, Colorado State University. Prepared for Natural Resources Branch, US Army Alaska, Fort Richardson, pp. 57-58, 63-64.

Cultural Resource Consultants in 2022[2] using pedestrian survey and judgmental subsurface testing. No cultural resources were found that were eligible for the National Register of Historic Places. Cultural Resource Consultants also completed the building evaluation (attached).

There are seven cultural resources within ½-mile of the area of potential effect. Three of the resources were buildings associated with Moose Run Gold Course that have been demolished. One is a pump house (ANC-04484) for the irrigation system at the golf course that has been found not eligible. The final resource was the location of a boulder spall tool (ANC-03334) that eroded from the banks of Ship Creek. Two test pits were excavated in the immediate vicinity, but no additional cultural deposits were encountered.[3] The stone tool was collected and is accessioned at the University of Alaska Museum of the North. The site was not evaluated for the National Register and is, therefore, treated as eligible. The archaeological survey confirmed that none of these resources would be affected by construction of the new plant. Dgheyaytnu or Dgheyay Leht ("Stickleback Creek", "Where Stickleback Run", or Ship Creek) is immediately south of the area of potential effect. This river is a reliable source of salmon and stickleback. As a result, there were Dene houses (the settlement called Dgheyay Kaq') along the northern bank closer to the river outlet as recently as the 1930s. Deshtnu Bena ("Spruce Hen Spring Lake" or Dishno Pond) is north of the area of potential effect. Little is known about the role of this pond in the past (for subsistence, navigation, religious, or other reasons). No evidence of these sites were found within the area of potential effect for construction of the new plant.

Table 1. Reported cultural resources within ½-mile of the area of potential effect.

AHRS # ANC-	Description or Site Name	NRHP status	Affected by undertaking?
01332	General Storage – Moose Run Golf Course	No (demo'd)	No
01333	General Storage – Moose Run Golf Course	No (demo'd)	No
01334	Moose Run Golf Course Quonset Hut	No (demo'd)	No
03334	Prehistoric Site – Fort Richardson	Unevaluated	No
04484	Irrigation Pump Building	No	No
n/a	Deshtnu Bena (Dishno Pond)	Unevaluated	No
n/a	Dgheyaytnu, Dgheyay Leht (Ship Creek)	Unevaluated	No

4. Determination of eligibility for the JBER Cold War Water Treatment Plant (Building 28008, ANC-04658). The Water Treatment Plant was constructed in the late 1940s with an addition in 1957. It has a T-shape design with four levels. Although it was built in two phases, they have near-identical construction materials and detailing, indicating that they were designed to be have a cohesive appearance and built within a short period. It has boxy massing with flat roofs. The foundation is concrete slab on grade. The walls of the northeast and southwest wings are concrete at the level of the basins but the remainder is steel frame with insulated metal panels. The detailing and organization of the windows, entrances, and projections are consistent with the International Style of architecture, with foreshadowing of New Formalism. The JBER Cold War Water Treatment Plant (Building 28008, ANC-

[2] Aubrey L. Morrison, Hollis A. Reddington, and Michael R. Yarborough. 2022. Cultural Resource Survey for the Proposed Joint Base Elmendorf-Richardson (JBER) Water Treatment Plant. Cultural Resource Consultants LLC, prepared for Solstice Alaska Consulting Inc., Anchorage, Alaska.

[3] Kate S. Yeske and Edmund P Gaines. 2010. Letter Report: Various Projects on Fort Richardson. Prepared by Center for Environmental Management of Military Lands, Colorado State University. Prepared for Natural Resources Branch, US Army Alaska, Fort Richardson.

04658) retains all seven aspects of integrity and is *recommended eligible for the National Register under Criterion C*. According to the attached evaluation, both the interior and exterior of the building contribute to this significance. JBER has requested AKSHPO concurrence with this determination of eligibility.

5. Assessment of Effect: Provided AKSHPO agrees with the determinations of eligibility above, JBER recommends that the *demolition of the JBER Cold War Water Treatment Plant (Building 28008, ANC-04658) will result in adverse effects to historic properties*. We have requested AKSHPO concurrence with this assessment of effect. We propose to enter into a Memorandum of Agreement and to work with AKSHPO and Doyon Utilities to complete our Section 106 requirements under the National Historic Preservation Act per 36 CFR 800.5.

JBER has also consulted with the Federally Recognized Tribes (Native Village of Eklutna Traditional Council, Native Village of Tyonek, Knik Tribal Council, and the Chickaloon Village Traditional Council), and the Anchorage Historic Preservation Commission. A separate notification has been sent to the AKSHPO. If you have any questions, please contact Margan Grover, 673 CES/CEIEC, at 907-384-3467 and margan.grover@us.af.mil.

JEANNE L. DYE-PORTO, GS-14, DAF
Chief, Installation Management Flight

-----Original Message-----
From: Hellmich, Amy S (DNR) <amy.hellmich@alaska.gov>
Sent: Friday, October 28, 2022 2:24 PM
To: GROVER, MARGAN A GS-12 USAF PACAF 673 CES/CEIEC <margan.grover@us.af.mil>; DNR, Parks OHA Review Compliance (DNR sponsored) <oha.revcomp@alaska.gov>
Subject: [Non-DoD Source] RE: Cultural resource survey report - Water Treatment Plant, JBER

Hello Margan,

I apologize for the delayed response. I accidently marked the review as complete after logging the report.

Following our review of the documentation provided, we continue to concur with the finding of No Historic Properties Affected for the direct APE and No Historic Properties Adversely Affected for the indirect APE. Please note that our office may need to re-evaluate our concurrence if changes are made to the project's scope or design.

Should unidentified historical or 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. Please note that some resources can be deeply buried or underwater, and that fossils are considered cultural resources subject to the Alaska Historic Preservation Act.

This email serves as our office's official correspondence for the purposes of Section 106. Thank you for the opportunity to review and comment. Please contact me at (907) 269-8724 or amy.hellmich@alaska.gov if you have any questions or we can be of further assistance.

Best regards,
Amy Hellmich

Amy Hellmich
Alaska State Historic Preservation Office Office of History and Archaeology
Direct: (907) 269-8724
amy.hellmich@alaska.gov
Teleworking - Email is the best method of communication.

-----Original Message-----
From: GROVER, MARGAN A GS-12 USAF PACAF 673 CES/CEIEC <margan.grover@us.af.mil>
Sent: Friday, October 28, 2022 13:20

To: DNR, Parks OHA Review Compliance (DNR sponsored) <oha.revcomp@alaska.gov>; Hellmich, Amy S (DNR) <amy.hellmich@alaska.gov>
Subject: RE: Cultural resource survey report - Water Treatment Plant, JBER

Hi Amy
I just wanted to check with you to see if SHPO has any comments on the report and assessment of effect referenced below. You had previously agreed that there would be no historic properties affected, but we agreed to perform another survey. Based on the results of the survey, we did not change the assessment of effect for construction of the new water treatment plant. It has been 37 days since you confirmed you received the letter and report.
Thank you

Margan Grover
Cultural Resource Manager
673 CES/CEIEC Environmental Conservation Joint Base Elmendorf-Richardson, Alaska
Office: 907-384-3467 (DSN: 317-384-3467)
Mobile: 907-244-9188
I live and work on Dena'ina land.

-----Original Message-----
From: DNR, Parks OHA Review Compliance (DNR sponsored) <oha.revcomp@alaska.gov>
Sent: Wednesday, September 21, 2022 3:00 PM
To: GROVER, MARGAN A GS-12 USAF PACAF 673 CES/CEIEC <margan.grover@us.af.mil>; Hellmich, Amy S (DNR) <amy.hellmich@alaska.gov>
Subject: [Non-DoD Source] RE: Cultural resource survey report - Water Treatment Plant, JBER

Hello Margan,

The Office of History and Archaeology/Alaska State Historic Preservation Office received your documentation and its review has been assigned to myself as ID No: 2022-01117. Our office has 30 calendar days after receipt to complete our review and may contact you if we require additional information.

Amy Hellmich
Alaska State Historic Preservation Office Office of History and Archaeology
Direct: (907) 269-8724
amy.hellmich@alaska.gov
Teleworking - Email is the best method of communication.

-----Original Message-----
From: GROVER, MARGAN A GS-12 USAF PACAF 673 CES/CEIEC <margan.grover@us.af.mil>
Sent: Thursday, September 15, 2022 12:35
To: DNR, Parks OHA Review Compliance (DNR sponsored) <oha.revcomp@alaska.gov>
Cc: Richard Martin <rmartin@kniktribe.org>; Angie Wade <alwade@chickaloon-nsn.gov>; Bunnell Kristine <kristine.bunnell@anchorageak.gov>; Marc Lamoreaux <marcl@eklutna.org>
Subject: Cultural resource survey report - Water Treatment Plant, JBER

THE STATE of ALASKA
GOVERNOR MIKE DUNLEAVY

Department of Natural Resources
DIVISION OF PARKS AND OUTDOOR RECREATION
Office of History & Archaeology

550 West 7th Avenue, Suite 1310
Anchorage, AK 99501-3561
907-269-8700
http://dnr.alaska.gov/parks/oha

November 10, 2022

File No.: 3130-1R AF / 2022-01235

Jeanne L. Dye-Porto
Chief, Installation Management Flight
673 CES/CEIEC
6326 Arctic Warrior Drive
Joint Base Elmendorf-Richardson, AK

Subject: Demolition of Water Treatment Plant, Building 28008 (ANC-04658), JBER

Dear Ms. Dye-Porto:

The Alaska State Historic Preservation Office (AK SHPO) received your correspondence and accompanying report titled *Determination of Eligibility for the Joint Base Elmendorf Cold War Era Water Treatment Plant (ANC-04658)* on October 25, 2022. We also received documentation of ACHP and tribal notification.

We have reviewed the documentation in accordance with 36 CFR § 60.4 and concur that the JBER Cold War Era Water Treatment Plant (ANC-04658) is eligible for the National Register of Historic Places under Criterion C. Furthermore, pursuant Section 106 of the National Historic Preservation Act, we concur that the demolition of said Water Treatment Plant will result in an adverse effect to the historic property.

We look forward to continued consultation with USAF to resolve the adverse effect through execution of a Memorandum of Agreement and encourage the consideration of both the form and function of the building when proposing mitigation.

Thank you for the opportunity to review and comment. Please contact Amy Hellmich at (907)269-8724 or amy.hellmich@alaska.gov if you have any questions or if we can be of further assistance.

Sincerely,

Judith E. Bittner
State Historic Preservation Officer

JEB:ash

November 8, 2022

Mr. Margan A. Grover
Cultural Resource Manager
673 CES/CEIEC
724 Quartermaster Road
Joint Base Elmendorf Richardson, AK 99505

Ref: *Demolition of Ship Creek Water Treatment Plant on Fort Richardson by Joint Base Elmendorf-Richardson, Alaska*
ACHP Project Number: 018887

Dear Mr. Grover:

On October 25, 2022, the Advisory Council on Historic Preservation (ACHP) received your notification and supporting documentation regarding the potential adverse effects of the referenced undertaking on a property or properties listed or eligible for listing in the National Register of Historic Places. Based upon the information you provided, we have concluded that Appendix A, *Criteria for Council Involvement in Reviewing Individual Section 106 Cases*, of our regulations, "Protection of Historic Properties" (36 CFR Part 800) implementing Section 106 of the National Historic Preservation Act, does not apply to this undertaking. Accordingly, we do not believe our participation in the consultation to resolve adverse effects is needed.

However, if we receive a request for participation from the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer, affected Indian tribe, a consulting party, or other party, we may reconsider this decision. Should the undertaking's circumstances change, consulting parties cannot come to consensus, or you need further advisory assistance to conclude the consultation process, please contact us.

Pursuant to Section 800.6(b)(1)(iv), you will need to file the final Section 106 agreement document (Agreement), developed in consultation with the Alaska SHPO and any other consulting parties, and related documentation with the ACHP at the conclusion of the consultation process. The filing of the Agreement and supporting documentation with the ACHP is required in order to complete the requirements of Section 106 of the National Historic Preservation Act.

Thank you for providing us with your notification of adverse effect. If you have any questions or require our further assistance, please contact Katharine Kerr at (202) 517-0216 or by e-mail at kkerr@achp.gov

and reference the ACHP Project Number above.

Sincerely,

Artisha Thompson
Historic Preservation Technician
Office of Federal Agency Programs

MEMORANDUM OF AGREEMENT (MOA)
BETWEEN JOINT BASE ELMENDORF-RICHARDSON
AND THE
ALASKA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE DEMOLITION OF THE
JOINT BASE ELMENDORF-RICHARDSON WATER TREATMENT PLANT
(ANC-04658, Building 28002)
AT
JOINT BASE ELMENDORF-RICHARDSON (JBER)

WHEREAS, the United States Air Force (USAF) at Joint Base Elmendorf-Richardson (JBER) has determined that the demolition/disposal of the Joint Base Elmendorf-Richardson Water Treatment Plant (ANC-04658, Building 28002), constitutes an Undertaking subject to Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (54 U.S.C. 306108), and the implementing regulations 36 CFR Part 800; and

WHEREAS, the Joint Base Elmendorf-Richardson Water Treatment Plant (ANC-04658) is owned and operated on JBER by Doyon Utilities, LLC; and

WHEREAS, the undertaking consists of demolition of the Joint Base Elmendorf-Richardson Water Treatment Plant (ANC-04658), including building foundation; proper disposal of construction debris off-site; disconnection and abandonment in place of existing building utilities; backfilling as required; applying topsoil and grass seed to all disturbed area to match surrounding vegetation; and the construction of a new water treatment plant nearby; and

WHEREAS, JBER has defined the undertaking's area of potential effects (APE) as the building demolition site, which includes the building footprint, connected walkways and the surrounding 20 meters, the site of the new water treatment plant, and nearby staging areas and

WHEREAS, JBER has determined that the Joint Base Elmendorf-Richardson Water Treatment Plant (ANC-04658) is eligible for listing in the National Register of Historic Places (NRHP) and the Alaska State Historic Preservation Officer (SHPO) has concurred; and

WHEREAS, JBER has consulted with the SHPO pursuant to 36 CFR Part 800 regulations implementing Section 106 of the NHPA as amended and determined that this undertaking will have an adverse effect on the Joint Base Elmendorf-Richardson Water Treatment Plant (ANC-04658); and

WHEREAS, JBER has notified the Advisory Council on Historic Preservation (Council) regarding the adverse effect and the Council has declined to participate in the consultation pursuant to 36 CFR Part 800.6(a)(1)(iii); and

WHEREAS, JBER invited the Native Village of Eklutna, Chickaloon Native Village, and Knik Tribal Council to participate in consultation; and

WHEREAS, JBER has consulted with the Historic American Building Survey (HABS) / Historic American Engineering Record (HAER) / Historic American Landscape Survey (HALS) Coordinator for the Alaska Regional Office of the National Park Service (NPS) in accordance with 36 CFR § 800.2(c) regarding the effects of the undertaking on historic properties and has invited them to sign this MOA as a Concurring Party per 36 CFR Part 800.6(c)(3); and

WHEREAS, JBER has consulted with Doyon Utilities, LLC in accordance with 36 CFR § 800.2(c)(4); and invited them to participate in this MOA as an Invited Signatory per 36 CFR § 800.6(c)(2); and

NOW, THEREFORE, JBER and SHPO agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effects of the undertaking on historic properties.

STIPULATIONS

JBER shall ensure that the following stipulations are carried out to capture, document and share the cultural and historic significance of the Joint Base Elmendorf-Richardson Water Treatment Plant (ANC-04658):

I. APPLICABILITY

The terms of this MOA apply only to the demolition and/or disposal of the Joint Base Elmendorf-Richardson Water Treatment Plant (ANC-04658), or as modified in accordance with Section VIII.B.

II. MITIGATION

The following mitigation must be finalized by Doyon Utilities, LLC, and accepted by JBER, NPS and SHPO prior to the demolition and disposal of the building.

A. Architectural Recordation: shall generally follow HISTORIC AMERICAN BUILDING SURVEY (HABS) Documentation Level III for drawings and written data, as described below. HABS/HAER/HALS numbers can be obtained through either the Heritage Documentation Programs Office in Washington DC, or through the NPS Alaska Regional Office. Digital (CAD) drawing borders can also be provided upon request at that time.

1. Drawings: CAD drawings will be produced from measurements verified on site prior to demolition. These may include annotated construction drawings, if such drawings are on file at JBER.
    a. Drawing sheet/s will be developed on HABS borders with title block fields filled out in accordance with the provided HABS number, name, and address. The borders are provided by the NPS upon request.
    b. Basic location information in the form of a State, Region, and Base map should be included on the primary sheet.
2. Photographs: In lieu of HABS large format photography, photographic recordation shall generally follow the National Park Service's National Register of Historic Places Photo Policy Factsheet updated 5/15/2013. The photos will be incorporated into the Written Data [II (A) (3)] as figure pages with captions. Photographs shall consist of the following, as a minimum:
    a. Six megapixel or greater digital SLR camera,
    b. Photographs shall show the building in its immediate setting,
    c. Photographs of each elevation and noteworthy exterior details, and
    d. Photographs of selected interior rooms and noteworthy interior details.
3. Written Data: A short format written history report shall be completed following HABS standards. A template of this will be provided by the NPS upon request. The report may be weighted towards secondary sources and field observation. The digital photographs in lieu of large format photography should be included as figure pages in this report, with captions that state the view direction and general description.

B. Alaska Heritage Resource Survey (AHRS) Building Inventory Form: an up-to-date AHRS Building Inventory Form shall be completed for the building after its demolition.

The following mitigation must be carried out by Doyon Utilities, LLC, and accepted by JBER, but may be completed after the demolition and disposal of the building.

C. Interpretive Kiosk/Structure and Display: An outdoor structure will be erected at the new water treatment plant or another appropriate location on JBER determined through consultation with consulting parties. The structure will house three interpretive panels that discuss the history of the water treatment plant, the relationship between Ship Creek, Ship Creek dam, and the plant, how it supported JBER's Cold War activities, and the building's significance as an example of International Style modern architecture.

1. Interpretive panels:
    a. Shall be consistent with industry standards (22in x 34in and comprised of half-inch thick high-pressure laminate), and
    b. Shall be designed by a graphic design and interpretation professional in collaboration with a historian meeting the Secretary of the Interior's professional qualification standards for history, and
    c. Shall incorporate historical documentation of the water treatment plant at JBER, including photographs housed at the JBER History Office and other archives.
2. The interpretive display structure and signage shall be installed within seven years of the execution of this MOA.

III. SUBMITTALS

A. Doyon Utilities, LLC, shall finalize the following documentation described in Stipulations II (A) and II (B) prior to demolition and disposal of the building. JBER shall ensure that a draft of the documentation will be provided to SHPO and NPS for review and comment prior in accordance with the following.

1. One digital copy of the required architectural recordation and AHRS building form shall be submitted to SHPO and NPS no later than two years after signing of the MOA. Draft mitigation may be submitted separately for review and approval in advance of the AHRS building form.
2. Upon receipt of the architectural recordation and AHRS building form, SHPO and NPS shall provide JBER with review comments within thirty (30) calendar days. These comments will be provided to all parties to this agreement.
3. A final digital submittal of the architectural recordation and AHRS building form, taking into consideration the SHPO and NPS comments, shall be provided to SHPO, JBER, and consulting parties no later than thirty (30) calendar days after receipt of review comments.
4. Upon SHPO and NPS's acceptance of the final submittal, one digital copy of the architectural recordation shall be transmitted to the National Park Service Regional Office.

B. Doyon Utilities, LLC, may finalize the following documentation described in Stipulation II (C) after demolition and disposal of the building. JBER shall ensure that a draft copy of the interpretive panel content is provided to SHPO for review and comment no more than seven years from the execution of this agreement.

1. One digital copy of the draft interpretive panel content shall be submitted to SHPO, JBER, and other consulting parties for one round of review and comment.

2. Upon receipt of the draft content, SHPO shall provide JBER with review comments within thirty (30) calendar days.
3. A final digital submittal of the interpretive panel content shall be submitted to SHPO, JBER, and consulting parties within 120 calendar days after receipt of review comments.

IV. RECORDS DISTRIBUTION

A. One digital copy of the HABS documentation and AHRS building form shall be made a part of the JBER permanent record for the Joint Base Elmendorf-Richardson Water Treatment Plant (ANC-04658). The HABS documentation will be maintained in the Air Force project files on JBER.

B. One printed and one digital copy of the HABS documentation and AHRS building form shall be provided to the SHPO for archive purposes within State of Alaska Heritage Resources Survey.

C. Transmittal of Final HABS Documentation Set to the Library of Congress. One archivally printed copy and one digital copy of the complete HABS documentation set shall be provided to NPS Regional Office staff who can facilitate shipment of HABS documentation to the Library of Congress in Washington, D.C. Archivally printed and digital copies of the HABS documentation package shall follow the transmittal guidelines (updated November 2021) found here: https://www.nps.gov/hdp/standards/Transmittal.pdf.

D. Copies of the HABS documentation will be provided to Doyon Utilities, LLC upon request.

V. PERSONNEL

A. Each Party to this agreement is responsible for all costs of its personnel, including pay and benefits, support, and travel. Each party is responsible for supervision and management of its personnel.

B. JBER shall ensure that persons completing the architectural recordation meet the Secretary of the Interior's Professional Qualifications Standards for Architectural History, Architecture, or Historic Architecture.

VI. GENERAL PROVISIONS

A. POINTS OF CONTACT (POC): the following points of contact will be used by the Parties to communicate in the implementation of this MOA. Each Party may change its point of contact upon reasonable notice to the other Party.

1. For JBER-
    a. Primary POC: Cultural Resource Manager, 907-384-3467, margan.grover@us.af.mil or elizabeth.ortiz.10@us.af.mil
    b. Alternate POC: Environmental Conservation Chief, 907-384-6224, 673ces.ceiec.conservation@us.af.mil
2. For the SHPO-
    a. Primary POC: Review and Compliance Coordinator, 907-269-8720, oha.revcomp@alaska.gov
    b. Alternate POC: SHPO Office, 907-269-8700
3. For NPS-
    a. Primary POC: John Wachtel, AKRO Historical Architect; HABS/HAER/HALS Regional Coordinator, John_Wachtel@nps.gov, 907-644-3459; 240 West 5th Avenue; Anchorage, AK 99501
4. For Doyon Utilities, LLC-
    a. Primary POC: Kathleen Hook, Director of Environmental Affairs, khook@doyonutilities.com, 907-455-1500; 714 Fourth Avenue, Suite 100; Fairbanks, AK 99701
    b. Alternate POC: Tim Jones, Vice President of Administration, tjones@doyonutilities.com, 907-455-1500; 714 Fourth Avenue, Suite 100; Fairbanks, AK 99701

B. CORRESPONDENCE: Email is the preferred method for all correspondence to be sent and notices to be given pursuant to the MOA. It may also be sent using the following addresses:

1. If to JBER, to 673rd CES/CEIEC, 730 Quartermaster Road, JBER AK 99505; and
2. If to the SHPO, to Alaska State Historic Preservation Office, 550 West 7th Avenue Suite 1310, Anchorage AK 99501
3. If to Doyon Utilities, LLC 714 Fourth Avenue, Suite 100; Fairbanks, AK 99701
4. If to NPS, to National Park Service Alaska Regional Office, HABS/HAER/HALS Regional Coordinator, 240 W 5th Avenue, Anchorage, AK, 99501

VII. INADVERTENT DISCOVERIES

In the event of accidental or unanticipated discovery of human remains or archaeological resources during construction, JBER shall immediately halt activities in the area of the discovery and implement the Standard Operating Procedures for Discoveries of Archaeological Resources and Native American Graves Protection & Repatriation Act Cultural Items (Section 7.4 in the Joint Base Elmendorf-Richardson Integrated Cultural Resources Management Plan, 2017 updated 2020).

VIII. AGREEMENT AND ADMINISTRATION

A. REVIEW OF AGREEMENT: This MOA will be reviewed no less often than mid-point on or around the anniversary of its effective date in its entirety.

B. MODIFICATION OF AGREEMENT: This agreement can be revised if changing conditions or circumstances warrant changes to ensure the terms, provision, and intent are current. This MOA may only be modified by the written agreement of the Signatories, duly signed by the authorizing representatives.

C. DISPUTES: Should any signatory or concurring party to this MOA object at any time to any actions proposed or the manner in which the terms of this MOA are implemented, JBER shall consult with such party to resolve the objection. If JBER determines that such objection cannot be resolved, JBER will:
   1. Forward all documentation relevant to the dispute, including JBER's proposed resolution, to the ACHP. The ACHP shall provide JBER with its advice on the resolution of the objection within thirty (30) calendar days of receiving adequate documentation. Prior to reaching a final decision on the dispute, JBER shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, signatories, and concurring parties, and provide them with a copy of this written response. JBER will then proceed according to its final decision.
   2. If the ACHP does not provide its advice regarding the dispute within the thirty (30) calendar day time period, JBER may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, JBER shall prepare a written response that takes into account any timely comments regarding the dispute from the signatories and concurring parties to the MOA, and provide them and the ACHP with a copy of such written response.
   3. JBER's responsibility to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute remain unchanged.

D. TERMINATION OF AGREEMENT: If any signatory to this MOA determines that its terms will not or cannot be carried out, that party shall immediately consult with the other signatories to attempt to develop an amendment per Stipulation VIII, above. If within thirty (30) days (or another time period agreed to by all signatories) an amendment cannot be reached, any signatory may terminate the MOA upon written notification to the other signatories. Once the MOA is terminated and prior to work continuing on the undertaking, JBER must either (a) execute an MOA pursuant to 36 CFR § 800.6 or (b) request, take into account, and respond to the comments of the Parties and ACHP under 36 CFR § 800.7.

E. TRANSFERABILITY: This Agreement is not transferable except with the written consent of the Parties.

F. ANTI-DEFICIENCY ACT: All requirements set forth in this MOA requiring the expenditure of JBER funds are expressly subject to the availability of appropriations and the requirements of the Anti-Deficiency Act (31 U.S.C. Section 1341). No obligations undertaken by JBER under the terms of the MOA will require or be interpreted to require a commitment to expend funds not obligated or appropriated for a particular purpose.

1. If JBER cannot perform an obligation set forth in the MOA due to the unavailability of funds, the Signatories to this MOA intend the remainder of the agreement to be executed.
2. In the event that any obligation under the MOA cannot be performed due to the unavailability of funds, JBER agrees to utilize its best efforts to renegotiate the provisions and may require that the parties initiate consultation to develop an amendment to this MOA when appropriate.

G. ENTIRE AGREEMENT: It is expressly understood and agreed that this MOA embodies the entire agreement between the Signatories regarding the MOA's subject matter.

H. EFFECTIVE DATE: This MOA takes effect beginning on the day after the last Signatory signs.

I. EXPIRATION DATE: This MOA will expire if its terms are not carried out within nine years from the date of its execution. Prior to such time, Signatories

may consult to reconsider the terms of the MOA and amend or terminate it in accordance with Stipulations VIII.B and VIII.D above.

J. SIGNATURES IN COUNTERPART: This agreement may be signed in counterparts, each of which shall be an original, and all of which shall constitute one and the same agreement.

EXECUTION AND IMPLEMENTATION of this Memorandum of Agreement by the Joint Base Elmendorf-Richardson and the Alaska State Historic Preservation Officer provides evidence that the Section 106 responsibilities for this undertaking have been satisfied.

MEMORANDUM OF AGREEMENT (MOA)
BETWEEN JOINT BASE ELMENDORF-RICHARDSON
AND THE
ALASKA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE DEMOLITION OF THE
JOINT BASE ELMENDORF-RICHARDSON WATER TREATMENT PLANT
(ANC-04658, Building 28002)
AT
JOINT BASE ELMENDORF-RICHARDSON (JBER)

SIGNATORIES:

WILSON.DAVID.JAMES.1243168658 Digitally signed by WILSON.DAVID.JAMES.1243168658 Date: 2023.04.06 15:45:29 -08'00'

David J. Wilson Date
Colonel, USAF
Commander, 673d Air Base Wing

MEMORANDUM OF AGREEMENT (MOA)
BETWEEN JOINT BASE ELMENDORF-RICHARDSON
AND THE
ALASKA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE DEMOLITION OF THE
JOINT BASE ELMENDORF-RICHARDSON WATER TREATMENT PLANT
(ANC-04658, Building 28002)
AT
JOINT BASE ELMENDORF-RICHARDSON (JBER)

SIGNATORIES:

Kathrine J Ryan 4/27/23

Ms. Judith E. Bittner Date
Alaska State Historic Preservation Officer
State of Alaska, Division of Natural Resources
Office of History and Archaeology

MEMORANDUM OF AGREEMENT (MOA)
BETWEEN JOINT BASE ELMENDORF-RICHARDSON
AND THE
ALASKA STATE HISTORIC PRESERVATION OFFICER
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JOINT BASE ELMENDORF-RICHARDSON WATER TREATMENT PLANT
(ANC-04658, Building 28002)
AT
JOINT BASE ELMENDORF-RICHARDSON (JBER)

INIVITED SIGNATORY:

Shayne Coiley

Digitally signed by Shayne Coiley
Date: 2023.04.12 10:06:07 -08'00'

Shayne Coiley Date
Senior Vice President
Doyon Utilities, LLC

MEMORANDUM OF AGREEMENT (MOA)
BETWEEN JOINT BASE ELMENDORF-RICHARDSON
AND THE
ALASKA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE DEMOLITION OF THE
JOINT BASE ELMENDORF-RICHARDSON WATER TREATMENT PLANT
(ANC-04658, Building 28002)
AT
JOINT BASE ELMENDORF-RICHARDSON (JBER)

CONCURRING PARTY:

[NO SIGNATURE REQUIRED]

_____

John Wachtel Date
Historical Architect
U.S. National Park Service
Alaska Regional Office

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS, JOINT BASE ELMENDORF-RICHARDSON
JOINT BASE ELMENDORF-RICHARDSON, ALASKA

3 April 2023

MEMORANDUM FOR: DISTRIBUTION OF G2G AS IDENTIFIED IN APPENDIX A TABLE 5

FROM: Joint Base Elmendorf-Richardson Vice Commander
10471 20th Street
JBER AK 99506

SUBJECT: Government-to-Government Consultation Offer and Draft Environmental Assessment Notice of Availability for Water Treatment Plant Project at Joint Base Elmendorf-Richardson

1. The United States Air Force (USAF) is preparing a draft Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) to evaluate potential environmental impacts associated with alternatives for providing clean drinking water at Joint Base Elmendorf-Richardson (JBER), Alaska, including the proposed construction of a new Water Treatment Plant (WTP) and removal and remediation of the existing WTP. As part of the NEPA process, government-to-government consultation with Federally Recognized Native American tribal entities is required per Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments*; Department of Defense Instruction 4710.02, *DoD Interactions with Federally Recognized Tribes*; and Department of the Air Force Instruction 90-2002, *Interactions with Federally Recognized Tribes*.

2. The draft EA and proposed Finding of No Significant Impact (FONSI) can be found under "Public Documents and Notices" online at: http://www.jber.jb.mil/Services-Resources/Environmental/NEPA.aspx The Public Notice period is anticipated to end on or about May 13, 2023.

3. I request any comments, concerns, or suggestions you may have, including concerns regarding the proposed project that may affect protected tribal rights or resources related to the proposal. If you have any comments, concerns, or suggestions, the USAF requests your response within 30 days of receiving this consultation request; however, a lack of response does not preclude your ability to consult or request government-to-government consultation on this project at any time. If you have any questions, please contact our Tribal Liaison, Ms. Joy Boston, at (907) 551-1598, or via email at joy.boston.2@us.af.mil. Thank you in advance for your assistance in this effort.

DEAN H. DENTER
Colonel, U.S. Army
Vice Commander

From:	Mendivil, Gary A (DEC)
To:	JOHNSON, CHARLENE C CIV USAF PACAF 673 CES/CEIC
Subject:	[Non-DoD Source] Comment from Alaska Department of Environmental Conservation
Date:	Friday, May 5, 2023 7:18:01 AM

Ms. Johnson-
Here is the only comment from the Alaska Department of Environmental Conservation:

The proposed project footprint will impact a known DEC contaminated site (File No: 2102.26.028, Hazard ID: 1239). The draft Environmental Assessment acknowledges site conditions and necessary regulatory compliance. Contaminated soil and groundwater generated by the construction will need to be characterized and disposed of, as appropriate. All work in known contaminated sites requires a work plan and DEC approval prior to the activities taking place.

Anchorage Water & Wastewater Utility

General Manager's Office

Emailed to: jber.pa@us.af.mil

May 9, 2023

JBER Public Affairs
10480 Sijan Avenue, Suite 123
JBER, AK 99506

Attention: Colonel Kevin Osborne

RE: Anchorage Water & Wastewater Utility Response to Draft Environmental Assessment (EA) for Management of Water Treatment at Joint Base Elmendorf-Richardson (JBER) and Proposed Finding of No Significant Impact (FONSI)

Dear Colonel Osborne:

The Anchorage Water & Wastewater Utility (AWWU) formally submits the following comments for the subject draft EA and the proposed FONSI contained in the draft EA. For the reasons set forth in more detail below, AWWU believes that Alternative 4 (obtaining water supply from AWWU) was incorrectly described, and, as a result, was not considered or selected as the preferred alternative.

AWWU is not aware of anyone from JBER consulting with AWWU during the development of the draft EA to get a correct understanding of AWWU's system capacity and exceptional water quality. It is important that AWWU correct the description of using AWWU water (Alternative 4) to show what appears to be an obvious advantage for an immediate and long-term reliable and sustainable water supply to JBER.

I. History of Consultations Between JBER and AWWU/MOA.

The Municipality of Anchorage (MOA) is a home rule city government, and JBER sits within the MOA's boundaries. AWWU is an MOA-owned enterprise entity. With respect to intergovernmental coordination consultations under Section 1.5, we have not been able to find any AWWU employee who was consulted by JBER during the draft EA preparation.

Instead, early in 2022, MOA and AWWU reached out to, and met with, the 673rd Civil Engineering Group (CEG) at JBER, and offered to provide water to meet JBER's immediate and long-term needs. The 673rd CEG staff we met with were interested, open and receptive to the idea, as it would allow for competition to buy water to the benefit of JBER and federal taxpayers. Such a result would address both JBER's short- and long-term water supply needs, and it would allow JBER and Doyon Utilities, LLC (DU) to focus on other outstanding water distribution and infrastructure needs.

AWWU invited ongoing discussions with the 673rd CEG to explore the possibilities. However, in July 2022, AWWU was told by the Deputy Director of the 673rd CEG that a decision had been made not to compete for JBER's bulk water needs and that no additional discussions with AWWU would occur on this subject.

AWWU has respected that decision, but must correct the public record in the draft EA regarding the alternative using AWWU's water supply. AWWU remains ready and willing to discuss providing water supply to }BER. We encourage }BER to reengage with AWWU on this topic in order to obtain accurate and complete information about Alternative 4, or any alternative to using AWWU's water supply, to meet JBER's needs in accordance with the selection standards outlined in the draft EA

II. Problems with the Development and Description of Alternative 4.

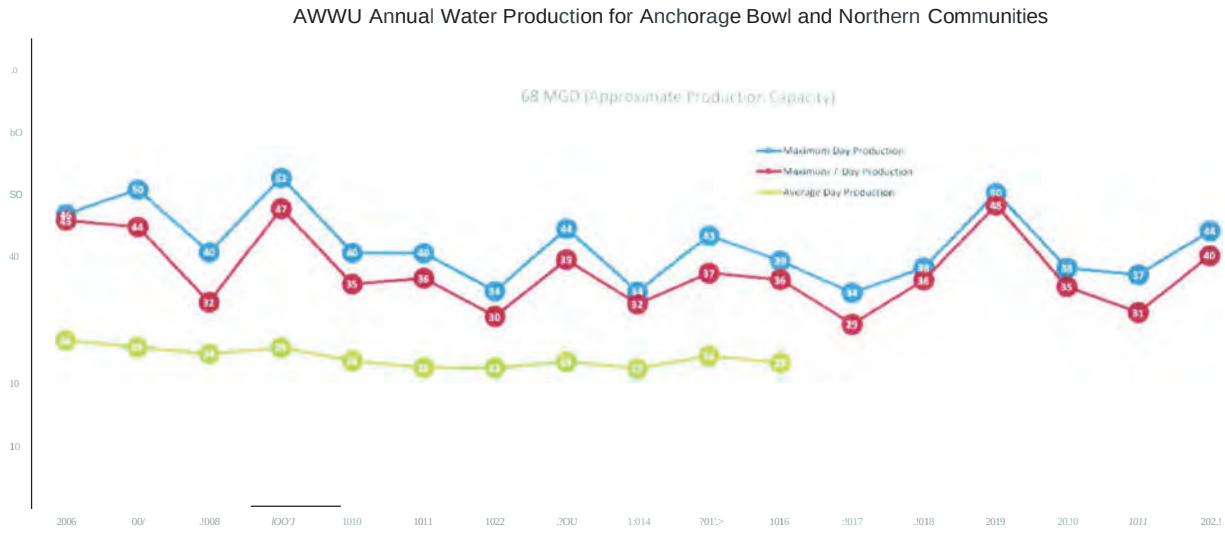
Because AWWU was not consulted on JBER's water needs when developing Alternative 4 in the draft EA, the analysis of Alternative 4 is incorrect and misdescribed in several respects.

First, the summary table in Section 2-3, shown on page 2-5, and as described in Section 2.5.3, is erroneous for Alternative 4. It inaccurately states that Alternative 4: only partially satisfies Selection Standard 1 on meeting average and peak demand at all times; that it does not meet Selection Standard 3 on the Environmental Protection Agency's (EPA) Polychlorinated Biphenyl (PCB) cleanup requirements; that it only partially satisfies Selection Standard 4 governing the ability to withstand outside threats; and, that it does not satisfy Selection Standard 6 on using existing drinking water infrastructure.

Each of these findings is incorrect. AWWU can satisfy all of the Selection Standards for Alternative 4 at a lower cost than other alternatives, and in a way that is more environmentally sound and socially beneficial than constructing and operating a new water treatment plant, draft EA Alternative 1.

A. Selection Standard 1 - Water Supply.

Contrary to what is stated in the draft EA, AWWU can reliably meet JBER's average and peak water demand today and for the long-term, without the need for any large infrastructure projects. The graph below is AWWU's water supply data demonstrating that AWWU currently can supply all of the average and peak demand of its existing and projected future customers, as well as all of JBER's average and peak demand, right now and into the future.



The draft EA does not explain or provide any data to support its conclusion in Section 2.5.3, that AWWU "may not be able to meet average and peak demand at all times" to completely satisfy Selection Standard 1.[1] Had JBER asked AWWU directly for our system-wide production capacity, as shown in the graph above, AWWU would have gladly supplied it. This information shows that the AWWU alternative can completely satisfy Selection Standard 1. JBER should make that correction in the draft EA.

B. Selection Standard 3 - Meeting EPA's PCB Cleanup Requirements,

AWWU has no PCB's or other toxics in its raw or finished water, and would provide safe drinking water that meets and exceeds all state and federal drinking water standards, providing an immediate benefit to JBER and all its on-base water consumers.

The reason given for finding that Alternative 4 did not satisfy Selection Standard 3 is the claimed failure of that Alternative to meet EPA PCB cleanup requirements related to JBER's existing water treatment plant. There is no reason why JBER's existing water treatment plant could not be demolished and removed under Alternative 4 in the same way as Alternative 1. Rather, the draft EA appears to presume that the existing water treatment plant, which is contaminated by PCBs, would remain in place under Alternative 4. This is not necessarily the case. In fact, using AWWU for JBER's water supply would allow JBER to demolish, or rehabilitate, the existing plant much earlier than is possible under Alternative 1. This is because AWWU can provide all of JBER's potable water needs immediately since

[1] The draft EA recites that JBER representatives contacted the MOA and the Port of Anchorage about AWWU's water supply capabilities. AWWU has not been able to locate the individuals atthe MOA or the Port of Anchorage who were contacted by JBER. In addition, it is unclear to AWWU why JBER would be contacting the Port of Anchorage (now named the Port of Alaska) or the MOA generally about AWWU's water supply capabilities.

all the infrastructure needed to do so already exists and is in-place.[2] Demolishing or rehabilitating the existing contaminated water treatment plant under Alternative 4 could and should have been included as an option to provide a more fair comparison to Alternative 1. Doing so would have allowed Alternative 4 to satisfy Selection Standard 3 in the same way as Alternative 1. Again, this should be remedied in a revision to the draft EA.

C. Selection Standard 4 - Withstanding Outside Threats.

The draft EA at Section 2.5.3 determined Alternative 4 only partially satisfies Selection Standard 4 on withstanding outside threats because neither the United States Air Force (USAF) nor DU has direct oversight and control over AWWU's security measures. AWWU, like most public utilities in the modern era, has significant and modern security measures protecting its infrastructure.

AWWU would welcome the USAF/JBER's participation into the oversight and control of AWWU's security measures, which is common among public water utilities that serve miliary bases around the United States. Because of the lack of consultation or questions, JBER was unaware of AWWU's willingness to enter such an arrangement, which would have fully satisfied Selection Standard 4. AWWU remains willing to discuss such an arrangement on security. We recommend the draft EA be updated for the AWWU alternative for Standard 4.

D. Selection Standard 6 - Using Existing Drinking Water Infrastructure.

The draft EA further found that Selection Standard 6 was not satisfied because Alternative 4 would not "use [DU]'s existing drinking water source and treatment infrastructure, including the raw water supply at Ship Creek, the chlorine injection system, and the two, newly constructed 1.5-million-gallon storage tanks." This statement is not correct.

Alternative 4 would use much of the existing DU's infrastructure. For example, the newly constructed 1.5-million-gallon storage tanks would continue to be used by JBER, providing continued redundancy and resiliency to JBER's water system. While some of the current JBER/DU infrastructure surrounding the contaminated water treatment plant would no longer be necessary, such as the chlorine injection system,[3] other infrastructure is already available to AWWU in another form. For example, like JBER, AWWU also has access to water supply from Ship Creek and wells which provide a level of redundancy and resiliency. AWWU also has a second water treatment plant that can supply JBER, the Ship Creek Water Treatment Plant near JBER. The draft EA fails to consider the possible reuse of existing infrastructure under Alternative 4. This failure should be reconsidered.

III. Important Factors Left Out of the Draft EA.

[2] Alternatively buying water from AWWU would allow the existing water treatment facility to be rehabilitated into a SHPO structure over a much longer timeframe to better meet the needs of Cultural Resources under Section 3.2.6.

[3] Even the chlorine injector could be removed and re-used elsewhere, such as on a backup well.

The draft EA also left out, or did not adequately consider, other important factors. For example, selecting a properly described Alternative 4 using AWWU water available now, versus constructing an entirely new water treatment plant replacement, would provide tens of millions of dollars of immediate cost savings to federal taxpayers. It can be implemented immediately instead of waiting years for construction to even commence, let alone be completed. The demolition and removal of the existing water treatment plant could begin immediately rather than awaiting the years-long process for completion and commissioning of a new water treatment plant. The cost savings are large, and the time savings are significant. The health and safety benefits of immediate implementation are readily discernible from the discussion of PCBs in Section 2.5.2 of the draft EA These important benefits, not considered in the context of a properly developed Alternative 4, would provide for demolition and removal of the existing contaminated water treatment plant, exactly as planned for Alternative 1.

Next, the draft EA does not adequately address Environmental Justice Consequences in Section 3.2.7. The MOA is an environmental justice community with several low income and impoverished census tracts. In fact, over 30% of the lowest quintile income earners in the State of Alaska reside in the MOA Any and all federal dollars spent buying water from AWWU keeps rates down for all of those low income, and other water customers, in the MOA (including military members and their families who live off base), and decreases the burden to the community in perpetuity as long as JBER continues to purchase water from AWWU.

Building a new water treatment plant would provide only very short-term benefits to a few select contractors and vendors and would increase the costs to JBER through increased expenses and water rates charged by DU. Again, this related set of factors should have received more thorough consideration in the draft EA

Finally, the draft EA fails to adequately identify or consider the environmental impacts of building a new water treatment plant. Construction of any new plant like that proposed in Alternative 1 would have significant environmental impacts associated with the clearing of land, the emissions from production of concrete and steel needed to build the plant, and for the equipment to be installed in the plant. In addition, there would be emissions from the burning of diesel and other fuels in the construction process by heavy equipment and trucks and other construction equipment. There would also be emissions from the transportation of materials and equipment to the construction site by ships, airplanes, trains and trucks. Nor has the ongoing environmental impact of the operation of the plant been adequately considered or included, such as emissions related to power requirements. These environmental impacts appear to have not been adequately considered in the draft EA

IV. Wastewater Considerations.

Because JBER did not seem to have consulted with AWWU during the draft EA process, there are other problems that JBER and the MOA will be facing with respect to JBER's wastewater stream. AWWU recently sent JBER, and all its industrial customers, a letter

notifying them that there are proposed per- and polyfluoralkyl substances (PFAS) regulations and guidelines by the EPA. In that letter, we noted that AWWU's NPDES permit is under reapplication review by the EPA. JBER is an industrial pretreatment customer, and must meet all state, local and federal requirements before sending its wastewater to our wastewater system for treatment.

Because JBER's wastewater streams have notable concentrations of PFAS chemicals, there is a possibility that JBER will need to pretreat its wastewater for PFAS and/or other contaminants as a significant industrial discharger. This type of pretreatment could lead to millions of dollars or more in expenses to JBER.

JBER already has a very high-dollar liability in connection with potential wastewater treatment requirements and needs to be aware of those upcoming financial liabilities when considering whether to spend the money to build a new potable water treatment plant now. JBER's drinking water requirements can be addressed immediately, and much more economically for the benefit of JBER and the MOA, by purchasing water from AWWU rather than building an unnecessary new water treatment facility.

V. Conclusion.

The MOA and AWWU welcome ongoing discussions to partner with JBER on these crucial financial and environmental developments that are better solved working together to improve the interests of Alaska and the United States' interests.

Respectfully,

Mark A. Corsentino, P.E.
General Manager

Cc: Dave Bronson, Mayor, MOA
Kent Kohlhase, P.E., Municipal Manager, MOA
Anchorage Assembly
AWWU Board of Directors

APPENDIX B

Air Quality Impact Analysis Report

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: FORT RICHARDSON
State: Alaska
County(s): Anchorage Municipality
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: New Doyon Water Treatment Plan - JBER

c. Project Number/s (if applicable): FRAJBER-DUWTP-01

d. Projected Action Start Date: 5 / 2023

e. Action Description:

PROPOSED ACTION: Doyon Utilities (DU) is proposing to meet its obligations to provide enough safe drinking water to Joint Base Elmendorf-Richardson (JBER) facilities in order to dependably and continuously meet current and future demand in support of JBER's mission. Currently, the existing Water Treatment Plant (WTP), constructed in the early 1950s, is unable to meet the peak demand for clean drinking water and may be at risk for failing due to unanticipated circumstances. In addition, the WTP has detectable levels of polychlorinated biphenyl (PCB) coatings, asbestos, and lead-based paint. Although no drinking water thresholds have been exceeded, some samples have indicated the presence of PCBs in the drinking water. The United States (US) Environmental Protection Agency (EPA) has directed DU to ensure resolution of this issue by October 2023.

ALTERNATE 1 (PREFERRED): This alternative would construct a new WTP adjacent to the existing water storage tanks. After the WTP is operational, in accordance with EPA requirements, the existing WTP would be dismantled, materials would be properly disposed, and the site would be remediated.

NO ACTION ALTERNATIVE: This alternative would involve no upgrades, improvements, or remediation to the existing WTP. The plant's operation and maintenance would not change, including the current EPA requirements for monitoring and testing existing contamination within the building.

Three additional alternatives were considered, but eliminated since one or more of the six selection standards were not meet. A full description of the alternatives and selection standards can be found in the Environmental Assessment.

f. Point of Contact:

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Organization: 673 CES/CEIEC
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Phone Number: (907) 384-1361

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the General Conformity Rule are:

_____ applicable
__X__ not applicable

Total net direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the start of the action through achieving "steady state" (i.e., net gain/loss upon action fully implemented) emissions. The ACAM analysis used the latest and most accurate emission estimation techniques available; all algorithms, emission factors, and methodologies used are described in detail in the USAF Air Emissions Guide for Air Force Stationary Sources, the USAF Air Emissions Guide for Air Force Mobile Sources, and the USAF Air Emissions Guide for Air Force Transitory Sources.

"Insignificance Indicators" were used in the analysis to provide an indication of the significance of potential impacts to air quality based on current ambient air quality relative to the National Ambient Air Quality Standards (NAAQSs). These insignificance indicators are the 250 ton/yr Prevention of Significant Deterioration (PSD) major source threshold for actions occurring in areas that are "Clearly Attainment" (i.e., not within 5% of any NAAQS) and the GCR de minimis values (25 ton/yr for lead and 100 ton/yr for all other criteria pollutants) for actions occurring in areas that are "Near Nonattainment" (i.e., within 5% of any NAAQS). These indicators do not define a significant impact; however, they do provide a threshold to identify actions that are insignificant. Any action with net emissions below the insignificance indicators for all criteria pollutant is considered so insignificant that the action will not cause or contribute to an exceedance on one or more NAAQSs. For further detail on insignificance indicators see chapter 4 of the Air Force Air Quality Environmental Impact Analysis Process (EIAP) Guide, Volume II - Advanced Assessments.

The action's net emissions for every year through achieving steady state were compared against the Insignificance Indicator and are summarized below.

Analysis Summary:

2023

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.274	250	No
NOx	1.598	250	No
CO	1.870	250	No
SOx	0.005	250	No
PM 10	3.937	250	No
PM 2.5	0.058	100	No
Pb	0.000	25	No
NH3	0.002	100	No
CO2e	509.8		

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

2024

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.136	250	No
NOx	0.699	250	No
CO	1.071	250	No
SOx	0.002	250	No
PM 10	0.025	250	No
PM 2.5	0.025	100	No
Pb	0.000	25	No
NH3	0.001	100	No
CO2e	240.1		

2025

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.330	250	No
NOx	5.461	250	No
CO	1.974	250	No
SOx	0.004	250	No
PM 10	0.177	250	No
PM 2.5	0.177	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	507.8		

2026

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.346	250	No
NOx	12.234	250	No
CO	3.393	250	No
SOx	0.007	250	No
PM 10	0.393	250	No
PM 2.5	0.393	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	915.3		

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

2027

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.346	250	No
NOx	12.234	250	No
CO	3.393	250	No
SOx	0.007	250	No
PM 10	0.393	250	No
PM 2.5	0.393	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	915.3		

2028

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.346	250	No
NOx	12.234	250	No
CO	3.393	250	No
SOx	0.007	250	No
PM 10	0.393	250	No
PM 2.5	0.393	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	915.3		

2029

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.346	250	No
NOx	12.234	250	No
CO	3.393	250	No
SOx	0.007	250	No
PM 10	0.393	250	No
PM 2.5	0.393	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	915.3		

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

2030

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.429	250	No
NOx	12.728	250	No
CO	4.174	250	No
SOx	0.009	250	No
PM 10	0.515	250	No
PM 2.5	0.410	100	No
Pb	0.000	25	No
NH3	0.001	100	No
CO2e	1060.7		

2031

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.470	250	No
NOx	12.975	250	No
CO	4.565	250	No
SOx	0.009	250	No
PM 10	0.575	250	No
PM 2.5	0.419	100	No
Pb	0.000	25	No
NH3	0.001	100	No
CO2e	1133.4		

2032

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.387	250	No
NOx	12.481	250	No
CO	3.784	250	No
SOx	0.008	250	No
PM 10	0.454	250	No
PM 2.5	0.402	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	988.0		

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF AIR ANALYSIS (ROAA)

2033 - (Steady State)

Pollutant	Action Emissions (ton/yr)	INSIGNIFICANCE INDICATOR	
		Indicator (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.346	250	No
NOx	12.234	250	No
CO	3.393	250	No
SOx	0.007	250	No
PM 10	0.393	250	No
PM 2.5	0.393	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	915.3		

None of estimated annual net emissions associated with this action are above the insignificance indicators, indicating no significant impact to air quality.Therefore, the action will not cause or contribute to an exceedance on one or more NAAQSs. No further air assessment is needed.

KEARNS.AMY.ELIZABETH.1264803965 Digitally signed by KEARNS.AMY.ELIZABETH.1264803965 Date: 2023.04.06 11:04:54 -08'00'

Amy Kearns, GS-12

7 April 2023

DATE

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

1. General Information

- Action Location

Base: FORT RICHARDSON
State: Alaska
County(s): Anchorage Municipality
Regulatory Area(s): NOT IN A REGULATORY AREA

- Action Title: New Doyon Water Treatment Plan - JBER

- Project Number/s (if applicable): FRAJBER-DUWTP-01

- Projected Action Start Date: 5 / 2023

- Action Purpose and Need:

The purpose of the Proposed Action is to meet obligations to provide safe drinking water to JBER facilities, including housing and administration facilities. The Proposed Action is needed to consistently provide safe and reliable drinking water to accommodate existing and future peak demand and maintain appropriated water rights, while meeting EPA and ADEC drinking water regulations at JBER. In addition, the Proposed Action is needed for DU to comply with EPA's requirements under Toxic Substances Control Act (TSCA).

- Action Description:

PROPOSED ACTION: DU is proposing to meet its obligations to provide enough safe drinking water to JBER facilities in order to dependably and continuously meet current and future demand in support of JBER's mission. Currently, the existing WTP, constructed in the early 1950s, is unable to meet the peak demand for clean drinking water and may be at risk for failing due to unanticipated circumstances. In addition, the WTP has detectable levels of PCB coatings, asbestos, and lead-based paint. Although no drinking water thresholds have been exceeded, some samples have indicated the presence of PCBs in the drinking water. The US EPA has directed DU to ensure resolution of this issue by October 2023.

ALTERNATE 1 (PREFERRED): This alternative would construct a new WTP adjacent to the existing water storage tanks. After the WTP is operational, in accordance with EPA requirements, the existing WTP would be dismantled, materials would be properly disposed, and the site would be remediated.

NO ACTION ALTERNATIVE: This alternative would involve no upgrades, improvements, or remediation to the existing WTP. The plant's operation and maintenance would not change, including the current EPA requirements for monitoring and testing existing contamination within the building.

Three additional alternatives were considered, but eliminated since one or more of the six selection standards were not meet. A full description of the alternatives and selection standards can be found in the Environmental Assessment.

- Point of Contact

Name: Amy Kearns
Title: GS-12
Organization: 673 CES/CEIEC
Email: amy.kearns.1@us.af.mil
Phone Number: (907) 384-1361

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Activity List:

Activity Type		Activity Title
2.	Emergency Generator	New Water Treatment Plan Emergency Generator
3.	Heating	Boiler 1
4.	Heating	Boiler 2
5.	Heating	Water Heater for New Water Treatment Plant
6.	Tanks	New Water Treatment Plant Diesel Storage Tank
7.	Construction / Demolition	Construction Phase Emissions for New Doyon Water Treatment Plant

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

2. Emergency Generator

2.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Anchorage Municipality
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: New Water Treatment Plan Emergency Generator

- Activity Description:
Emergency back up generator to be installed at new Water Treatment Plant for power outages.

- Activity Start Date
Start Month: 8
Start Year: 2025

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	0.331329
SO_x	0.005784
NO_x	11.985225
CO	3.183720
PM 10	0.374365

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.374365
Pb	0.000000
NH_3	0.000000
CO_2e	615.5

2.2 Emergency Generator Assumptions

- Emergency Generator
Type of Fuel used in Emergency Generator: Diesel
Number of Emergency Generators: 1

- Default Settings Used: No

- Emergency Generators Consumption
Emergency Generator's Horsepower: 1851
Average Operating Hours Per Year (hours): 500

2.3 Emergency Generator Emission Factor(s)

- Emergency Generators Emission Factor (lb/hp-hr)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
0.000716	0.0000125	0.0259	0.00688	0.000809	0.000809			1.33

2.4 Emergency Generator Formula(s)

- Emergency Generator Emissions per Year
$AE_{POL} = (NGEN * HP * OT * EF_{POL}) / 2000$

AE_{POL}: Activity Emissions (TONs per Year)
NGEN: Number of Emergency Generators
HP: Emergency Generator's Horsepower (hp)
OT: Average Operating Hours Per Year (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hp-hr)

3. Heating

3.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Anchorage Municipality
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Boiler 1

- Activity Description:
One of two boilers to be installed at new Water Treatment Facility

- Activity Start Date
Start Month: 8
Start Year: 2025

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	0.004566
SO_x	0.000498
NO_x	0.083011
CO	0.069730
PM 10	0.006309

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.006309
Pb	0.000000
NH_3	0.000000
CO_2e	99.9

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

3.2 Heating Assumptions

- Heating
Heating Calculation Type: Rated Capacity Method

- Rated Capacity Method
Rated Capacity of boiler/furnance (MM Btu): 0.199
Type of fuel: Natural Gas
Type of boiler/furnace: Commercial/Institutional (0.3 - 9.9 MMBtu/hr)
Heat Value (MMBtu/ft^3): 0.00105

- Default Settings Used: No

- Boiler/Furnace Usage
Operating Time Per Year (hours): 8760

3.3 Heating Emission Factor(s)

- Heating Emission Factors (lb/1000000 scf)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
5.5	0.6	100	84	7.6	7.6			120,390

3.4 Heating Formula(s)

- Heating Fuel Consumption ft^3 per Year
FC_{RC}= OT * RC / HV / 1000000

FC_{RC}: Fuel Consumption for Rated Capacity Method
OT: Operating Time Per Year (hours)
RC: Rated Capacity of boiler/furnance (MM Btu)
HV: Heat Value (MMBTU/ft^3)
1000000: Conversion Factor

- Heating Emissions per Year
HE_{POL}= FC * EF_{POL} / 2000

HE_{POL}: Heating Emission Emissions (TONs)
FC: Fuel Consumption
EF_{POL}: Emission Factor for Pollutant
2000: Conversion Factor pounds to tons

4. Heating

4.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Anchorage Municipality
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Boiler 2

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Activity Description:
Second of two heating boilers to be installed at new Water Treatment Facility

- Activity Start Date
Start Month: 8
Start Year: 2025

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	0.004566
SO_x	0.000498
NO_x	0.083011
CO	0.069730
PM 10	0.006309

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.006309
Pb	0.000000
NH_3	0.000000
CO_2e	99.9

4.2 Heating Assumptions

- Heating
Heating Calculation Type: Rated Capacity Method

- Rated Capacity Method
Rated Capacity of boiler/furnance (MM Btu): 0.199
Type of fuel: Natural Gas
Type of boiler/furnace: Commercial/Institutional (0.3 - 9.9 MMBtu/hr)
Heat Value (MMBtu/ft^3): 0.00105

- Default Settings Used: No

- Boiler/Furnace Usage
Operating Time Per Year (hours): 8760

4.3 Heating Emission Factor(s)

- Heating Emission Factors (lb/1000000 scf)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
5.5	0.6	100	84	7.6	7.6			120,390

4.4 Heating Formula(s)

- Heating Fuel Consumption ft^3 per Year
FC_{RC}= OT * RC / HV / 1000000

FC_{RC}: Fuel Consumption for Rated Capacity Method
OT: Operating Time Per Year (hours)
RC: Rated Capacity of boiler/furnance (MM Btu)
HV: Heat Value (MMBTU/ft^3)
1000000: Conversion Factor

- Heating Emissions per Year

$HE_{POL} = FC * EF_{POL} / 2000$

HE_{POL}: Heating Emission Emissions (TONs)
FC: Fuel Consumption
EF_{POL}: Emission Factor for Pollutant
2000: Conversion Factor pounds to tons

5. Heating

5.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Anchorage Municipality
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Water Heater for New Water Treatment Plant

- Activity Description:
One water heater to be installed at new water treament plant

- Activity Start Date
Start Month: 8
Start Year: 2025

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	0.004566
SO_x	0.000498
NO_x	0.083011
CO	0.069730
PM 10	0.006309

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.006309
Pb	0.000000
NH_3	0.000000
CO_2e	99.9

5.2 Heating Assumptions

- Heating
Heating Calculation Type: Rated Capacity Method

- Rated Capacity Method
Rated Capacity of boiler/furnance (MM Btu): 0.199
Type of fuel: Natural Gas
Type of boiler/furnace: Commercial/Institutional (0.3 - 9.9 MMBtu/hr)
Heat Value ($MMBtu/ft^3$): 0.00105

- Default Settings Used: No

- Boiler/Furnace Usage
Operating Time Per Year (hours): 8760

5.3 Heating Emission Factor(s)

- Heating Emission Factors (lb/1000000 scf)

VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
5.5	0.6	100	84	7.6	7.6			120,390

5.4 Heating Formula(s)

- Heating Fuel Consumption ft^3 per Year
FC_{RC}= OT * RC / HV / 1000000

FC_{RC}: Fuel Consumption for Rated Capacity Method
OT: Operating Time Per Year (hours)
RC: Rated Capacity of boiler/furnance (MM Btu)
HV: Heat Value (MMBTU/ft^3)
1000000: Conversion Factor

- Heating Emissions per Year
HE_{POL}= FC * EF_{POL} / 2000

HE_{POL}: Heating Emission Emissions (TONs)
FC: Fuel Consumption
EF_{POL}: Emission Factor for Pollutant
2000: Conversion Factor pounds to tons

6. Tanks

6.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Anchorage Municipality
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: New Water Treatment Plant Diesel Storage Tank

- Activity Description:

- Activity Start Date
Start Month: 8
Start Year: 2025

- Activity End Date
Indefinite: Yes
End Month: N/A
End Year: N/A

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	0.000506
SO_x	0.000000
NO_x	0.000000
CO	0.000000
PM 10	0.000000

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.000000
Pb	0.000000
NH_3	0.000000
CO_2e	0.0

6.2 Tanks Assumptions

- Chemical

Chemical Name: Fuel oil no. 2
Chemical Category: Petroleum Distillates
Chemical Density: 7.1
Vapor Molecular Weight (lb/lb-mole): 130
Stock Vapor Density (lb/ft^3): 0.000129553551395334
Vapor Pressure: 0.0055
Vapor Space Expansion Factor (dimensionless): 0.068

- Tank

Type of Tank: Horizontal Tank
Tank Length (ft): 12.75
Tank Diameter (ft): 5.92
Annual Net Throughput (gallon/year): 2000

6.3 Tank Formula(s)

- Vapor Space Volume

$VSV = (PI / 4) * D^2 * L / 2$

VSV: Vapor Space Volume (ft^3)
PI: PI Math Constant
D^2: Tank Diameter (ft)
L: Tank Length (ft)
2: Convertion Factor (Vapor Space Volume is assumed to be one-half of the tank volume)

- Vented Vapor Saturation Factor

$VVSF = 1 / (1 + (0.053 * VP * L / 2))$

VVSF: Vented Vapor Saturation Factor (dimensionless)
0.053: Constant
VP: Vapor Pressure (psia)
L: Tank Length (ft)

- Standing Storage Loss per Year

$SSL_{VOC} = 365 * VSV * SVD * VSEF * VVSF / 2000$

SSL_{VOC}: Standing Storage Loss Emissions (TONs)
365: Number of Daily Events in a Year (Constant)
VSV: Vapor Space Volume (ft^3)
SVD: Stock Vapor Density (lb/ft^3)
VSEF: Vapor Space Expansion Factor (dimensionless)
VVSF: Vented Vapor Saturation Factor (dimensionless)
2000: Conversion Factor pounds to tons

- Number of Turnovers per Year

NT = (7.48 * ANT) / ((PI / 4.0) * D * L)

NT: Number of Turnovers per Year
7.48: Constant
ANT: Annual Net Throughput
PI: PI Math Constant
D^2: Tank Diameter (ft)
L: Tank Length (ft)

- Working Loss Turnover (Saturation) Factor per Year

WLSF = (18 + NT) / (6 * NT)

WLSF: Working Loss Turnover (Saturation) Factor per Year
18: Constant
NT: Number of Turnovers per Year
6: Constant

- Working Loss per Year

WL_{VOC} = 0.0010 * VMW * VP * ANT * WLSF / 2000

0.0010: Constant
VMW: Vapor Molecular Weight (lb/lb-mole)
VP: Vapor Pressure (psia)
ANT: Annual Net Throughput
WLSF: Working Loss Turnover (Saturation) Factor
2000: Conversion Factor pounds to tons

7. Construction / Demolition

7.1 General Information & Timeline Assumptions

- Activity Location

County: Anchorage Municipality
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Construction Phase Emissions for New Doyon Water Treatment Plant

- Activity Description:

The proposed action will involve building a new water treatment plant. Construction activities included in this analysis include: site grading, trenching, paving, building the new water treatment plant, and demolishing the existing plant. The existing water treatment plant will not be demolished until after the new plant is fully operational. Demolition is expected to start in May 2030.

- Activity Start Date

Start Month: 5
Start Month: 2023

- Activity End Date

Indefinite: False
End Month: 4
End Month: 2032

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.844399
SO_x	0.013372
NO_x	4.140558
CO	5.845181
PM 10	4.338966

Pollutant	Total Emissions (TONs)
PM 2.5	0.147083
Pb	0.000000
NH_3	0.005257
CO_2e	1312.7

7.1 Demolition Phase

7.1.1 Demolition Phase Timeline Assumptions

- Phase Start Date
Start Month: 5
Start Quarter: 1
Start Year: 2030

- Phase Duration
Number of Month: 24
Number of Days: 0

7.1.2 Demolition Phase Assumptions

- General Demolition Information
Area of Building to be demolished (ft^2): 31651
Height of Building to be demolished (ft): 47

- Default Settings Used: Yes

- Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Concrete/Industrial Saws Composite	1	8
Rubber Tired Dozers Composite	1	1
Tractors/Loaders/Backhoes Composite	2	6

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

7.1.3 Demolition Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Concrete/Industrial Saws Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0336	0.0006	0.2470	0.3705	0.0093	0.0093	0.0030	58.539
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1671	0.0024	1.0824	0.6620	0.0418	0.0418	0.0150	239.45
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0335	0.0007	0.1857	0.3586	0.0058	0.0058	0.0030	66.872

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**Pb**	**NH_3**	**CO_2e**
LDGV	000.367	000.002	000.247	003.890	000.013	000.011		000.023	00322.866
LDGT	000.420	000.003	000.415	004.941	000.016	000.014		000.024	00415.017
HDGV	000.691	000.005	001.089	015.554	000.035	000.031		000.044	00754.980
LDDV	000.160	000.003	000.135	002.293	000.004	000.004		000.008	00307.975
LDDT	000.299	000.004	000.385	003.918	000.007	000.006		000.008	00436.957
HDDV	000.593	000.013	005.739	001.925	000.172	000.158		000.030	01484.506
MC	001.986	000.003	000.868	014.015	000.030	000.026		000.054	00402.436

7.1.4 Demolition Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (0.00042 * BA * BH) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
0.00042: Emission Factor (lb/ft^3)
BA: Area of Building to be demolished (ft^2)
BH: Height of Building to be demolished (ft)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = BA * BH * (1 / 27) * 0.25 * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building being demolish (ft^2)
BH: Height of Building being demolish (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards ($1\ yd^3 / 27\ ft^3$)
0.25: Volume reduction factor (material reduced by 75% to account for air space)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

7.2 Site Grading Phase

7.2.1 Site Grading Phase Timeline Assumptions

- Phase Start Date
Start Month: 6
Start Quarter: 2
Start Year: 2023

- Phase Duration
Number of Month: 3
Number of Days: 0

7.2.2 Site Grading Phase Assumptions

- General Site Grading Information
Area of Site to be Graded (ft^2): 98506
Amount of Material to be Hauled On-Site (yd^3): 27912
Amount of Material to be Hauled Off-Site (yd^3): 3296

- Site Grading Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Graders Composite	1	6
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	6
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust

Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

7.2.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.367	000.002	000.247	003.890	000.013	000.011		000.023	00322.866
LDGT	000.420	000.003	000.415	004.941	000.016	000.014		000.024	00415.017
HDGV	000.691	000.005	001.089	015.554	000.035	000.031		000.044	00754.980
LDDV	000.160	000.003	000.135	002.293	000.004	000.004		000.008	00307.975
LDDT	000.299	000.004	000.385	003.918	000.007	000.006		000.008	00436.957
HDDV	000.593	000.013	005.739	001.925	000.172	000.158		000.030	01484.506
MC	001.986	000.003	000.868	014.015	000.030	000.026		000.054	00402.436

7.2.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

7.3 Trenching/Excavating Phase

7.3.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date
Start Month: 5
Start Quarter: 2
Start Year: 2023

- Phase Duration
Number of Month: 5
Number of Days: 0

7.3.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information
Area of Site to be Trenched/Excavated (ft^2): 18867
Amount of Material to be Hauled On-Site (yd^3): 7883
Amount of Material to be Hauled Off-Site (yd^3): 8091

- Trenching Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust
Average Hauling Truck Capacity (yd^3): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

7.3.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**Pb**	**NH_3**	**CO_2e**
LDGV	000.367	000.002	000.247	003.890	000.013	000.011		000.023	00322.866
LDGT	000.420	000.003	000.415	004.941	000.016	000.014		000.024	00415.017
HDGV	000.691	000.005	001.089	015.554	000.035	000.031		000.044	00754.980
LDDV	000.160	000.003	000.135	002.293	000.004	000.004		000.008	00307.975
LDDT	000.299	000.004	000.385	003.918	000.007	000.006		000.008	00436.957
HDDV	000.593	000.013	005.739	001.925	000.172	000.158		000.030	01484.506
MC	001.986	000.003	000.868	014.015	000.030	000.026		000.054	00402.436

7.3.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

$PM10_{FD} = (20 * ACRE * WD) / 2000$

$PM10_{FD}$: Fugitive Dust PM 10 Emissions (TONs)
20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
ACRE: Total acres (acres)
WD: Number of Total Work Days (days)
2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd^3)
$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)

HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

7.4 Building Construction Phase

7.4.1 Building Construction Phase Timeline Assumptions

- Phase Start Date
Start Month: 7
Start Quarter: 3
Start Year: 2023

- Phase Duration
Number of Month: 24
Number of Days: 0

7.4.2 Building Construction Phase Assumptions

- General Building Construction Information
Building Category: Commercial or Retail
Area of Building (ft^2): 10000
Height of Building (ft): 24
Number of Units: N/A

- Building Construction Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cranes Composite	1	4
Forklifts Composite	2	6
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips

Average Vendor Round Trip Commute (mile): 40 (default)

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

7.4.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Cranes Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0754	0.0013	0.5027	0.3786	0.0181	0.0181	0.0068	128.79
Forklifts Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0258	0.0006	0.1108	0.2145	0.0034	0.0034	0.0023	54.454
Tractors/Loaders/Backhoes Composite								
	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CH_4	CO_2e
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.367	000.002	000.247	003.890	000.013	000.011		000.023	00322.866
LDGT	000.420	000.003	000.415	004.941	000.016	000.014		000.024	00415.017
HDGV	000.691	000.005	001.089	015.554	000.035	000.031		000.044	00754.980
LDDV	000.160	000.003	000.135	002.293	000.004	000.004		000.008	00307.975
LDDT	000.299	000.004	000.385	003.918	000.007	000.006		000.008	00436.957
HDDV	000.593	000.013	005.739	001.925	000.172	000.158		000.030	01484.506
MC	001.986	000.003	000.868	014.015	000.030	000.026		000.054	00402.436

7.4.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase
$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase
$VMT_{VE} = BA * BH * (0.32 / 1000) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.32 / 1000): Conversion Factor ft^3 to trips (0.32 trip / 1000 ft^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase
$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase
$VMT_{VT} = BA * BH * (0.05 / 1000) * HT$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft^2)
BH: Height of Building (ft)
(0.05 / 1000): Conversion Factor ft^3 to trips (0.05 trip / 1000 ft^3)

HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

7.5 Architectural Coatings Phase

7.5.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date
Start Month: 6
Start Quarter: 1
Start Year: 2025

- Phase Duration
Number of Month: 1
Number of Days: 0

7.5.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information
Building Category: Non-Residential
Total Square Footage (ft^2): 10000
Number of Units: N/A

- Architectural Coatings Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Worker Trips
Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

7.5.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.367	000.002	000.247	003.890	000.013	000.011		000.023	00322.866
LDGT	000.420	000.003	000.415	004.941	000.016	000.014		000.024	00415.017
HDGV	000.691	000.005	001.089	015.554	000.035	000.031		000.044	00754.980
LDDV	000.160	000.003	000.135	002.293	000.004	000.004		000.008	00307.975
LDDT	000.299	000.004	000.385	003.918	000.007	000.006		000.008	00436.957
HDDV	000.593	000.013	005.739	001.925	000.172	000.158		000.030	01484.506
MC	001.986	000.003	000.868	014.015	000.030	000.026		000.054	00402.436

7.5.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase
$VMT_{WT} = (1 * WT * PA) / 800$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
1: Conversion Factor man days to trips (1 trip / 1 man * day)
WT: Average Worker Round Trip Commute (mile)
PA: Paint Area (ft^2)
800: Conversion Factor square feet to man days (1 ft^2 / 1 man * day)

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase
$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
BA: Area of Building (ft^2)
2.0: Conversion Factor total area to coated area (2.0 ft^2 coated area / total area)
0.0116: Emission Factor (lb/ft^2)
2000: Conversion Factor pounds to tons

7.6 Paving Phase

7.6.1 Paving Phase Timeline Assumptions

- Phase Start Date
Start Month: 8
Start Quarter: 3
Start Year: 2024

- Phase Duration
Number of Month: 0
Number of Days: 7

7.6.2 Paving Phase Assumptions

- General Paving Information
Paving Area (ft^2): 41979

- Paving Default Settings
Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Cement and Mortar Mixers Composite	4	6
Pavers Composite	1	7
Paving Equipment Composite	1	8
Rollers Composite	1	7
Tractors/Loaders/Backhoes Composite	1	7

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

7.6.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Graders Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0757	0.0014	0.4155	0.5717	0.0191	0.0191	0.0068	132.91
Other Construction Equipment Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0483	0.0012	0.2497	0.3481	0.0091	0.0091	0.0043	122.61
Rubber Tired Dozers Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.1830	0.0024	1.2623	0.7077	0.0494	0.0494	0.0165	239.49
Tractors/Loaders/Backhoes Composite								
	VOC	**SO_x**	**NO_x**	**CO**	**PM 10**	**PM 2.5**	**CH_4**	**CO_2e**
Emission Factors	0.0364	0.0007	0.2127	0.3593	0.0080	0.0080	0.0032	66.879

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.367	000.002	000.247	003.890	000.013	000.011		000.023	00322.866
LDGT	000.420	000.003	000.415	004.941	000.016	000.014		000.024	00415.017
HDGV	000.691	000.005	001.089	015.554	000.035	000.031		000.044	00754.980
LDDV	000.160	000.003	000.135	002.293	000.004	000.004		000.008	00307.975
LDDT	000.299	000.004	000.385	003.918	000.007	000.006		000.008	00436.957
HDDV	000.593	000.013	005.739	001.925	000.172	000.158		000.030	01484.506
MC	001.986	000.003	000.868	014.015	000.030	000.026		000.054	00402.436

7.6.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft^2)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd^3 / 27 ft^3)
HC: Average Hauling Truck Capacity (yd^3)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd^3)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$VMT_{WT} = WD * WT * 1.25 * NE$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$VOC_P = (2.62 * PA) / 43560$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft^2)
43560: Conversion Factor square feet to acre (43560 ft2 / acre)^2 / acre)

APPENDIX C

Notice of Availability

PUBLIC NOTICE

NOTICE OF AVAILABILITY

DRAFT ENVIRONMENTAL ASSESSMENT AND

PROPOSED FINDING OF NO SIGNIFICANT IMPACT FOR MANAGEMENT OF WATER TREATMENT AT JOINT BASE ELMENDORF-RICHARDSON (JBER), ALASKA

An Environmental Assessment (EA) has been prepared to evaluate the potential environmental impacts of actions to provide safe drinking water to Joint Base Elmendorf-Richardson (JBER), Alaska. Under the Proposed Action, the owner of JBER's potable water utility, Doyon Utilities, LLC (DU), would construct a new Water Treatment Plant (WTP) and dismantle and remediate the existing JBER WTP once the new plant is fully operational. The project would enable DU to meet its obligations to provide enough safe drinking water to JBER facilities in order to dependably meet current and future demand in support of JBER's mission.

The EA, prepared in accordance with the National Environmental Policy Act (NEPA), Council on Environmental Quality regulations, and Air Force instructions implementing NEPA; evaluates potential impacts of the Proposed Action and No Action Alternative on the environment. Based on this analysis, the Air Force has prepared a proposed Finding of No Significant Impact (FONSI).

The Draft EA and Draft FONSI, dated April 2023, will be available for review at the following locations:

Chugiak-Eagle River Library	Z.J. Loussac Library	JBER Library
12001 Business Blvd. #176 Eagle River Town Center Eagle River, AK 99577	3600 Denali St. Anchorage, AK 99503	Army Education Center Bldg. 7, Chilkoot Ave. JBER, AK 99505

Electronic copies of the documents can also be found on the JBER website at http://www.jber.jb.mil/Services-Resources/Environmental/NEPA.aspx (under "Public Documents and Notices").

You are encouraged to submit comments through May 11, 2023. Comments should be provided to JBER Public Affairs, 10480 Sijan Ave., Suite 123, JBER, AK 99506. Emailed comments can be submitted to jber.pa@us.af.mil. Comments may also be submitted on the phone at (907) 551-8996.

PRIVACY ADVISORY NOTICE

Public comments on this Draft EA are requested pursuant to NEPA, 42 United States Code 4321, et seq. All written comments received during the comment period will be made available to the public and considered during the final EA preparation. Providing private address information with your comment is voluntary and such personal information will be kept confidential unless release is required by law. However, address information will be used to compile the project mailing list and failure to provide it will result in your name not being included on the mailing list.