
ENVIRONMENTAL ASSESSMENT FOR THE CONSTRUCTION OF STAFF HOUSING

KODIAK NATIONAL WILDLIFE REFUGE,
ALASKA

MAY 2013

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1. PURPOSE OF AND NEED FOR ACTION

1.1 Introduction

Kodiak National Wildlife Refuge (Kodiak Refuge, Refuge) is administered by the U.S. Fish and Wildlife Service (Service) and encompasses approximately 1.6 million acres: the southwestern two-thirds of Kodiak Island, all of Uganik and Ban islands, and parts of Afognak Island. Its administrative facilities include its headquarters complex, which is situated outside Refuge boundaries five miles southwest of the City of Kodiak, and a triplex building, which is located within the City of Kodiak and serves as residential housing for Refuge employees. The triplex was built more than 50 years ago. While it has previously undergone comprehensive renovations, it is in need of extensive and costly repairs. In this environmental assessment (EA) we analyze the effects of the proposal to construct new staff housing at the headquarters site and demolish the triplex. We also analyze the effects of the “no action” alternative.

1.2 Proposed Action

The Service proposes to construct a new multiplex (tri-or fourplex) building for 3-4 Refuge staff and their families at the Kodiak Refuge’s headquarters location at 1390 Buskin River Road in Kodiak, Alaska. After construction and occupation of the new housing, the existing triplex and current staff housing at 512 Mill Bay Road would be demolished.

1.3 Purpose and Need

The triplex was constructed by the United States military in the 1950’s and there are no other known uses for the building besides housing (URS 2012a). It was transferred to the Forest Service in the 1970s and officially transferred again to the Service in 2004. The Service, though, had been using the triplex as staff housing since the early 1980’s under an agreement with the Forest Service.

The building is a non-descript 28 ft. x 120 ft. single story residential triplex of frame construction built on a column and beam concrete foundation. It was extensively renovated in the mid 1980’s and again in the late 90’s. However, the building’s structural supports are deteriorated from many years of water infiltration in the crawlspace underneath the building. Due to funding constraints, needed maintenance actions have been deferred repeatedly and have accumulated over time, leading to an extensive list of repairs to be undertaken. Additionally, there are concerns associated with the structure regarding petroleum contaminated soil.

1.4 Location

Existing Triplex Site

The triplex is situated at 512 Mill Bay Road within the city limits of Kodiak, Alaska, on a 2.38 acre lot. The legal description for the parcel is Section 32 of the Seward Meridian, Township 27 South, Range 19 West, USGS Kodiak (D-2) Southeast quadrangle, Alaska (1:25,000 series, topographic map, dated 1987). Lot information – USS 2538A LT 6C East Rezanof.

Headquarters Site

The Headquarters facility is located approximately five miles southwest of the triplex site at 1390 Buskin River Road in Kodiak Station, Alaska, on a 69.43 acre parcel. The legal description for the parcel is Section 10 of the Seward Meridian, Township 28 South, Range 20 West, USGS Kodiak (D-2) Southeast quadrangle, Alaska (1:25,000 series, topographic map, dated 1987). The original survey was USS 2539 PTN LT 21 (LCG 2012).

1.5 Decision to be made

The decisions that must be made regarding this proposal are: 1) whether either alternative would have a significant impact on the environment requiring an environmental impact statement; 2) whether to proceed with the proposed action, and demolishing the existing triplex and constructing new housing at the Headquarters site or take no action and continue to use the triplex site; and 3) what mitigative measures could be implemented for each of the alternatives to minimize or compensate for any environmental damage.

1.6 Public involvement

Letters were sent to two tribes and one Native corporation inviting them to participate in the environmental assessment process. The project was informally discussed with the Kodiak Island Borough, the City of Kodiak, and the U.S. Coast Guard (USCG). Availability of the EA was published in the local newspaper and on the Refuge website.

1.7 Consultation

1.7.1 Tribal Consultation

The United States has a unique legal and political relationship with Alaska Native tribal governments and Native corporations. The United States recognizes Alaska Native tribes as sovereign governments that are self-governing under Federal law. Pursuant to DOI Policy on Consultation with Indian Tribes (as amended on August 10, 2012), the Service initiated consultation with formal letters to the leaders of Tangirnaq Native Village, the Sun'aq Tribe of Kodiak, and to Koniag, Incorporated in early April 2013. The Service invited the tribes to participate in any way that would be meaningful to them, including government to government consultation. The tribes and the corporation were also included in the distribution of this environmental assessment.

1.7.2 Other Consultation

Refuge staff have met with representatives from the U.S. Coast Guard Realty Division regarding the planned construction of a multiplex at the headquarters site. The parcel where the multiplex is proposed to be constructed is used by the Service as authorized under a land permit from USCG and notification is required for any major construction projects. The USCG has no objections to the project as proposed, and they will be doing brief reviews of the design. The Kodiak Island Borough has been notified of the plans to demolish the existing triplex.

The Service's regional archeologist consulted with the State Historic Preservation Office regarding the demolition of the triplex building. It was determined that the building was not a significant cultural resource.

The Service is required to ensure that any action authorized, funded, or carried out by the Service does not jeopardize the continued existence of species listed under the Endangered Species Act or modify their critical habitat. In February and April 2013, the Service contacted the Service's Endangered Species Division and the National Marine Fisheries Service regarding threatened and endangered species. Both agencies provided a list of listed and candidate species in the general area of the City of Kodiak. Steller's eider and northern sea otter are threatened species, Steller Sea Lion is an endangered species, and the Kittlitz's murrelet is a candidate species. There is no critical habitat around the City of Kodiak. We expect that the demolition of the triplex and construction of a new multiplex would have no effect on these species making further consultation under Section 7 of the Endangered Species Act unnecessary.

2. ALTERNATIVES

2.1 Alternative A – No Action Alternative

Under the "no action" alternative no new residential housing facility would be constructed and the existing triplex would not be demolished. Several Kodiak Refuge employees and their families would continue to live in the triplex building at 512 Mill Bay Road. The building would have to undergo major

renovations to provide appropriate living space for current and future residents. The rough estimate on the costs necessary to repair the existing triplex, based on current expected repairs, is approximately \$905,000. Because this facility is over 50 years old, additional repairs would be expected over the life of the structure. For more information regarding potential expenditures for repairing the existing triplex, see Appendix A.

2.2 Alternative B – Construct Multiplex on Headquarters Site and demolish Triplex

Under Alternative B – the Service’s preferred alternative – the new multiplex would be built on the Kodiak Refuge headquarters site at 1390 Buskin River Road, Kodiak Alaska. After construction and occupation of the new housing, the existing triplex at 512 Mill Bay Road would be demolished and removed from the site.

Numerous aspects of the multiplex design would result in energy efficient housing, including the exterior wall design and the electric fired hydronic heating systems that would serve as the primary heat source for the new multiplex. Construction of the new residences would also include a 250-foot extension of the existing access road, a septic tank and drain field, and a new water service extension from the shop building at the Refuge headquarters complex. The length of water service required to the new multiplex would be approximately 350 feet. The footprint of the new facility would be approximately 21,400 square feet, including parking areas, back yards, and roadway and utility installations. During construction, an additional area of approximately 9,100 square feet would be temporarily disturbed for material storage and construction activities (Figure 1).

The triplex would be demolished using heavy machinery (i.e., bulldozers) and hazardous wastes would most likely be removed prior to demolition. After demolition, the site would be fully remediated. Demolition debris, hazardous materials (e.g., asbestos), and any contaminants or contaminated soils would be removed and disposed at a waste site authorized to handle hazardous material. Some hazardous wastes may need to be barged off of the island and disposed of at a separate landfill that is authorized to handle specific hazardous wastes. Once all demolition and remediation work is completed, the site would be stabilized by grading and seeding disturbed areas.

The cost for the new construction can be estimated from a similar project for construction of a four-plex built in 2000 in Dillingham, Alaska. With escalation included, the current cost of the Dillingham building is approximately \$1,600,000. The new construction is assumed to have a useful life of approximately 25 years before major repairs are expected. For more information regarding potential expenditures for a new multiplex, see Appendix A.

Best Management Practices would be implemented during both construction and demolition. Any environmental contamination control plans required for construction or demolition would be implemented to comply with authorities having jurisdiction including federal, state, and local regulations. In addition, demolition of the triplex and removal and disposal of materials would be accomplished within all appropriate permitting and guidelines for hazardous materials handling.

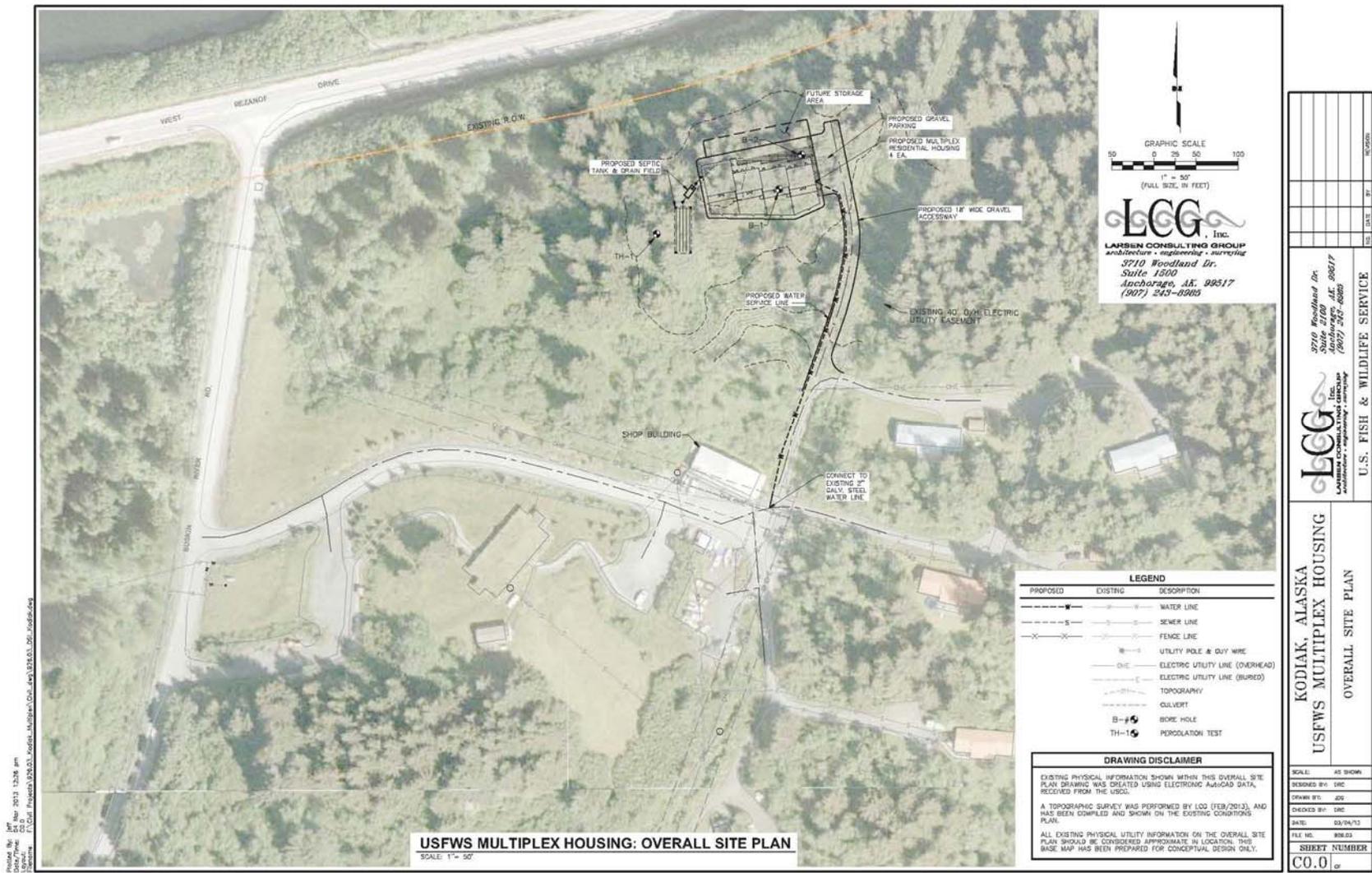


Figure 1. Draft conceptual site plan of multiplex proposed by the Service at the Kodiak Refuge headquarters in the City of Kodiak, Alaska.

2.3 Alternatives considered but not in detail

Two other alternatives were considered but eliminated from detailed study:

- 1) Rent or buy existing housing instead of building a new facility: During initial project planning in late 2009, Refuge staff carried out a housing market assessment. Due to the competitive market, high demand for housing, and inflated prices in Kodiak, only limited housing options were available for either rent or purchase. In March 2013, a Service contracting officer conducted a survey of the existing housing market again to see if conditions had changed. Only two houses were available for purchase and nothing appropriate was identified for rent. Both of the available houses were over 20 years old and were substantially larger than what the Service needed. Additionally, the age of the houses was a concern as there would likely be deficiencies to address before the houses could be occupied. Concerns included disability access requirements, mold and water infiltration issues, energy efficiency, and roof condition. Also, since the rent charged to Refuge employees for residences owned by the Service is largely determined by the size of the unit, the large size of the prospective houses would have resulted in a large increase in rent. The Service decided renting or buying existing housing was not a viable option and would not meet the needs of Refuge staff that currently use the existing triplex.
- 2) Build the new multiplex on a different site within the headquarters complex: This site would have been located west of the temporary staff housing unit off the existing roadway. The building would have been situated south of the roadway with parking north of the roadway. The Service's Division of Engineering and Facilities thoroughly evaluated this site for feasibility of construction, but concluded that it was not as suitable for construction of the new facility as the site considered in the proposed action.

3. AFFECTED ENVIRONMENT

3.1 General Description

Geography and Climate

The City of Kodiak is located on the eastern shore of Kodiak Island in the Gulf of Alaska. Kodiak Island encompasses roughly 3,600 square miles and lies about 250 air miles south of Anchorage. Kodiak is the largest island in Alaska and is the second largest island in the US. The majority of Kodiak and adjacent islands have irregular coastlines of bays, inlets, and rugged mountains. The mountainous interior of the island, with several peaks more than 4,000 feet in elevation, is covered by lush, dense vegetation during the summer, with alpine vegetation on the highest slopes. The northern end of Kodiak Island, where the City of Kodiak is located, is dominated by spruce forests.

The climate of Kodiak Island has a strong marine influence. There is little freezing weather, moderate precipitation, and frequent cloud cover and fog. Severe storms are common from December through February. Annual rainfall averages 67 inches, and annual snowfall averages 78 inches. January

temperatures range from 14° to 46° F; July temperatures vary from 39° to 76° F. Temperatures generally remain within a relatively narrow maritime range, from 32° to 62° F.

History and Demographics

Kodiak Island was settled by Russian fur trappers in 1792. Originally inhabited by Alutiiq natives for over 7000 years, the City of Kodiak was established in the 18th century by people from the Russian empire. The city was the first capital of Russian Alaska, which moved to Sitka when Alaska was purchased by the United States in 1867. Since the Aleutian Campaign of World War II, several branches of the military have maintained a presence in the city and on the island. The City of Kodiak was incorporated on September 11, 1940. The 1960's brought expanded growth in commercial fisheries and fish processing, and the Kodiak Island Borough was incorporated in 1963. Today, the City of Kodiak is a hub for the maritime industry of Southwest Alaska and home to a large and varied fishing fleet. The port operates a container terminal and the two small boat harbors accommodate a fleet of 1,200 fishing and general purpose recreational vessels annually.

The island culture is grounded in commercial and subsistence fishing activities and is primarily non-Native. A Russian Orthodox Church seminary is based in Kodiak, one of the two existing seminaries of this kind in the United States. The USCG plays an important economic role in the borough with nearly 1,000 active duty personnel stationed on the island.

The population of Kodiak Island is 13,870, and the city population is 6,312 (Kodiak Chamber of Commerce 2012). The surrounding road-connected residential areas are Chiniak, Monashka Bay, Service District 1, the USCG base, and Women's Bay. The combined population of these areas is approximately 6,701. Based on 2010 Census data, the median age of Kodiak's population is 32.5 years. Males comprise 53% of the population and females 47%.

Existing Triplex Site

The triplex building is located on a 2.38 acre lot and consists of an approximately 3,400 square foot single story structure divided into three units of approximately equal size and parking areas in front of each unit. Additionally there are four outbuildings located on the property: a 400 square foot wood frame storage garage with concrete slab to the east of the triplex building; two wood frame storage sheds to the west of the triplex building with footprints of 150 square feet and 600 square feet; and a 50 square foot wood frame greenhouse (Figure 2).

The site slopes downward from the northeast to the south and southwest, toward West Rezanof Drive. With an elevation of approximately 45 feet above mean sea level, the triplex building is located on a relatively level area at the high point of the property. The lower elevations to the south and southwest are approximately 33 feet above mean sea level.

The triplex building was completely renovated at least twice since its construction in the 1950's; however, several problems remain. Prior to 2006, there was a large depression under the building that was consistently wet and muddy and sometimes filled with water up to 3' deep. In 2006, a contractor

filled in the hole with gravel and installed a ground vapor barrier in the crawlspace. In spite of this work, however, extensive damage to the wooden floor framing had already occurred from many years of moisture and mold growth.

During the 2006 construction activities, two underground fuel tanks buried in the parking lot were inadvertently discovered and dug up, one of which was leaking and/or was damaged when it was found. Construction was halted, the site was cleaned up, and the contaminated soil was containerized and shipped to Seattle where it was disposed of at a hazardous waste landfill in Kent, Washington. An aboveground storage tank prevented removal of all the contaminated soil, especially along the foundation wall to the east (TPECI 2006). Analytical sampling results indicated that limited contamination with diesel range organics remains in soils along the foundation wall on both sides of the excavation (TPECI 2006).

In 2009 NORTECH, who had been contracted to assess the indoor air quality of the triplex, found several problems with the crawl space underneath the building. In spite of the work done in 2006, ongoing water leaks, low spots around the foundation of the building, and moisture in the crawl space and wood framing indicated that water was still intruding into the crawl space. NORTECH (2009) further determined that volatile organic compounds were present at elevated levels in the crawl space and the fiberglass insulation in the floor joist cavities was contaminated with rat feces. NORTECH (2009) also found active mold growth in the triplex was affecting indoor air quality in both units inhabited at the time, and CO₂ concentrations were well above standard levels, indicating insufficient fresh air supply within the occupied spaces.



Figure 2. Triplex building used by the Service for staff housing in the City of Kodiak, Alaska.

Headquarters Building Site

The site of the new multiplex is at the Kodiak Refuge Headquarters complex, which is situated on a 69.43 acre parcel. The site is presently an undeveloped, wooded lot (Figure 3); to the south and west of the site are the Refuge’s headquarters, four staff residences, a shop building, a residence for temporary staff and a storage site (“Bone Yard”). The remainder of the parcel is undeveloped. The site has steep sloping ground to the west and to the south that drops down in elevation by over 40 ft. To the north, the terrain drops down over 30 ft. to the highway. To the east there is a small hill that rises roughly 25 ft. to an elevation of 142 ft. above sea level.

The site was part of a land parcel originally owned and operated by the United States Navy during World War II. The property was subsequently acquired by the USCG. In 1979, a USCG land permit authorized the Service to use what is now the Refuge’s headquarters site.



Figure 3. Proposed construction site for multiplex building in Kodiak, Alaska.

3.2 Physical Environment

3.2.1 Air Quality

The air quality in Kodiak is generally thought to be good. Sources of pollution include vehicle exhaust (gasoline and diesel), aircraft, and residential heating. The State of Alaska does not maintain air quality monitoring equipment on the island because of the lack of obvious sources of problematic emissions and overall good air quality in the area in the past (Barbara Trost, Alaska Department of Environmental Conservation, Air monitoring and quality assurance program, personal communication). The level of pollution is expected to be similar at the triplex and at the headquarters site.

3.2.2 Water

Existing Triplex Site

The depth to groundwater is estimated to be approximately 6-9 feet below ground surface (URS 2012a), and the approximate direction of groundwater flow in the site vicinity is south/southwest towards East Rezanof Drive. Both TPECI (2006) and NORTECH (2009) confirmed that contaminated soil remained after

the site was cleaned up in 2006. Some residual soil contamination was inaccessible at the time of clean up due to existing structures and remediation would potentially have damaged these structures. According to TPECI (2006), contamination does not appear to be impacting groundwater at the site.

NORTECH (2009) reports surface water drainage from the parcel to the north of the triplex. The water runs in a drainage ditch along the north side of the triplex parking lot, crosses the access road to the site, and collects at the western and southern base of the fill on which the triplex is built. Just west of the triplex building is a metal drainage culvert which contributes to a drainage that extends towards the southwest off the property.

There are no nearby streams or lakes, and the parcel is not located in a floodplain. The site is located approximately 800 feet west of the Pacific Ocean.

Headquarters Site

The depth to groundwater is unknown, and the groundwater flow is estimated to be towards the Buskin River to the south and towards Chiniak Bay to the east (URS 2012b). There are no surface water bodies present on or directly adjacent to the site, and the property itself is not located in a floodplain. The site is located approximately 500 feet south of Lake Louise and 1,000 feet north of the Buskin River.

3.2.3 Soils

Existing Triplex Site

Soil composition has not been determined at the triplex site. Fill was added to the main portion of the site to level and grade the foundation materials on which the current building sits (URS 2012a). The soils surrounding the triplex support conventional lawn and other vegetation traditionally found in the neighborhood.

Headquarters Site

The dominant soil composition in the general area of the headquarters site consists of silt loam in the top layer down to six inches depth, followed by loamy fine sand (to 11 inches), silt loam (to 23 inches), very stony sandy loam (to 42 inches) and weathered bedrock (URS 2012b). This type of soil is moderately well to well drained and has intermediate water holding capacity (URS 2012b). Other subordinate soil types which may appear within the headquarters parcel but not near the construction site include peat and loamy fine sand soil surface textures.

3.2.4 Hazardous Materials

Existing Triplex Site

During a hazardous materials survey, Engineering, Health and Safety Consultants (EHS 2012) identified potentially hazardous materials in the triplex which could be affected by the demolition of the structure. The materials that are present or assumed to be present include: asbestos in some sealants and in the built-up roofing material of the original roof; lead in paints, dust, batteries, pipe solder, metallic lead

flashing on original roof vents, and in ceramic wall tile and glazing; mercury in fluorescent lamps, high intensity discharge lamps, switches, and thermostats; and radio-active materials in smoke detectors. Other hazardous materials include refrigerants and residual soil contamination from the two leaking underground fuel tanks which were discovered and removed in 2006 (TPECI 2006).

Several facilities within a radius of 1 mile or less of the triplex have been identified as having hazardous materials. There are 28 State Hazardous Waste Sites (SHWS) within a 1 mile radius of the Triplex building, 11 State Leaking Underground Storage Tank (LUST) sites within 0.5 miles of the triplex, and four State Active Underground Storage Tank (UST) sites within 0.25 miles of the triplex.

Headquarters Site

There are numerous locations at the headquarters complex where soldiers, during World War II, constructed sleeping shacks so as to have faster access to their gun emplacements east of the headquarters complex. Many locations appeared to have been abandoned quickly and debris was left behind. URS (2012b) found surficial debris at the proposed building site during their visit in 2012: wood framing and three power line insulators. No hazardous substances were observed at the site. Based on the historical land use, it is possible that more debris or potentially hazardous materials could be discovered if the site is developed.

There are currently two locations of drum or chemical storage within the headquarters complex, at the Shop and at the Bone Yard. The Shop and the Bone Yard are at a distance of approximately 350 feet and 800 feet from the prospective construction site, respectively. There have been no known spills at either location.

The headquarters complex was identified as a LUST site in the Alaska Department of Environmental Conservation (ADEC) database. It is listed as "Cleanup complete." It is also listed as an UST site. The listing shows that one 2,000-gallon gasoline tank exists on the property, but that it is permanently out of use.

There are few facilities within a radius of 1 mile or less of the headquarters site that have known hazardous materials. There is one SHWS within a 1 mile radius of the site, one State LUST site within 0.5 miles of the site, three State UST sites within 0.25 miles of the site, and one Small Quantity Generator of hazardous waste within 0.25 miles of the site. The Generator is listed as currently not generating hazardous waste (U.S. EPA RCRA-NonGen).

3.2.5 Energy Consumption

Sources of energy consumption at the existing triplex are typical of residential energy use: electricity, fuel, etc. The triplex's oil furnace accounts for the majority of the energy consumed by the triplex. The building is more than 50 years old and is therefore not as energy efficient as a modern construction.

3.2.6 Climate Change

Scientific evidence confirms the earth is undergoing a change in climate, and this is largely due to the combustion of fossil fuels and other human activities that increase atmospheric concentrations of greenhouse gases. In 2007, the City of Kodiak collected data for a baseline emissions inventory for municipal operations. Facilities such as the Police Station and the Public Works Department main building were among the most significant municipal sources of emissions; local government emissions typically fall between only two to five percent of overall community emissions (City of Kodiak 2008).

3.3 Biological Environment

3.3.1 Wetlands

Triplex Site

According to the national wetland inventory there are no wetlands on the triplex site (URS 2012a). The triplex itself is built on fill material, and stormwater flows to the western and southern base of the fill. None of the vegetation on the property is commonly associated with wetlands, and the Service does not believe there are any wetlands on the property. A formal jurisdictional determination was not requested from the U.S. Army Corps of Engineers.

Headquarters Site

According to the national wetland inventory there are no wetlands on the headquarters site (URS 2012b). The soil that was described for the construction site is not indicative of wetlands and it was concluded from a site visit (URS 2012b) that there are no wetlands on the site. A formal jurisdictional determination was not requested from the U.S. Army Corps of Engineers.

3.3.2 Vegetation

Existing Triplex Site

The existing triplex is in a densely populated neighborhood with generally highly disturbed vegetation. The facility has backyard lawns. There is approximately 300 feet or more of undeveloped space between the building and East Rezanof Drive which runs south of the triplex. The undeveloped space surrounding the building and lawns is somewhat larger in comparison to the space surrounding other buildings in the area except for the lot just north of the triplex, which is not as extensively used. These undeveloped areas contain native grasses, shrubs, and trees such as bluejoint grass, Sitka alder, salmonberry, and Sitka spruce.

Headquarters Site

The proposed construction site is covered with a dense stand of Sitka spruce with a mossy groundcover and some elderberry, alder, and salmonberry in more open areas. This vegetation type is common

around the City of Kodiak (Fleming and Spencer 2005, U.S. Fish and Wildlife Service 2008). It is also dominant in the remainder of the headquarters parcel and on the land surrounding the parcel, which is in a relatively undeveloped area.

3.3.3 Birds

A total of 242 bird species have been observed in the Kodiak Archipelago (U.S. Fish and Wildlife Service 2008). Among them are waterfowl, marsh and waterbirds, shorebirds, marine birds, raptors, upland game birds and passerines. Bald eagles are some of the most prominent birds on Kodiak; about 600 nesting pairs use the Kodiak Refuge alone which is likely one of the highest densities in North America for a resident population of nesting bald eagles.

Existing Triplex Site

Birds do not routinely use the area of the building (+/- 20 feet). There are both resident and migratory birds in the general vicinity of the site; however, the building is in a highly developed area and would only support species which tolerate a relatively high degree of disturbance. Most sightings are from birds that merely fly over the area; no nesting has been recorded. No bald eagles have been observed nesting within 660 feet (USFWS 2007) of the triplex. No formal bird survey has been done in the vicinity of the triplex.

Headquarters Site

This undeveloped site is loosely surrounded by the buildings of the headquarters complex on the south side and by a large road (West Rezanof Drive) in the north. The site is largely dominated by native habitat and probably supports foraging use and may support nesting use by fox sparrow, golden-crowned sparrow, hermit thrush, gray-cheeked thrush, varied thrush, winter wren, Wilson's warbler, yellow warbler, orange-crowned warbler, yellow-rumped warbler, black-capped chickadee, red-breasted nuthatch, downy woodpecker, brown creeper, golden-crowned kinglet, ruby-crowned kinglet, pine siskin, pine grosbeak, red crossbill, and white-winged crossbill (Bill Pyle, Supervisory Biologist, Kodiak Refuge, pers. comm.). Boreal owl and northern goshawk may use the site for foraging purposes. Waterfowl and shorebirds are sometimes spotted flying over the area due to the proximity of Lake Louise and the Buskin River. No bald eagles are known to nest within 660 feet (USFWS 2007) of the headquarters complex. No formal bird survey has been done at the proposed construction site.

3.3.4 Land mammals

Six species of land mammals occur naturally on Kodiak Island: brown bear (*Ursus arctos middendorffi*), red fox (*Vulpes vulpes*), river otter (*Lutra canadensis*), short-tailed weasel (*Mustela erminea*), tundra vole (*Microtus oeconomus operarius*), and little brown bat (*Myotis lucifugus*). However, thirteen species of nonnative land mammals were introduced to the Kodiak Archipelago during the 20th century. Nine species established populations, including: Sitka black-tailed deer (*Odocoileus hemionus sitkensis*), mountain goats (*Oreamnos americanus*), Roosevelt elk (*Cervus Canadensis roosevelti*), reindeer (*Rangifer tarandus*), beaver (*Castor canadensis*), red squirrel (*Tamiasciurus hudsonicus*), showshoe hare

(*Lepus americanus*), muskrat (*Ondatra zibethica*), and marten (*Martes americana*). Limited populations of arctic ground squirrel (*Spermophilus parryii*) and Norway rat (*Rattus norvegicus*) have also become established.

Existing Triplex Site

The triplex site is likely used only by mammals which tolerate a high degree of disturbance. Rats are known to occur in the City of Kodiak and have apparently used the triplex building, as evidenced by rat feces in the fiberglass insulation in the floor joist cavities. Mammals that may use the lawns and backyard are tundra vole and short-tailed weasel.

Headquarters Site

Mammals most likely to occur at the headquarters site are tundra vole, snowshoe hare, the occasional short-tailed weasel, Sitka black-tailed deer, and little brown bat; and rarely brown bear. Voles and weasels may use the area for foraging and to breed, deer may use it for foraging. Brown bears are only transitory in the area and are most likely seen on the headquarters complex between April and November (Bill Pyle, Supervisory Biologist, Kodiak Refuge, pers. comm.).

3.3.5 Threatened and Endangered Species

Threatened species that occur in the general area of the City of Kodiak are Steller's eiders (*Polysticta stelleri*), and northern sea otter (*Enhydra lutris kenyoni*). Steller Sea Lions (*Eumetopias jubatus*) are endangered, and the Kittlitz's murrelet (*Brachyramphus brevirostris*) is on the candidate species list. None of these species occur on or near either the triplex or headquarters sites, and neither site contains critical habitat for any of these species.

3.4 Human Environment

3.4.1 Land Use

Existing Triplex Site

The triplex building was constructed by the United States Military in 1959. The lot and building were transferred to the Forest Service in the 1970s and then officially transferred again to the Service in 2004. The Service, though, had been using the triplex as staff housing since the early 1980's under an agreement with the Forest Service. The lot is bordered by Upper Mill Bay Road and mixed use residential and retail development buildings to the north, East Rezanof Drive to the south, and mixed residential and retail development to the east and west. The site is zoned 'PL', a Public Lands District. According to Title 17 Zoning of the Kodiak Island Borough Code, this district encompasses land within the urban and suburban areas of Kodiak Island Borough that are owned and used by public entities and native corporations, for use by the public, such as schools, parks, government buildings, and other public

uses. The areas around the triplex lot are zoned primarily for public use lands, as well as two-family residential and multi-family residential areas. Some nearby parcels are also zoned as business.

Headquarters Site

The headquarters complex is located on land owned by USCG under authorization of a land permit. The proposed construction site is bordered by the headquarters complex on all sides. Further to the north, the headquarters complex is bound by West Rezanof Drive and Lake Louise. To the south and southeast of the Headquarters complex is the Buskin River State Recreation Area, which includes a public use campground. All land surrounding the Headquarters complex is owned by the USCG. The property is zoned 'CN', a conservation zoning district that seeks to maintain open space areas, while providing for single-family residential and limited commercial land uses.

3.4.2 Economy

The economy of Kodiak is predominantly resource-based, depending on fish harvesting and seafood processing as its largest basic industry. The seafood processing industry provides 20% of the employment in Kodiak. Other significant sectors of the economy are government, tourism, and the aerospace industry. Government (not including the USCG) constitutes 19% of the Kodiak economy by employment. The Coast Guard alone accounts for 16% of Kodiak's employment (Kodiak Chamber of Commerce 2012). The Kodiak Launch Complex, the largest USCG station on Kodiak Island, lies just south of the city; it is a \$38 million low-Earth orbit launch facility on 27 acres that is located at Cape Narrow near Chiniak, Alaska (LCG 2012). Unemployment in Kodiak is highly volatile, ranging from less than 5.5% to a little over 12% in 2011, due to the seasonal nature of the fishing industry. The average annual unemployment rate in 2011 was 7.0%. The city has 2,178 housing units, and 2,102 households with an average of 2.82 persons. The median household income is \$62,574 (Kodiak Chamber of Commerce 2012).

3.4.3 Transportation/Access

Kodiak is accessible by air and sea. The state-owned Kodiak airport has three paved runways and Kodiak Municipal Airport offers a smaller paved runway. Three airlines serve Kodiak with several daily flights, and a number of air taxi services provide flights to other communities on the island. The Alaska Marine Highway System operates a ferry service between Kodiak and Homer. The Port of Kodiak includes 2 boat harbors with 600 boat slips and 3 commercial piers - the ferry dock, city dock, and container terminal. Within the City of Kodiak, transportation occurs mostly by private vehicle.

Triplex Site

The triplex site is in a residential and commercial area of the City. Access to the site is from Upper Mill Bay Road – a standard feeder road in the residential subdivision in which the triplex is located. Upper Mill Bay Road intersects with East Rezanof Drive, which is a main arterial road that accesses mixed residential and retail developments.

Headquarters Site

Access to the headquarters site is via West Rezanof Drive, a main arterial road that extends from the City of Kodiak south to Narrow Cape (approximately 45 miles), roughly following the coast line. Buskin River Road intersects with West Rezanof Drive and provides access to the Refuge headquarters.

3.4.4 Cultural Resources

The Kodiak Archipelago and the surrounding regions of Prince William Sound are home to the Alutiiq. On the Kodiak Archipelago, dense prehistoric populations left large accumulations of cultural debris that have resisted decay in the region's persistently cool and wet environment. This has attracted archaeologists to the archipelago, making it one of the more extensively studied regions of Alaska (USFWS 2008). Archeologists have located more than 850 cultural resource sites in the Kodiak Archipelago or about four percent of all known archaeological sites in Alaska. Prehistoric sites include ancient shell-filled villages that dot the coast, burial caves in the mountains, stone weirs to trap salmon, petroglyphs, ridge-top cairns, stone quarries, and ancient trails (USFWS 2008). The City of Kodiak also holds historic sites, for example the Holy Resurrection Russian Orthodox Church.

Existing Triplex Site

In 2012, the Service prepared a Determination of Eligibility for the triplex building in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended December 12, 2000, and 36 CFR 800. The triplex is not associated with any historical event or significant person and does not embody the distinctive characteristics of a type, period, or method of construction, nor does it represent the work of a master or possesses high artistic value. It also does not have any research or information potential important to prehistory or history. The Determination of Eligibility concludes that the triplex building is not eligible for inclusion into the National Register of Historic Places.

Headquarters Site

A July 1951 aerial photograph shows at least one small structure at the present location of the site and several more structures throughout the current headquarters complex. The structures appeared to be mobile or connex style buildings that are no longer in existence. An aerial photograph from 1984 shows a remaining footprint of the structure at the site. The footprint has disappeared on current aerial photographs. No known cultural resources are present at the headquarters site. A cultural resource survey has not been conducted at the site at the time this environmental assessment was written, but a survey is expected to be completed before construction activities start at the project site.

3.4.5 Subsistence

Subsistence uses are defined in Section 803 of the Alaska National Interest Lands Conservation Act (ANILCA) of 1980 as "the customary and traditional uses by rural Alaska residents of wild, renewable resources for direct personal or family consumption as food, shelter, fuel, clothing; byproducts of fish and wildlife resources taken for personal or family consumption, for barter, or sharing for personal or family consumption; and for customary trade." Subsistence activities are not just a way of obtaining

food; they are an important mechanism for maintaining cultural values such as kinship, community, respect for elders, hospitality, sharing resources, and the passing of values to younger generations (USFWS 2008).

Residents of Kodiak Island rely on and harvest an abundance and diversity of fish, game, invertebrates, and plants for subsistence purposes. Most subsistence activities occur near communities, along the coast, and on the lower reaches of major rivers where lands are often in private ownership. Subsistence resources for the City of Kodiak include fish (e.g., Coho and Sockeye Salmon, Dolly Varden), land mammals (e.g., deer, snowshoe hares), marine mammals (e.g., seals, sea lions), waterfowl (e.g., mallards, green-winged teal), upland game birds (e.g. ptarmigan), bird eggs (e.g., from large gulls), invertebrates (e.g., clams, crabs, shrimp), and plants (e.g., berries, kelp, wood) (Naves 20012, Alaska Department of Fish and Game 2013 [data mainly from early 1990's]). In 1993, City of Kodiak residents harvested an estimated 151 pounds of subsistence resource per capita (Alaska Department of Fish and Game 2013), and 99 percent of the population used subsistence resources.

Neither the triplex site nor the headquarters site is eligible for subsistence use under Federal rules. There are no subsistence uses on either site.

3.4.6 Environmental Justice

Approximately 11.4% of the population of the Kodiak Island Borough has an income below the poverty line; the percentage is 14.6 for the City of Kodiak. Both values are a little higher than the Alaska State average, which is 9.5%. The city's population is 13.2 percent American Indian or Alaska Native; 55.3 percent white; 7.3 percent Hispanic, 0.7 percent black; 19.6 percent Asian; 0.6 percent Pacific Islander; and 7.6 percent of the local residents are of multi-racial backgrounds.

3.4.7 Noise

Existing Triplex Site

At the triplex site, the noise level is typical of noises in an average small town. The main source of noise is likely motorized vehicle traffic from surrounding streets. Other contributions may include noise from aircraft at the Inner Harbor Seaplane Base and from boats at the nearby harbor. The City of Kodiak does not have a noise ordinance.

Headquarters Site

Because the general area around the site is somewhat more remote than the triplex site, it is expected that average noise levels are lower. Sources of noise are likely motorized vehicle traffic on West Rezanof Drive and aircraft traffic to and from Kodiak Airport. There is also frequent noise disturbance from large aircraft landing and taking off from the USCG air station and from USCG training exercises with helicopters.

3.4.8 Visual

Existing Triplex Site

Directly north of the site is a building and large satellite owned by AT&T. To the west of the triplex are residential housing units. The lot upon which the triplex sits is larger than most of the surrounding residential lots and therefore, there is more vegetation on this site than on nearby parcels.

Headquarters Site

The site upon which the new residences would be built is undeveloped forest land. Forested areas are interspersed with urban development such as the Refuge's headquarters building and shop complex. There are expanses of similar vegetation across the larger USCG parcel and on adjacent lands. The state airport is about 2000 feet south of the headquarters.

4. ENVIRONMENTAL CONSEQUENCES

This chapter describes and compares the effects of the two alternatives on the physical, biological, and human environments described in Section 3. It is organized by alternatives, identifying effects of the "no action" alternative on the different resources first, and then the effects of the Service's preferred alternative. Effects are direct unless otherwise mentioned. Cumulative effects are summarized at the end of each alternative.

4.1 Alternative A – No Action Alternative

4.1.1 Physical Environment

4.1.1.1 Air Quality

This alternative would have no effect on air quality at either site.

4.1.1.2 Water

Existing Triplex Site

Both TPECI (2006) and NORTECH (2009) confirmed that contaminated soil remained after the site was cleaned up in 2006. According to TPECI (2006), contamination does not appear to be impacting groundwater at the site. However, the full extent of the remaining contamination is unknown and could pose a public safety hazard if it compromises groundwater quality.

Headquarters Site

Under Alternative A, the headquarters site would be left undeveloped. There would be no effect to surface or ground water at this site.

4.1.1.3 Soils

Existing Triplex Site

Under Alternative A, the current extent of soil contamination would not be addressed and the source of the contamination would not be cleaned up. Contamination might spread and extend into additional areas of soil.

Headquarters Site

Under the No Action Alternative, no soils would be disturbed at the headquarters site. There would be no effect on soils in this location.

4.1.1.4 Hazardous Materials

Existing Triplex Site

Under the No Action alternative, the hazardous materials identified at the existing triplex (such as asbestos) would not be removed and would be left in place. There would be no change over the current condition. Similarly, the contaminated soils would be left in place and un-remediated. The contamination could remain in its current extent, or it could affect additional soils and/or the groundwater. If the latter were to occur, the effects would be negligible to minor, but could pose a risk to the environment. Demolition activities would not occur, thus there would be no heavy equipment or other potential sources of hydrocarbon or other hazardous material spills beyond what exists at the three-family residence.

Headquarters Site

Under this alternative, there would be no construction activities at this site, and therefore there would be no heavy equipment or other potential sources of hydrocarbon or other hazardous materials.

4.1.1.5 Energy consumption

There would be no change to the current condition. The existing triplex building is energy inefficient due to the age and construction of the building. Leaving the triplex as it is would result in no change in energy use.

4.1.1.6 Climate Change

Under the No Action Alternative, no new greenhouse gases would be emitted at either site beyond the current condition at the triplex. The triplex would continue to emit exhaust from heating fuel and other emissions typical of residential housing.

4.1.2 Biological Environment

4.1.2.1 Wetlands

There are no wetlands at either site. The No Action alternative would have no effect on wetlands.

4.1.2.2 Vegetation

The existing vegetation would remain at both sites. This alternative would have no effect on vegetation.

4.1.2.3 Birds

There would be no habitat changes or additional human disturbance to birds. This alternative would have no effect on individual birds or bird populations.

4.1.2.4 Land Mammals

There would be no habitat changes or additional human disturbance to land mammals. This alternative would have no effect on individual mammals or mammal populations.

4.1.2.5 Threatened and Endangered Species

The No Action Alternative would have no effect on any individuals or populations of listed or candidate threatened or endangered species, nor would there be any effects on critical habitats for listed species.

4.1.3 Human Environment

4.1.3.1 Land Use

There would be no effect to land use, zoning, or land ownership under this alternative.

4.1.3.2 Economy

Economic conditions would not change under this alternative. No new jobs or economic opportunities would be created. There would be no effect on the population size of the City of Kodiak.

4.1.3.3 Transportation/Access

This alternative would have no effect on transportation and access patterns.

4.1.3.4 Cultural Resources

This alternative would have no effect on cultural resources.

4.1.3.5 Subsistence

Neither site is used for subsistence activities. Alternative A would have no effect on subsistence uses or activities. There would be no change to subsistence resources, access to these resources, or competition

between subsistence users and non-subsistence users. Subsistence opportunities in and around the City of Kodiak would continue as they are now.

4.1.3.7 Noise

There would be no noise effects associated with this alternative.

4.1.3.8 Visual

There would be no visual effects associated with this alternative.

4.1.4 Cumulative Effects of Alternative A

Existing Triplex Site

The triplex building is surrounded by several facilities that are associated with hazardous materials. If the contaminated soil at the building is not removed it would continue to add to the hazardous materials load in this neighborhood, and the contamination could spread if the contamination were to come into contact with groundwater.

Headquarters Site

There are no known cumulative effects associated with the headquarters site from Alternative A.

4.2 Alternative B – Construct Multiplex on Headquarters Site and demolish Triplex

4.2.1 Physical Environment

4.2.1.1 Air Quality

Existing Triplex Site

During demolition, dust and diesel fumes from heavy equipment would be released in the immediate area of the site. These impacts to air quality would be site-specific and temporary. Air monitoring during demolition activities is a requirement for worker safety and environmental compliance. After demolition, there would be no emissions from the facility or equipment as the site would be an undeveloped, vegetated lot. Overall, impacts to air quality in the City of Kodiak would be negligible.

Headquarters Site

During construction, heavy equipment would release diesel fumes and fine particulates as the ground is cleared and graded. The effects would be temporary (during the life of construction) and localized to the site. The effect on air quality in the City of Kodiak would be negligible. The new building, once constructed, would use electrical fired boilers for hydronic heat instead of fuel oil boilers. Therefore, as in indirect effect, emissions of the new multiplex would be reduced over that of the existing triplex.

4.2.1.2 Water

No effects to floodplains would occur because neither site is located in a floodplain.

Existing Triplex Site

Demolition of the triplex would result in ground disturbance, particularly during removal of the yet unknown amount of soil contaminated with diesel range organics. During the contaminated soil excavation conducted by TPECI in 2006 (TPECI 2006), groundwater accumulated in the excavation hole and was pumped through an activated carbon drum into holding tanks. We anticipate that excavation of the remaining contaminated soil would again reach groundwater depth. Therefore, the potential exists for groundwater contamination with diesel range organics. Groundwater contamination could further come from spills of onsite cached fuels and oils for machinery. Also, sediment from ground disturbing activities could inadvertently be discharged into the drainage ditch that runs to the western and southern portions of the triplex parcel and into a drainage culvert, which could result in the dispersal of contaminants. The risk of any contamination would be minimized by adhering to all environmental contamination control plans required for demolition to comply with authorities having jurisdiction including federal, state, and local regulations.

Headquarters Site

During construction, sediment could be discharged into surface water or hydrocarbons could be discharged and potentially contaminate groundwater. Potential contamination would be minimized or avoided entirely by adhering to all environmental contamination control plans required for construction and complying with federal, state, and local regulations. The project would not result in discharges into the Buskin River or Lake Louise.

4.2.1.3 Soils

Existing Triplex Site

The triplex building has a footprint of approximately 3,400 square feet. It is placed on fill dirt and previously disturbed soils. These soils would again be disturbed during demolition and subsequent clean up. Additional ground beyond the building footprint may be disturbed for material storage and as space is needed for operating heavy equipment.

Contaminated soils would be removed during demolition activities, and disposed of in accordance with Alaska Department of Environmental Conservation standards (see Hazardous Materials, below). The resultant excavated areas would be replaced with clean soil or fill from a local area. By removing contaminants and containing their potential spread into uncontaminated soils, this alternative would have a beneficial effect on soils at the triplex site.

Headquarters Site

The soils at the headquarters site would be graded, compacted, and/or excavated as needed for construction of the multiplex and attendant features such as a 250 foot road extension, a 350-foot water service extension, a septic tank and drain field, back yard, and parking areas. While there would be no loss of soil, the project would change the structure and function of the soil horizons. Impacts would be limited to approximately 0.7 acres of soils - the footprint of the new facility and its attendant features (21,400 square feet) and the 9,100 square foot temporary material site. Soils in the project area are similar to soils in the surrounding forested lands. Overall, the loss of soil structure and function would be negligible.

4.2.1.4 Hazardous Materials

Existing Triplex Site

Soil contaminated with diesel range organics would be removed according to Alaska Department of Environmental Conservation standards. The excavated soil would be stored in a spill-proof enclosure to prevent diesel range organics from seeping into the ground underneath and to keep it from mixing with surface water. After the excavation is complete, the contaminated soil would be properly disposed of, which may require shipping it to a facility off the island. Remediation of any hazardous materials would reduce the number of contaminants and hazardous materials in the neighborhood immediately surrounding the site. This would be a negligible but beneficial effect.

Any environmental contamination control plans required for demolition would be implemented to comply with federal, state, and local regulations. Adhering to these plans should protect soil and groundwater at the site from contamination from fuels and oils from heavy machinery.

Aside from diesel range organics, several other potentially hazardous materials were identified at the triplex site. As with contaminated soils, the disposal of hazardous materials such as asbestos, mercury, and lead must comply with current waste disposal, handling, labeling, storage, and transportation requirements of the waste disposal facility, the U.S. Department of Transportation, and the Environmental Protection Agency (EPA). Known contaminants are expected to be abated prior to the facility demolition. Toxicity Characteristic Leaching Procedure (TCLP) testing would be accomplished by the contractor prior to demolition to determine whether lead-containing wastes must be handled as hazardous wastes. Hazardous material wastes must be disposed of in permitted landfills. Depending on the contractor's means and methods, some wastes may need to be barged to a facility off the island to comply with disposal regulations. Safely removing hazardous materials from the triplex site would result in a negligible but beneficial effect for the neighborhood in the immediate vicinity of the triplex.

Headquarters Site

Any environmental contamination control plans required for construction would be implemented to comply with federal, state, and local regulations. Fuel and oil may be stored on site for heavy machinery

used during construction. These storage sites would be within a spill-proof enclosure to minimize of the potential contamination of soil and groundwater.

Low amounts of hazardous materials typically associated with modern-day residences (e.g., smoke detectors, lights, etc.) would become established where they do not currently exist. However, with proper handling, installation, and operation, these materials would not be harmful to multiplex residents or the surrounding undeveloped lands.

4.2.1.5 Energy Consumption

The new multiplex is designed to have an exterior wall construction that would be twice as energy efficient as that of a typical new wall construction. It would also install a high-efficiency electric fired hydronic furnace. Long-term, energy consumption would be expected to be less than the current condition at the existing triplex, reducing net energy consumption.

4.2.1.6 Climate Change

Heavy machinery used during demolition and construction would contribute greenhouse gases to the atmosphere which would in turn contribute to climate change. However, compared to greenhouse gas emissions otherwise produced by the city, the amounts emitted during the demolition and construction would be quite small.

The use of a new multiplex would result in greenhouse gases emissions typical of residential housing; however, the new building would use a cleaner source of heat than the existing triplex and the building envelope would be more energy efficient. Additionally, because new staff housing would be just a few feet away from the Refuge's office, the project would reduce greenhouse gas emissions incurred from commutes to work. Overall, the multiplex would result lower levels of emissions contributing to climate change.

4.2.2 Biological Environment

4.2.2.1 Wetlands

No wetlands have been identified at either site; therefore there would be no impact on wetlands from either the demolition or the construction.

4.2.2.2 Vegetation

Existing Triplex Site

After the demolition, the triplex footprint would be graded and seeded with a mix of local grass seed. This would result in an increase in the amount of vegetative cover at the site.

Headquarters Site

After construction, all vegetation would be removed from a 21,400-foot area encompassing the building footprint and attendant features, such as parking and utilities. This would be a negative effect on vegetation; however, given that this vegetation type is typical for the area the impact would be negligible.

An additional area of approximately 9,100 feet would be temporarily disturbed during construction. The site would be reclaimed by seeding the area using a mix of local grass seed. While this would add local vegetation back into the construction site, the vegetation type would be different from the current condition and would be a substantially different seral type than the spruce forest that would surround the new facility. Alternative B would have a negative effect on vegetation at the Headquarters site. Given that the spruce forest vegetation type is typical for the area, the impact would be negligible.

4.2.2.3 Birds

Existing Triplex Site

Transient birds might be temporarily displaced during demolition activities; however, there would likely be no effect on bird populations. There are no bald eagle nests within critical distance of the triplex site, and therefore bald eagles or their nests would not be disturbed during demolition..

After demolition of the triplex and remediation of the contaminated soils, the area would be reseeded using local seed. This would increase the greenery in the area, which could in turn potentially enhance bird habitat. Over the long-term, the impact of removing the triplex could be negligibly beneficial for birds.

Headquarters Site

Birds nesting or foraging on and in the vicinity of the construction site may be disturbed in the short-term by construction activities, human presence, and construction noise; and nests and potentially young birds could be destroyed. This could be mitigated by clearing the site and/or timing construction before birds begin their nesting season and/or after the nesting season is over.

Potential nesting and foraging habitat would be permanently lost in a 21,400 foot area encompassing the building footprint and attendant features. An additional area of about 9,100 square feet would be cleared of trees and other vegetation for construction activities, and then reseeded with local grass species. The loss of habitat would result in a negative effect on individual birds at the building site, but would not have a measurable effect on bird populations.

The presence of a new house would permanently displace birds that do not tolerate a certain amount of human presence in their territory. Other bird species, such as varied thrush, would gradually return to the general vicinity of the multiplex once construction has ceased because they are relatively tolerant of human presence and the habitat changes that would result from the proposed project.

Overall, construction of the new multiplex would have a negative impact on birds. However, given that (1) this type of bird habitat is common on the headquarters complex and in areas adjacent to the complex, (2) we assume that land clearing will be conducted before bird nesting season begins, (3) that there are no rare or threatened and endangered bird species using this area, (4) that there is no critical habitat for threatened or endangered species in this and surrounding areas and (5) that no bald eagles use the area, we can conclude that impacts would be negligible for bird populations.

4.2.2.4 Land Mammals

Existing Triplex Site

The primary land mammals associated with the existing triplex site are voles, short-tailed weasel, and rats. The demolition and removal of the triplex and its associated outbuildings would remove structures that are used by rats and short-tailed weasel. This would likely result in the disturbance and displacement of individual animals, but it is not expected to have a measurable effect on populations. Remediation of contaminated soils, and subsequent reclamation activities such as grading the site, would disturb and displace voles and result in the short-term loss of vole habitat. Long-term, however, the entire site would be seeded with local grass species, thus replacing previously existing habitat and creating new habitat in areas previously occupied by buildings.

Headquarters Site

Under Alternative B, habitat for land mammals would be permanently lost on an area of approximately 21,400 square feet (the footprint of the building and attendant features). However, this area is rather small compared to the remaining amount of the same habitat type at the headquarters complex and adjacent to it. The project could result in the permanent loss of habitat for small mammals, such as voles, and could also displace individuals of other species, such as deer. Short-term, noises from heavy machinery and human presence could temporarily displace transient and foraging mammals from the area. Once construction is finished, the presence of a new building with its associated human activities might permanently displace some mammals such as deer that do not tolerate a certain amount of human presence. Others such as voles and short-tailed weasel would gradually return to the general vicinity of the multiplex once construction has ceased.

Overall, construction of the new multiplex would have a negative impact on individual mammals, but there would be no measurable effect on mammal populations because (1) this type of habitat is common on the headquarters complex and in areas adjacent to the complex, (2) there are no rare or threatened and endangered mammalian species using this area, (3) there is no critical habitat for threatened or endangered species in this and surrounding areas, and (4) the amount of habitat lost would be less than ½ acre.

4.2.2.5 Threatened and Endangered Species

Demolition and construction activities would have no effect on any individuals or populations of listed or candidate threatened or endangered species, nor would there be any effects on critical habitats for listed species.

4.2.3 Human Environment

4.2.3.1 Land Use

Existing Triplex Site

The removal of the existing triplex residential facility would result in an undeveloped parcel that better complies with the “public land” zoning of the area. There would be no change in land ownership expected.

Headquarters Site

The construction of a new multi-family residence at the headquarters site would comply with the area’s existing land use (conservation zoning area). There would be no change in land ownership.

4.2.3.2 Economy

The proposed demolition and construction activities could result in as many as 25 jobs over the life of the project. These jobs would be temporary in nature and would not occur at the same time. Given the temporary nature of the construction and demolition work, it would be unlikely that anyone hired for the project would permanently move themselves and their families to the City of Kodiak. Therefore, the project would have no effect on the population size of the City of Kodiak. Should the project fill the temporary positions with local hires, the money earned by the workers would likely stay in the Kodiak Island Borough for goods, services, and housing. The project would result in a negligible beneficial effect to the economy of the area.

4.2.3.3 Transportation/Access

During construction and demolition activities, heavy equipment and support vehicles (such as pick-up trucks) would repeatedly access each of the sites. This would result in minor change to traffic load and congestion on some access roads and on main arterials. Effects would be short-term (during the construction and demolition phases of the proposed project) and would be most pronounced on feeder and access roads, thus affecting people living and working in the immediate vicinity of the project sites. The main arterials in the City of Kodiak are designed to handle the level of traffic and types of vehicles that would be required for the project, and there would be no measurable effect on transportation and access in the City of Kodiak.

4.2.3.4 Cultural Resources

There are no known cultural resources on the triplex site, and demolition and remediation of the triplex site would have no effect on cultural resources. There are no known cultural resources on the headquarters site; however, it is possible that artifacts could be unearthed during the construction of the multiplex. Should this occur, construction activities would cease and the State Historic Preservation Officer (SHPO) would be contacted. The Service and the contractor would follow the direction and procedures provided by the SHPO.

4.2.3.5 Subsistence

Neither site is used for subsistence activities. Alternative B would have no effect on subsistence uses or activities. The proposed project would not affect subsistence resources, change access to these resources, or increase competition between subsistence users and non-subsistence users. Subsistence opportunities in and around the City of Kodiak would continue as they are now.

4.2.3.6 Noise

Existing Triplex Site

Short-term, demolition activities would result in an increase in noise on the property and in the immediately surrounding neighborhoods. Effects could be mitigated by limiting the hours in a day demolition activities can be conducted. While such limitations could result in the project taking longer, local residents would likely appreciate having reliable periods without the additional noise.

Long-term, the triplex site would change from a three-family residence to an undeveloped, vegetated lot. Thus, long-term the project would result in a negligible lessening of noise from the property and surrounding neighborhood.

Headquarters Site

Short-term, new construction noise would be introduced into an area without such noise. The sounds would affect people working and living in the vicinity of the Refuge's headquarters and shop complex. Effects could be mitigated by limiting the hours in the day during which construction activities could occur.

Long-term, the headquarters site would have three to four new families residing in an area with only a few such residences. There would be a slight increase in noise due to such daily activities as driving vehicles, dogs barking, children playing, etc. The effects would be negligible to minor in the immediate vicinity of the headquarters site.

4.2.3.7 Visual

Existing Triplex Site

Post-demolition, increased greenery at the triplex site would result in a more natural appearing property which could be viewed as a minor, positive effect for people frequenting the area.

Headquarters Site

Construction of the new multiplex would change a forested area to one with a building and associated man-made facilities. The area around the new structure would remain forested in a manner similar to other developments at this location (e.g., the Refuge headquarters, shop, and other residences). Overall, the new facility would blend in well with the existing buildings at the headquarters complex.

4.2.4 Cumulative Effects of Alternative B

The construction and demolition activities would release greenhouse gases into the atmosphere. The amount would be relatively small, but it would be additive to all other emissions produced by the City of Kodiak and surrounding areas.

Existing Triplex Site

The triplex building is surrounded by several facilities that are associated with hazardous materials. Removing the triplex and the contaminated soil underneath and around it would result in the incremental reduction to the hazardous materials load in this neighborhood; it would also reduce the general risk of groundwater contamination.

Headquarters Site

Construction of a new building at the headquarters complex would add to the ongoing, incremental loss of undeveloped land and habitats for birds and mammals. These effects would be cumulative to other projects and activities in the City of Kodiak and the greater Kodiak Island Borough.

4.3 Section 810 Analysis

4.3.1 Introduction

ANILCA Section 810 requires that when the Service contemplates “whether to withdraw, reserve, lease, or otherwise permit the use, occupancy, or disposition of public lands,” it must evaluate the effects of such uses on subsistence uses and needs. If the Service determines that a significant restriction is likely to occur, they must follow the Section 810 notice and hearing requirements. The Service may proceed with an action that would significantly restrict subsistence uses only if it first determines:

- such a significant restriction of subsistence uses is necessary, and consistent with sound management principles for the utilization of the public lands;
- the proposed activity would involve the minimal amount of public lands necessary to accomplish the purposes of such use, occupancy, or other disposition; and
- reasonable steps would be taken to minimize adverse effects upon subsistence uses and resources resulting from such actions.

A finding that the proposed action or other alternatives may significantly restrict subsistence uses imposes additional requirements, including provisions for notices to the State and appropriate regional and local subsistence committees, a hearing in the vicinity of the area involved, the making of a determination as required by ANILCA Section 810(a)(3), or prohibition of the action.

4.3.2 Analysis

The Service is proposing to build staff housing on lands owned by USCG and used by the Service under authorization of a land permit. Therefore we must evaluate the potential effects of the proposed activity and use on subsistence uses and needs. The following three factors were considered in this Section 810(a) analysis:

- A reduction in subsistence uses due to factors such as direct impacts on the resource, adverse impacts on habitat, or increased competition for the resources.
- A reduction in the subsistence uses due to changes in availability of resources caused by an alteration in their distribution, migration, or location.
- A reduction in subsistence uses due to limitations on the access to harvestable resources such as physical or legal barriers.

Neither the triplex site nor the headquarters site is eligible for subsistence use under Federal rules, and neither of the two alternatives presented in this environmental assessment propose any types of uses or developments that would pose risks to subsistence resources or subsistence uses. There would be no direct, indirect or cumulative impact to subsistence resources. No proposed or foreseen significant restriction of subsistence uses and needs is envisioned for either of the alternatives. There would be no effect to subsistence uses or resources, and traditional access and subsistence use opportunities would continue as they are now and within current regulations and policies.

4.3.3 Conclusion

The Service has determined in this Section 810(a) evaluation that neither of the alternatives, nor their cumulative effects would significantly restrict subsistence use or the availability of resources in the project vicinity or within the greater area of the City of Kodiak. Neither of the alternatives would increase competition for resources nor restrict access to harvestable resources.

4.4 Environmental Justice

The Service is required to identify and address, as appropriate, any disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations (Executive Order 12898, February 11, 1994, amended January 30, 1995, by Executive Order 12948). The City of Kodiak is 45% non-White and is therefore a minority community; 14.6% of the city's population is below the poverty line. We do not know the socio-economy of the neighborhood surrounding the existing triplex, but it is assumed to be the same as the broader community: 45% non-White and 14.6% below poverty.

The two alternatives analyzed in this environmental assessment primarily affect Service employees and their families residing in the existing triplex facility, and not the broader public. These employees have good paying jobs and are not below the poverty line; Service families can be of any ethnic background.

Alternative A does not impose any disproportionately high or adverse human health or environmental effects on low-income populations. It is possible, however, that contamination at the triplex site could find its way into ground water over the long-term, especially if the site is not remediated. If groundwater contamination were to occur, it would affect the neighborhood surrounding the existing triplex (which is assumed to be 45% non-White), resulting in a disproportionately high and adverse effect on minority populations.

Alternative B does not impose any disproportionately high or adverse human health or environmental effects on minority populations or low-income populations. Under Alternative B, a new housing facility would be built, the existing triplex demolished, and contamination at the triplex site would be remediated. This alternative would directly benefit Service families and would also result in improvements to the neighborhood in which the existing triplex is situated.

4.5 Irreversible and Irrecoverable Commitment of Resources

The irreversible commitment of resources means that nonrenewable resources, such as cultural resources or minerals, are consumed or destroyed. The irretrievable commitment of resources represents tradeoffs (opportunities forgone) in the use and management of natural resources, including the expenditure of funds, loss of production, or restrictions on resource use.

None of the actions proposed in either of the alternatives would constitute an irreversible commitment of resources. Alternative A would result in the irretrievable commitment of approximately \$905,000 to repair the existing triplex, and additional expenditures for repairs approximately every 10 years given the age of the building. Alternative B would result in the irretrievable loss of 30,500 square feet (0.7 acres) of timber and forest lands, which would be converted to a hardened site consisting of a building, a gravel parking area, and a gravel access road, and 9,100 square feet of grass. Alternative B would also result in the irretrievable commitment of approximately \$1.6 million to construct new housing for Refuge staff.

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

Alternative A would result in the short-term commitment of funds to address the deferred maintenance actions at the existing triplex and the longer-term commitment of funds for additional repairs approximately every 10 years. Alternative B would result in the short-term commitment of funds and the loss of 0.7 acres of forested lands to construct new housing for Refuge staff.

4.7 Unavoidable Adverse Effects

Management actions proposed under Alternative A could result in health and safety concerns for the immediate neighborhood should contamination at the site reach groundwater and migrate off site. Management actions proposed in Alternative B would not result in any unavoidable adverse effects.

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APPENDIX A: ESTIMATED COST COMPARISON OF NEW MULTIPLEX AND EXISTING TRIPLEX

The cost for the new construction can be calculated from a similar project for construction of a four-plex completed in 2000 in Dillingham, Alaska. With escalation included, the current cost of the Dillingham building is approximately \$1,600,000. The new construction is assumed to have a useful life of approximately 25 years before major repairs are expected.

The rough estimate on the costs necessary to repair the existing Triplex based on current expected repairs is estimated at approximately \$905,000. Though, since this facility is over 50 years old, more repairs will continually be expected unlike that of a new construction. The current repairs expected will potentially extend the life expectancy of the building by only 10 years. At which point additional major repairs would be expected at least every 10 years. After the first 25 years, a very rough estimate of these additional repairs is approximately \$362,000. Repairs and work currently expected for the building include major foundation and structural floor repairs, complete roof replacement, contaminated soil abatement, energy and building code audits, water infiltration evaluation, heating and ventilation upgrades, window replacement, exterior envelope insulation upgrades to walls and attic/ceiling, hazardous material abatement, lighting upgrades, cosmetic renovations including bathrooms, kitchens, and various finishes. Additionally, due to the age of the building, the wet climate of Kodiak, and the fact that no original as-builts are available, there are many unknowns that cannot be anticipated and the Service would have to plan a contingency for these unexpected repairs.

The new construction planned at Kodiak is being designed to utilize Structurally Insulated Panels (SIP) that would double the energy efficiency of standard new construction and also make the wall construction virtually resistant to mold and rot in the extremely wet environment in Kodiak. Based on heating costs for the existing Triplex including a slight energy efficiency increase in the thermal envelope the cost of fuel oil over the next 25 years would be approximately \$162,500. Depending on the ever increasing cost of fuel oil in Kodiak and much of rural Alaska, this cost is only expected to increase. Based on models for the new construction utilizing electrical heat, the cost of space heat is approximately \$75,000 over the first 25 years.

Estimated Costs Comparison Over a Period of 25 Years including Heating Costs	
New Construction	Existing Triplex
\$1,675,000	\$1,429,500