US Army Corps of Engineers®
Alaska District

Draft Integrated Disposition Study and Environmental Assessment

# Saint Michael Canal
# Norton Sound, Alaska

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December 2021

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Norton Sound, Alaska

Prepared By:

United States Army Corps of Engineers

Alaska District

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# EXECUTIVE SUMMARY

The Saint Michael Canal Integrated Disposition Study and Environmental Assessment was prepared under authority granted by Section 216 of the Flood Control Act of 1970 (Public Law 91-611), which authorizes the Secretary of the Army to review operations of completed projects, when found advisable due to changed physical, economic, or environmental conditions. The study's focus is on whether federal interest exists to retain the project for its authorized purpose of commercial navigation and, if not, to determine whether the project should be recommended for deauthorization. Disposal will not be necessary, as there are no government-owned property or improvements associated with this project This study was conducted using only federal funds and there is no non-federal sponsor. Deauthorization, if recommended, would require Congressional action.

The purpose of the Saint Michael project was to provide a safe passage for riverboats travelling from the port at St. Michael into interior Alaska via the mouth of the Yukon River. Dredging a channel 100 feet wide to a depth of 6 feet below mean lower low water (MLLW) from St. Michael Bay through the canal for 6.25 miles and widening the channel at two sharp bends enabled steamboats leaving from the port at St. Michael to reach the mouth of the Yukon River with less exposure to dangerous open ocean conditions experienced along the existing route through Stephens Pass. The project was completed in 1910.

Transport modernization mostly eliminated the need to navigate up the mouth of the Yukon to supply communities in the interior, and activity at the port at Saint Michael was eventually diminished. Project abandonment was recommended in 1925 with House Document No. 467, 69th Congress, 1st Session.

The Saint Michael Canal Project was authorized by the Rivers and Harbors Act, 2 March 1907, 34 Stat. 1073 (authorizing the project as described in House Doc. 389, 59th Congress, 2nd Session) and modified by the Rivers and Harbors Act, 25 June 1910**,** 36 Stat. 630 (authorizing the project as described in House Doc. 416, 61st Congress, 2nd Session).

This project was implemented utilizing the Federal Government's powers of navigational servitude, which emanates from the Commerce Clause of the Constitution of the United States, Article I, Section 8, Clause 3. The servitude gives the Federal Government the right to use the navigable waters of the United States without compensation for navigation projects. These are non-transferrable rights and are not considered an interest in real property.

After a review of real estate interests and the initial authorizations of this project, the Corps determined that there are no real estate interests that could be transferred from

the Federal Government nor are there any constructed facilities associated with this project that could be transferred to another party. There can be no economical or commercial value associated with this project because the Federal government did not acquire real property interest or construct any physical improvements.

Two alternatives were investigated in this report: The Action Alternative and the No-Action Alternative. The Action Alternative involves a request to Congress for legislation that deauthorizes the Saint Michael Canal project. The Action Alternative is also referred to as the Future With Project (FWP) condition in this document. The No-Action Alternative, also called the Future Without Project (FWOP) condition in this document, will allow the project to continue as an unmaintained and inactive water resources project.

The Action Alternative was evaluated primarily through a qualitative analysis of regional demographic information, including population and employment/income data.

The FWP condition does have the potential for economic benefits that are not quantifiable as it would remove a potential encumbrance to any potential future development and to private or State investment into navigation systems. At this time there is no proposed development activity at the site, and none anticipated in the immediate future. Given the lack of economic opportunity in the region, any unnecessary impediments to future employment opportunities should be avoided.

Since the FWOP physical condition and FWP physical condition are identical, as the study location has reverted to its natural form and no construction project is being proposed, existing environmental conditions in the project area were documented. The integrated Environmental Assessment (EA) resulted in a Finding of No Significant Impact (FONSI).

The Action Alternative was chosen as the Tentatively Selected Plan. Considering current economic and social conditions of the project vicinity, deauthorization of the Saint Michael Canal project will likely not result in any negative social or economic impacts. There are no opportunities for this project to serve the authorized purpose or another water resources development purpose due to the change in the region’s economic conditions. Additionally, current environmental conditions indicate no adverse environmental effects or unavoidable adverse impacts associated with either the No-Action Alternative or the Tentatively Selected Plan. There are no recommended best management practices, avoidance and minimization measures, or compensatory mitigation requirements that would be enacted by the implementation of the Tentatively Selected Plan.

# LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| ADEC | Alaska Department of Environmental Conservation |
| ADFG | Alaska Department of Fish and Game |
| ADLWD | Alaska Department of Labor and Workforce Development |
| ANCSA | Alaska Native Claims Settlement Act |
| CAA | Clean Air Act |
| CFR | Code of Federal Regulations |
| EA | Environmental Assessment |
| EEZ | Exclusive Economic Zone |
| EFH | Essential Fish Habitat |
| FAA | Federal Aviation Administration |
| FONSI | Finding of No Significant Impact |
| FWOP | Future Without Project |
| FWP | Future With Project |
| NED | National Economic Development |
| NMFS | National Marine Fisheries Service |
| NOAA | National Oceanic and Atmospheric Administration |
| PL | Public Law |
| WRDA | Water Resources Development Act |
| USACE | United States Army Corps of Engineers |
| USFWS | United States Fish and Wildlife Service |

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# 1. INTRODUCTION

## 1.1 Purpose of Study

This disposition study evaluates the existing Saint Michael Canal Project located in Norton Sound, Alaska, to verify if a federal interest continues to exist for the authorized purpose of commercial navigation, based on an evaluation and comparison of the benefits, costs, and impacts of continued operation, maintenance, repair, replacement, and rehabilitation, or the lack thereof. Disposition studies are conducted using only federal funds and there is no non-Federal sponsor. If a Federal Interest no longer exists for commercial navigation, the study purpose will include determination to deauthorize the Saint Michael Canal Project and dispose of all associated properties and improvements. Disposal will not be necessary, as there are no government-owned property or improvements associated with this project.

## 1.2 Study Authority and Guidance

Section 216 of the Flood Control Act of 1970 (Review of Completed Projects) (P.L. 91-611) authorizes the Secretary of the Army to review operations of completed projects, when found advisable due to changed physical, economic, or environmental conditions. Disposition studies determine whether a project operated and maintained by the United States Army Corps of Engineers (USACE) should be deauthorized and the associated real property and government-owned improvements disposed. Section 216 states:

> *"The Secretary of the Army, acting through the Chief of Engineers, is authorized to review the operation of projects the construction of which has been completed and which were constructed by the Corps of Engineers in the interest of navigation, flood control, water supply, and related purposes, when found advisable due the significantly changed physical or economic conditions, and to report thereon to Congress with recommendations on the advisability of modifying the structures or their operation, and for improving the quality of the environment in the overall public interest."*

Section 1168 of the Water Resources Development Act of 2018 (WRDA 2018), Section 1168 (a-c) (P.L. 115-270), directs the Secretary to consider modifications that would improve the overall quality of the environment in the public interest when carrying out a disposition study for the USACE. WRDA 2018 also requires the disposition study process to be transparent and endorses the removal of project elements in partnership with other Federal agencies and non-Federal entities that are excess to the project's authorized purpose.

Although a review of the St. Michael Canal Project identified no Government property, the study was also conducted to support the objectives of the June 10, 2010 Presidential Memorandum 'Disposing of Unneeded Federal Real Estate' and Section

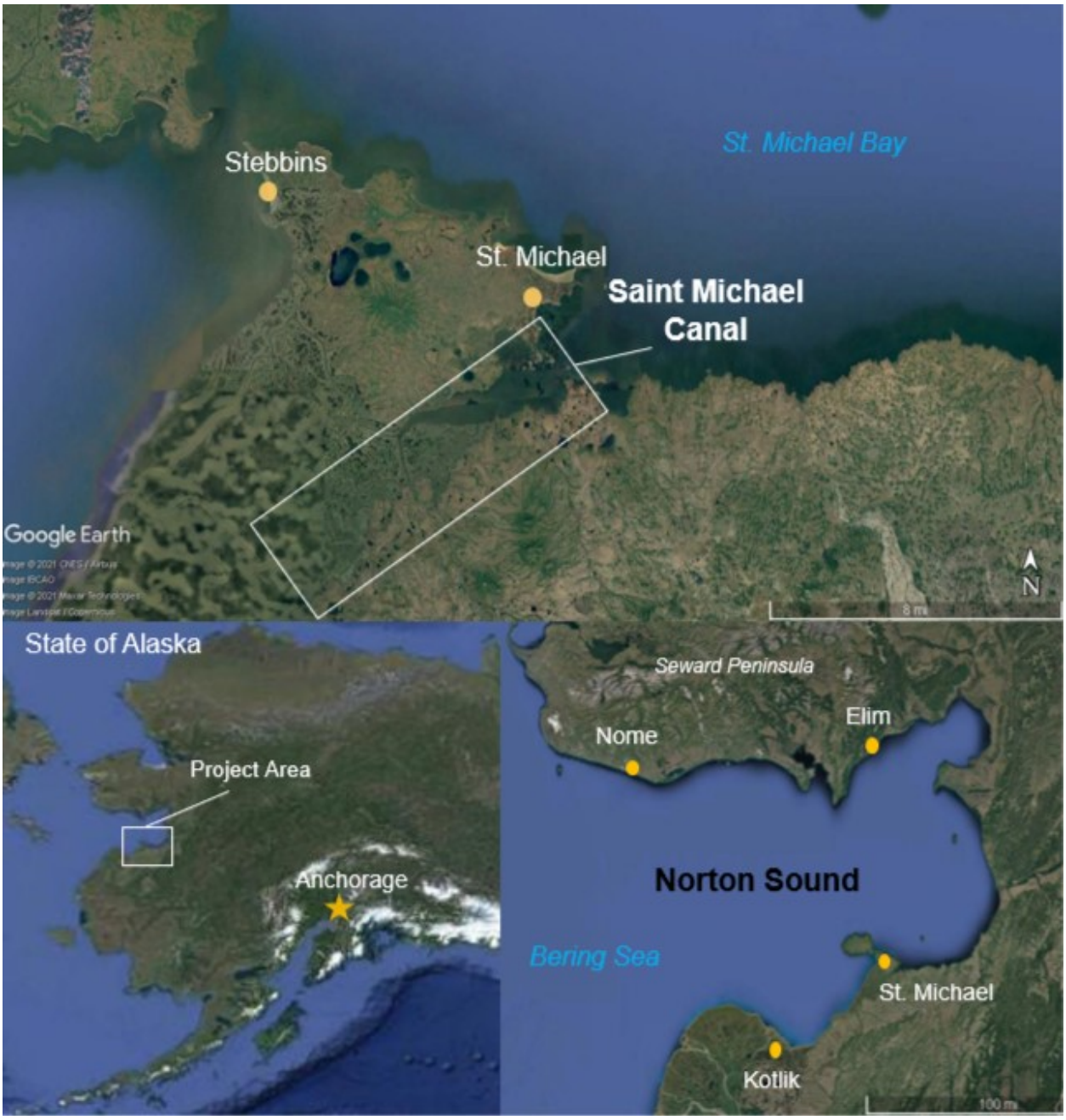
6002 of the Water Resources Reform and Development Act of 2014 (P.L. 113-121), which requires the Secretary of the Army to identify property that is excess to project needs and to notify and work with the General Services Administration (GSA) for the disposal of all excess property.

This study is being conducted under planning guidance from a memorandum titled "Interim Guidance on the Conduct of Disposition Studies" dated 22 August 2016, as well as the draft Real Estate Policy Guidance Letter No. 33 – Interim Guidance on Disposition Studies dated 28 September 2016.

### 1.3 Study Location

The study area is in the Alaska Congressional District. The Representative for this District is Don Young (R). The United States Senators from Alaska are Lisa Murkowski (R) and Dan Sullivan (R).

Saint Michael Canal is on the southeastern end of the Norton Sound inlet of the Bering Sea on the western Coast of Alaska, south of the Seward Peninsula (Figure 1 and Figure 2). The nearest town is St. Michael, located at the north border of the project boundary.

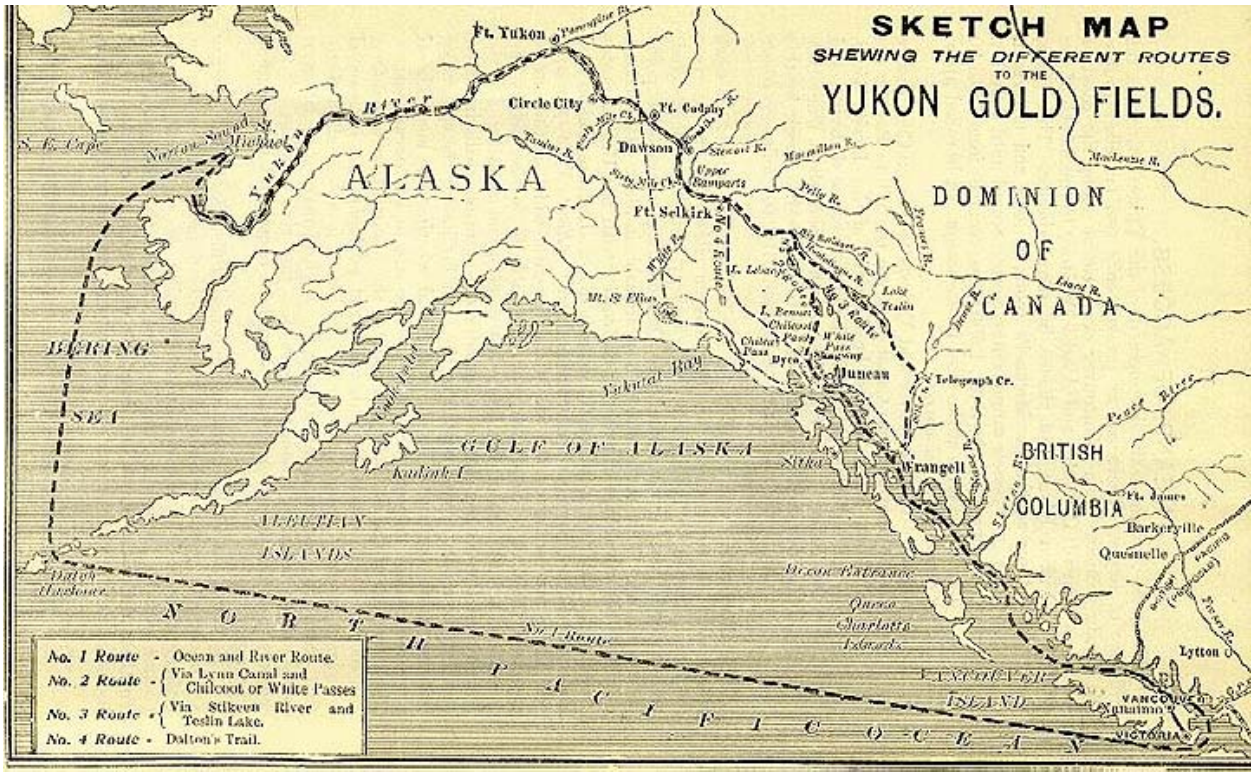

St. Michael Bay
Stebbins
St. Michael
Saint Michael Canal
Google Earth
N
State of Alaska
Project Area
Anchorage
Seward Peninsula
Nome
Elim
Norton Sound
Bering Sea
St. Michael
Kotlik


## 1.4 Project Authorization and History

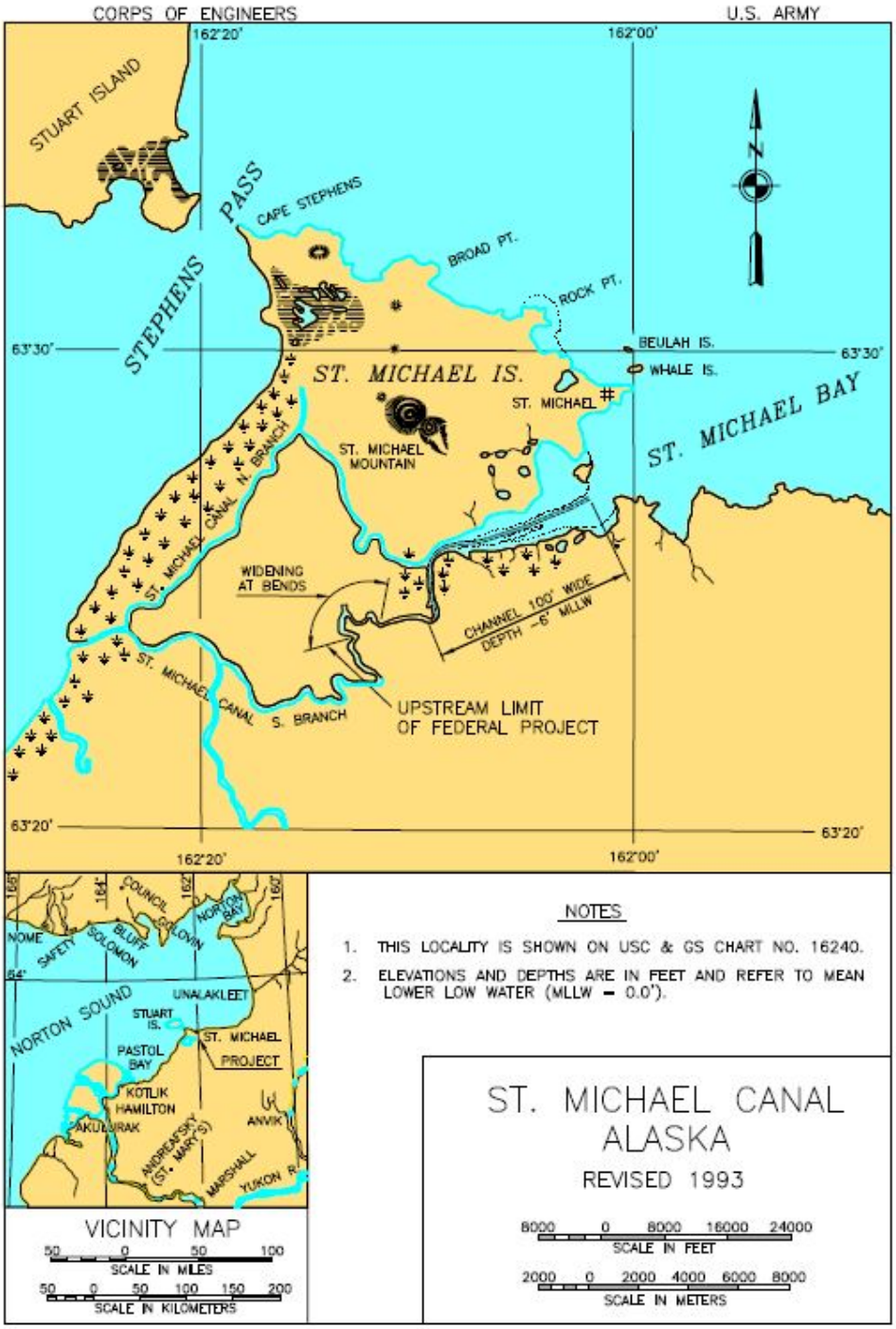
Prior to the construction of the Alaska Railroad, all goods supplied to interior Alaska were transported by steamboats on the Yukon River. Due to the shallow nature of the Yukon River delta, the only known available port where supplies could be transferred from seagoing vessels to river boats was at the village of St. Michael (Siddall, 1959, p. 367), located about 75 nautical miles northeast of the Yukon River delta.

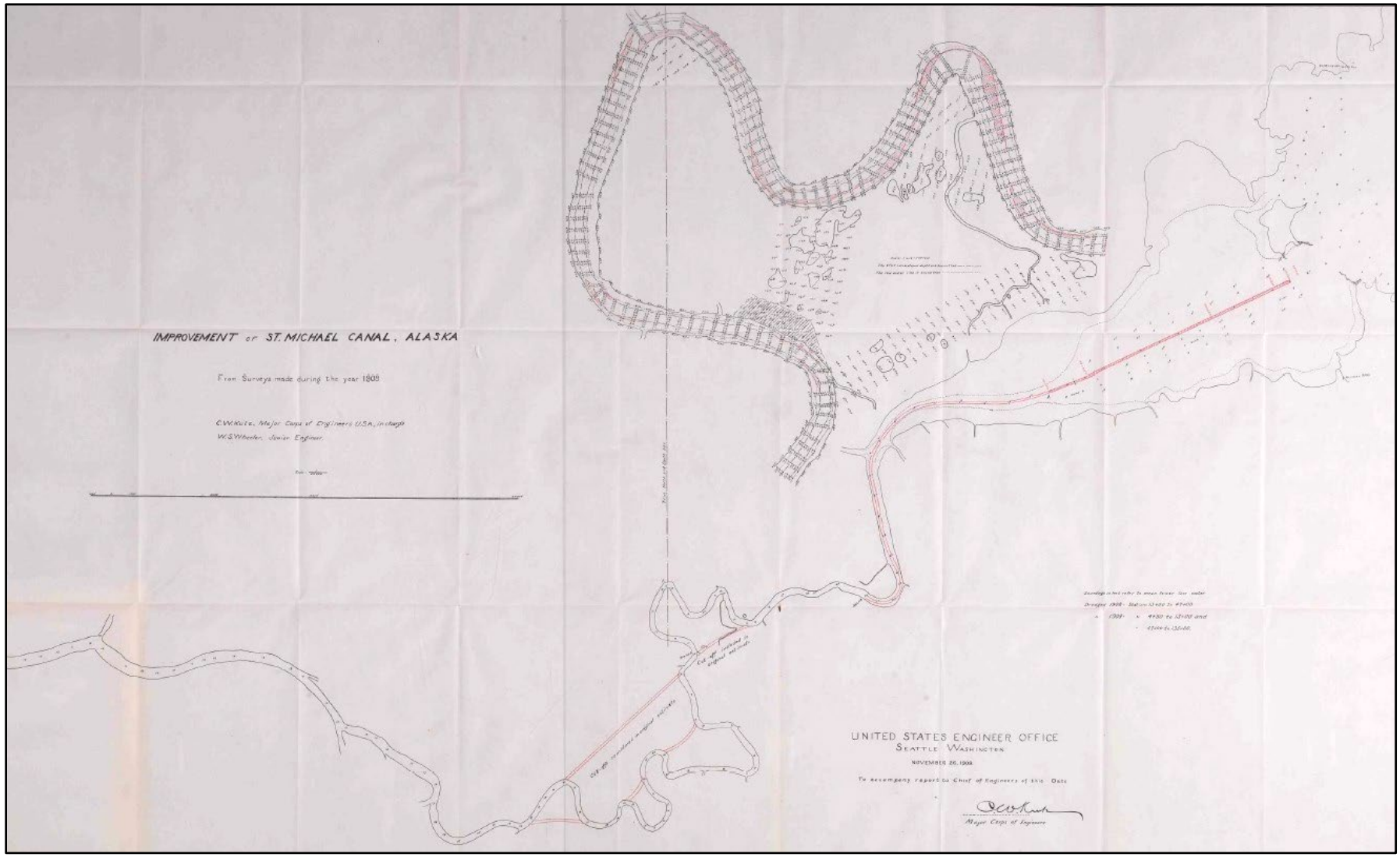
Fueled by the discovery of gold and the continued demand for fur in the 19th and early 20th centuries, economic activity on the Yukon thrived, drawing a large non-native population to the region and securing St. Michael as an important hub for the transport of supplies to the interior (Siddall, 1959, p. 367).

To reach St. Michael, river steamers travelled through Apoon Pass, one of the mouths of the Yukon River located approximately 60 miles from St. Michael (Figure 3). A steamboat's journey from St. Michael to Apoon Pass required travel through Stephens Pass, between Stewart Island and St. Michael Island, along a route exposed to open ocean for approximately 15 miles. This trip was dangerous - often involving prolonged exposure to wind, tides, sea ice and storms- exacerbated by delays in reaching the protected headwaters of the Yukon due to the delta's shallow depths (Shaw 2010).




As St. Michael's population grew to accommodate increased shipping activity, the USACE, Seattle District, responsible for engineering projects in Alaska from 1896-1905 and 1909-1921, began a dredging project through the Saint Michael Canal with the goal of enabling steamboats to avoid this dangerous strip of water (Saint Michael 1907). The Saint Michael Canal Project was authorized by the Rivers and Harbors Act, 2 March 1907, 34 Stat. 1073 (authorizing the project as described in House Doc. 389, 59th Congress, 2nd Session) and modified by the Rivers and Harbors Act, 25 June 1910**,** 36 Stat. 630 (authorizing the project as described in House Doc. 416, 61st Congress, 2nd Session). The authorization provided for dredging a channel 100 feet wide to a depth of 6 feet below mean lower low water (MLLW) from St. Michael Bay through the canal for 6.25 miles and widening the channel at two sharp bends (Figure 4 and Figure 5). The project was completed in 1910.


CORPS OF ENGINEERS
U.S. ARMY
162°20'
162°00'
STUART ISLAND
PASS
STEPHENS
CAPE STEPHENS
BROAD PT.
ROCK PT.
63°30'
BEULAH IS.
WHALE IS.
ST. MICHAEL IS.
ST. MICHAEL
ST. MICHAEL MOUNTAIN
ST. MICHAEL BAY
ST. MICHAEL CANAL N. BRANCH
WIDENING AT BENDS
CHANNEL 100' WIDE DEPTH -6' MLLW
ST. MICHAEL CANAL S. BRANCH
UPSTREAM LIMIT OF FEDERAL PROJECT
63°20'
NOME
SAFETY
SOLOMON
BLUFF
COUNCIL
GOLOVIN
NORTON BAY
UNALAKLEET
NORTON SOUND
STUART IS.
ST. MICHAEL PROJECT
PASTOL BAY
KOTLIK
HAMILTON
AKULURAK
ANDREAFSKY (ST. MARY'S)
ANVIK
MARSHALL
YUKON R.
VICINITY MAP
SCALE IN MILES
SCALE IN KILOMETERS
NOTES
1. THIS LOCALITY IS SHOWN ON USC & GS CHART NO. 16240.
2. ELEVATIONS AND DEPTHS ARE IN FEET AND REFER TO MEAN LOWER LOW WATER (MLLW = 0.0').
ST. MICHAEL CANAL
ALASKA
REVISED 1993
SCALE IN FEET
SCALE IN METERS


IMPROVEMENT of ST. MICHAEL CANAL, ALASKA
From Surveys made during the year 1909
C.W. Kutz, Major Corps of Engineers U.S.A., in charge
W.S. Wheeler, Junior Engineer.
UNITED STATES ENGINEER OFFICE
SEATTLE WASHINGTON
NOVEMBER 26, 1909.
To accompany report to Chief of Engineers of this Date
Major Corps of Engineers

The 1911 canal modifications were implemented utilizing the Federal Government's powers of navigational servitude. Navigational servitude emanates from the Commerce Clause of the Constitution of the United States, Article I, Section 8, Clause 3. The servitude recognizes the Federal Government's right to use or deepen the navigable waters of the United States for navigation projects without compensation.

Neither USACE nor the Department of the Army formally acquired a real property interest at the Saint Michael Canal since the waterway was considered the Territory of Alaska and already under federal jurisdiction. The submerged lands have been under the control of the State of Alaska since Statehood, under the Submerged Lands Act (43 U.S.C. §1301 *et seq.*).

In 1921, the USACE reassigned the Alaska civil works projects to the newly created Juneau District (Mighetto & Homstad, 1997). The completion of the Alaska Railroad from Seward to Fairbanks in 1923 provided a safer and more efficient route for passengers and freight to interior Alaska. With further modernization in automotive and airplane transportation, supplies no longer needed to be shipped into the interior via the mouth of the Yukon (Shaw, 2010). Project abandonment was recommended in 1925 with House Document No. 467, 69th Congress, 1st Session.

The current use of Saint Michael Canal is limited to seasonal seal and walrus hunting and occasional oil and gas surveys. Transportation needs in the area require deeper channels and Saint Michael Canal is no longer suitable for commercial navigation.

### 1.5 Study Lead Federal Agency

The USACE is the lead federal agency on this study.

## 2. PLAN FORMULATION AND EVALUATION

### 2.1 Problem Statement

The Saint Michael Canal Project is an unused and unmaintained Federally authorized canal, recommended for abandonment by Congress in 1925, that currently serves as a legislative obstacle for future Federal, State, or private improvements in the project area.

- Commercial navigation in the Saint Michael Canal is currently nonexistent. Current NOAA navigational charts indicate that the channel has filled in and is no longer suitable for navigation.
- The canal is unmaintained and has reverted to its natural condition.
- There is other available deep-water access to the Yukon River for the area's population.

- There is no future work planned for this project.

## 2.2 Problems, Opportunities and Constraints

Opportunities to address problems for this study include the following:

- Deauthorization of the Saint Michael Canal Project will remove legislative barriers for future improvements to the project area.

There are no known legal constraints identified thus far. The following data constraint has been identified:

- Historical population data from the 1900s may not be accurate due to the mobile nature of native villages. Communities would often move in response to food availability and may not have been present at the time of census recording.

## 2.3 Planning Goals and Objectives

The goal of this disposition study is to determine whether the Saint Michael Canal Project, a water resources development project operated and maintained by the USACE, should be deauthorized. Since there are no associated real property or Government-owned improvements for disposal, the following planning objective was established for this study:

- Determine how the current economic, social, and environmental factors in the project vicinity may impact the future of the Saint Michael Canal and compare this to the project's authorized purpose.

## 2.4 Public Scoping and Stakeholder Perspectives

Potential project stakeholders were identified and notified of this Disposition Study in July of 2020 via email. None of the contacted parties replied to the email. A copy of the email is available in Appendix A. The following parties were contacted:

- U.S. Fish and Wildlife Service (USFWS)
- National Marine Fisheries Service (NMFS)
- Alaska Department of Fish and Game (ADFG)
- Alaska Department of Environmental Conservation (ADEC)
- Environmental Protection Agency
- Village of Kotlik
- Native Village of Saint Michael
- Native Village of Hamilton
- Stebbins Community Association
- Village of Bill Moore's Slough
- Kotlik Yupik Corporation

- Saint Michael Native Corporation
- Kongnikilnomuit Yuita Corporation
- Stebbins Native Corporation
- Calista Corporation
- Bering Straits Native Corporation
- City of Kotlik
- City of Saint Michael

There is no opportunity for a stakeholder to take ownership of government-owned improvements or real property associated with this project as there are none. No interest in maintaining the channel was expressed from any tribal or state entities contacted.

The draft Disposition Report was posted on the Alaska District's public website on December 7, 2021 with a news release announcing the 30-day period of public comment. The public comment period closed on January 7, 2022. A copy of the news release is included in Appendix A. The final Disposition Report will be published on the Alaska District's public website in compliance with Section 1168(b) of WRDA 2018.

# 3. AFFECTED ENVIRONMENT

## 3.1 Physical Environment

### 3.1.1 Climate

Climate information for the St. Michael Canal is inferred from data collected at the long-term monitoring station located at the nearby St. Michael airport. On average, the maritime subarctic summers are cool and short, while winters are long, frigid, and windy. The average high temperature typically occurs in July and is 61 degrees Fahrenheit (°F), the average low temperature occurs in January and is 1°F. Average annual precipitation at St. Michael is approximately 10 inches.

### 3.1.2 Geology/Topography

The underlying bedrock is fine-grained andesitic volcanic rock. The overlying depositional material south and west of the channel is comprised of old floodplain deposits, mostly silt and sandy silt; the overlying depositional material to the north of the channel is comprised of young floodplain deposits, mostly silt and sandy silt which includes gravel and boulders in and near the Nulato Hills (Hoare and Condon 1971).

### 3.1.3 Bathymetry

While no recent bathymetric data exists for St. Michael Canal, the National Oceanic and Atmospheric Administration's (NOAA) Navigational Chart for the region indicates that

the general area where the authorized project occurred exhibits depths of approximately six to seven feet (Figure 6).

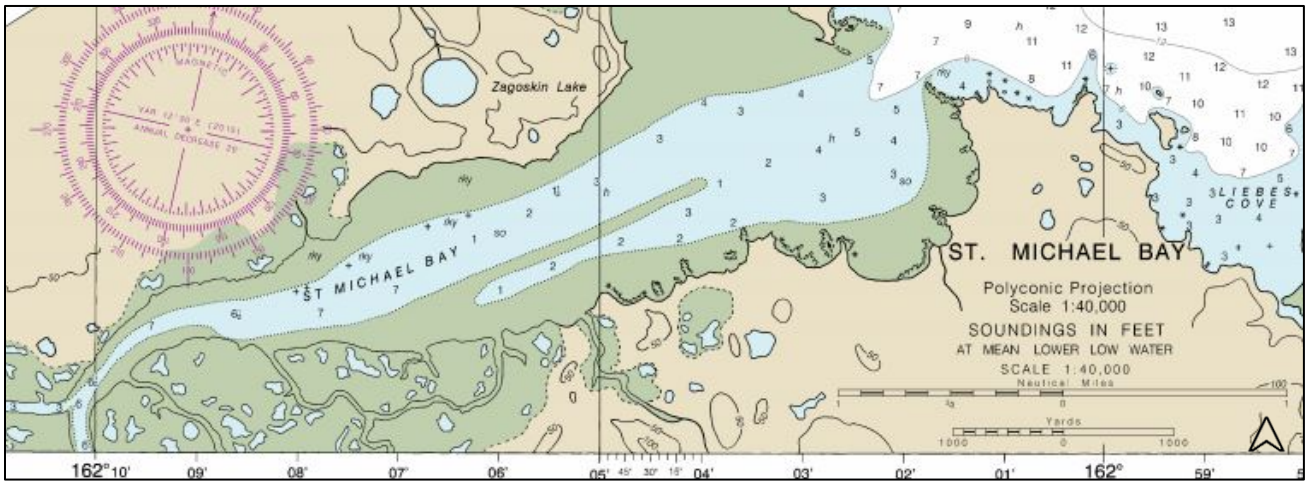



**Figure 6. St. Michael Bay to St. Michael Canal Navigational Chart**

### 3.1.4 Ice Conditions

Long-term sea ice monitoring records exist for the St. Michael region (Figure 7). Generally, sea ice begins forming in November and is fully formed by December lasting until April and May when it begins to break up. The ice-free season has been observed as lasting from July through October since 1985 (Figure 7), periods of sea ice presence are depicted in white while periods of open water are depicted in blue.

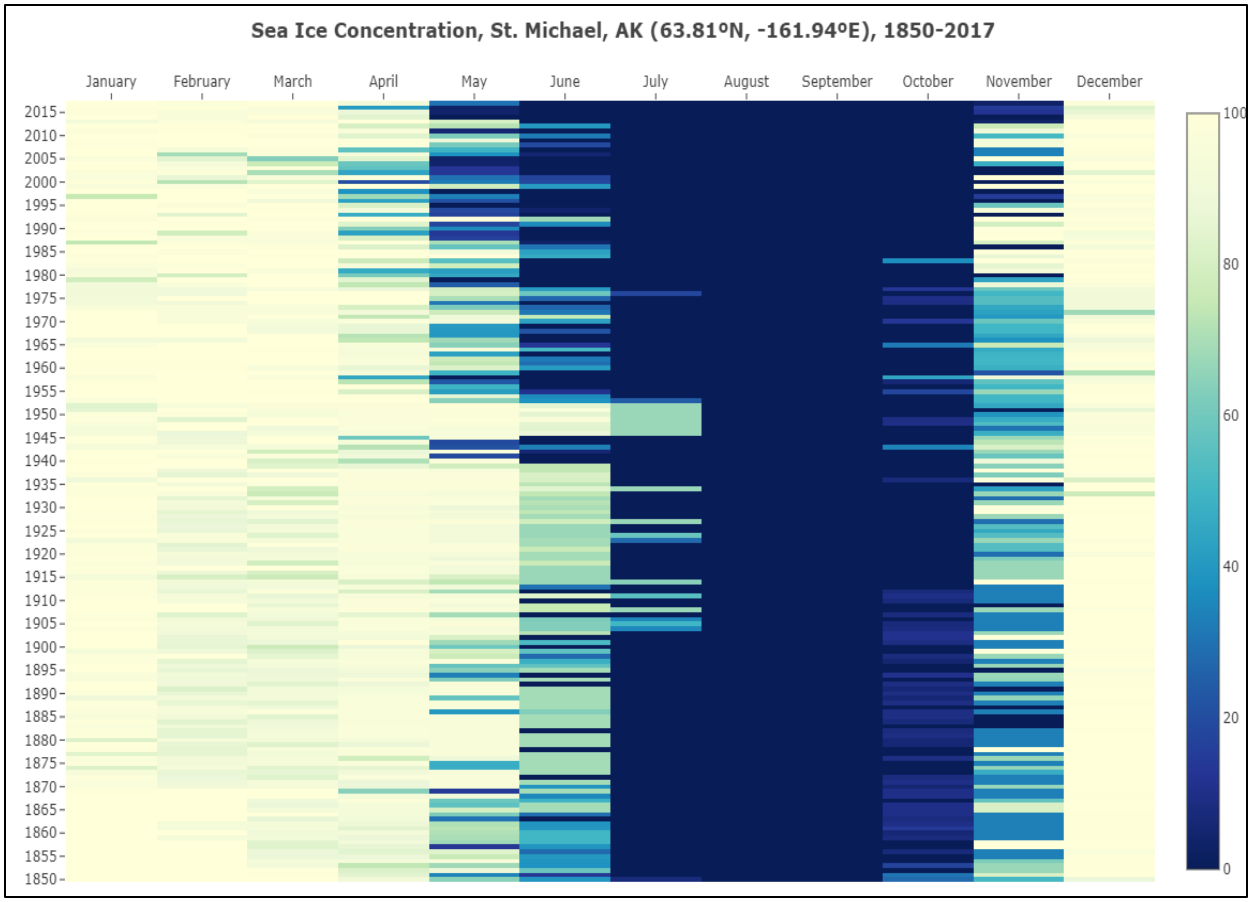



**Figure 7. Long-term Sea Ice Records from St. Michael (UAF 2021)**

Soils in the coastal plain region of St. Michael Canal are comprised of unconsolidated alluvial sands and gravels overlain by deltaic silts. Nearshore sediments are predominantly comprised of silt and sandy silt which are continually redistributed by nearshore currents and wave action (Hoare and Condon 1971).

### 3.1.6 Water Quality

Water quality in the greater Norton Sound is not listed as impaired (ADEC 2021). Ambient turbidity levels are influenced locally by precipitation events and to a greater degree by the outflow of the Yukon River.

### 3.1.7 Air Quality

The encompassing region is not in or near a non-attainment," "maintenance," or Class I area (as defined by the Clean Air Act of 1963 (CAA; PL 88-206)) for any criteria pollutants. Generally, air quality in the region of the St. Michael Canal is expected to be very good because it is in an area of rigorous atmospheric convection and relatively free of anthropogenic influences.

### 3.1.8 Noise

Ambient noise is likely dominated by natural phenomena: wind, sea ice, and at times, migratory birds or other animals. Other than those noises generated by infrequent subsistence or personal use vehicles (snowmobiles and small boat motors), and small aircraft overhead, there are no sources of anthropogenic noise in the St. Michael Canal.

### 3.1.9 Currents/Tides/Circulation/Surface Water Stream Flow

Offshore currents in Norton Sound are muted by its shallow depth profile (generally less than 70 ft deep) and low average tidal range. Tidal data for St. Michael Canal is inferred from the nearest tidal data monitoring station at Unalakleet, approximately 50 miles to the northwest. Tides observed at the Unalakleet station, station 9468333, are semi-diurnal, with tidal extremes of 8.69 ft and -2.00 ft, with the mean range of2.12 ft. There are no surface water or streamflow data for St. Michael Canal itself.

### 3.1.10 Biological Resources

The ADFG considers the entirety of the Nulato Hills to be its own distinct ecoregion (ADFG 2006). St. Michael Island and the St. Michael Canal occur along the northern margin of the southern Norton Sound portion of the Nulato Hills ecoregion which is generally characterized as the low rolling hills running north and south which form a divide between the Bering Sea and the Yukon River (Figure 8). The Nulato Hills Ecoregion exhibits avian species more common in Eurasia than the rest of Alaska (ADFG 2006). The nearshore regions of the Nulato Hills (the eastern margin of Norton Sound) are important foraging areas for a variety of whale and seal species. Similarly, the region’s network of streams and waterways support prodigious populations of anadromous and freshwater fishes.

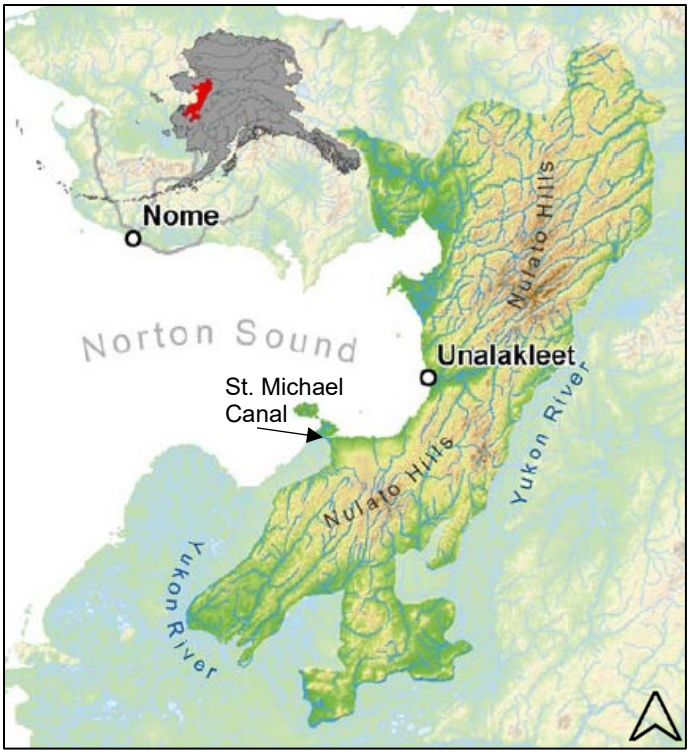



**Figure 8. Nulato Hills Ecoregion (ADFG 2006)**

### 3.1.11 Terrestrial Habitat

Terrestrial habitat along the coastal plain adjacent to the St. Michael Canal is a mixture of flat marshy lowlands interspersed by meandering streams and small lakes that terminate in highly productive tidally inundated brackish marshes (USFWS 2021, ADFG 2006).

#### 3.1.11.1 Vegetation

The vegetation community of the coastal plain primarily consists of sedge mats, moss, and low growing shrubs (FAA 2008, ADFG 2006). Vegetation communities become more variable to the south and east in response to increased elevations and differences in local climate patterns.

### 3.1.12 Birds

The St. Michael Canal occurs along the demarcation of the Yukon-Kuskokwim and Nulato Hills ecoregions. Hundreds of thousands of shorebirds utilize the coastal littoral and wetland areas of the Yukon-Kuskokwim ecoregion during the spring and fall migration periods. Documented breeding species of shorebird include bristle-thighed curlew, black-bellied plover, bar-tailed godwit, ruddy and black turnstone, red-necked phalarope, long-billed dowitcher, red knot, semipalmated and western sandpiper, and dunlin (ADFG 2006). Avian species of particular note that occur in the Nulato Hills

ecoregion include yellow and white wagtails, bluethroats, and red-throated pipits (ADFG 2006).

Similarly, the Yukon-Kuskokwim ecoregion is important for many species of waterfowl either for nesting or for foraging during migration periods. Species known to nest in the ecoregion include black brant, emperor geese, tundra swans, long-tailed ducks, scaup, common eider, spectacled eider, northern pintail, green-winged teal, and northern shovelers (ADFG 2006). The coastal areas of the Yukon-Kuskokwim ecoregion are the unquestionably the most productive goose nesting habitat in North America (USFWS 2021). Nineteen species of raptor have been recorded in the region, including golden eagles, bald eagles, and peregrine falcons (USFWS 2021).

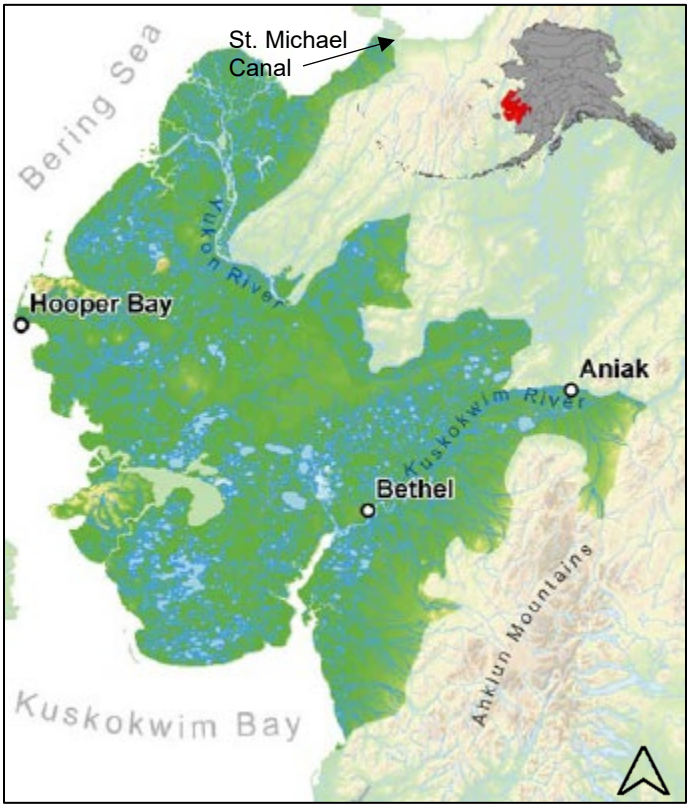



**Figure 9. Yukon-Kuskokwim Ecoregion (ADFG 2006)**

### 3.1.13 Terrestrial Mammals

Terrestrial mammals observed in the Nulato Hills ecoregion include river otters, brown bears, moose, wolves, shrews, hares, marmots, squirrels, muskrats, voles, lemmings, red fox, weasels, bats, and polar bears (ADFG 2006, FAA 2008, USFWS 2021).

### 3.1.14 Freshwater Fish

Freshwater fishes of the Nulato Hills ecoregion include Dolly Varden, Arctic grayling, Bering cisco, and Alaska blackfish (ADFG 2006). Freshwater streams and waterways in

the Yukon-Kuskokwim ecoregion provide important habitat for many anadromous fish species, including all five Pacific salmonids.

### 3.1.15 Marine Habitat

#### *3.1.15.1 Vegetation*

There is insufficient information to accurately characterize marine or brackish submerged aquatic vegetation communities in the region of the St. Michael Canal. However, physical characteristics of the nearshore zone's silty sediments and the annual sea ice scouring of the nearshore zone may preclude perennial vegetation establishment above the depth of disturbance.

### 3.1.16 Marine Fish

The waters of Norton Sound display a great diversity of marine fishes, including but not limited to saffron cod, pacific cod, Arctic cod, starry flounder, various poachers and sculpins, salmonids, pacific herring, halibut, pricklebacks, greenling, yellowfin sole, and Arctic flounder.

### 3.1.17 Marine Mammals

Norton Sound is replete with a great diversity of marine mammals. Ice seals (ringed, ribbon, spotted, and bearded seals), eared seals (northern fur seal and Steller sea lion) baleen whales (bowhead, gray, humpback, and minke), toothed whales (orca, beluga, and harbor porpoise), Pacific walrus, and polar bear. Generally, marine mammals that are observed in Norton Sound exhibit a marked seasonal presence or absence that is correlated with the presence of the sea ice. Seals and beluga whales are typically frequently observed foraging several miles inland in some of Norton Sound's larger tributaries.

### 3.1.18 Marine Invertebrates and Associated Habitat

The nearshore, intertidal, and anadromous habitat elements of the Yukon-Kuskokwim ecoregion exhibit a great diversity of invertebrate taxa, including but not limited to mollusks, crustaceans, amphipods, decapods, and insects (Thorsteinson et al. 1989). Overall, the importance of the invertebrate community as a prey base is inferred by the ecoregion's overall species richness and diversity.

### 3.1.19 Federal and State Threatened and Endangered Species

The waters of Norton Sound encompass the ranges of several Federally threatened or endangered marine mammals.

- Bearded seal (Threatened).
- Ringed seal (Threatened).
- Steller sea lion Western Distinct Population Segment (DPS) (Endangered).

- Fin Whale (Endangered).
- Humpback whale Western North Pacific DPS (Endangered), Mexico DPS (Threatened).
- North Pacific right whale (Endangered).

Federally threatened or endangered terrestrial species who's ranges overlap the Nulato Hills ecoregion include:

- Spectacled eider (Threatened).
- Polar bear (Threatened).

### 3.1.20 Special Aquatic Sites

Almost the entirety of the Yukon-Kuskokwim ecoregion is encompassed by the Yukon Delta National Wildlife Refuge and is almost entirely composed of wetlands margined by intertidal mudflats. There is insufficient information available concerning the presence or absence of coral reefs, vegetated shallows, or freshwater riffle complexes in the greater Nulato Hills ecoregion to inform the existing conditions of this document.

### 3.1.21 Essential Fish Habitat

Essential Fish Habitat (EFH) is defined by the Magnuson-Stevens Fishery Conservation and Management Act as those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity. The entirety of Norton Sound is designated as EFH under the Bering Sea/Aleutian Islands Groundfish Fisheries Management Plan and the Fishery Management Plan for the Salmon Fisheries in the Exclusive Economic Zone (EEZ) off Alaska. Additionally, there are no habitat areas of particular concern in the region of Norton Sound that encompass or encroach upon St. Michael Canal. However, most tributaries to Norton Sound also serve as important habitat for various anadromous fish species and their specific life history stages.

## 3.2 Cultural Resources

The Saint Michael Canal area is within the traditional lands of the Yup'ik Native Alaskans, who have inhabited the coastal and river systems throughout the Yukon-Kuskoskwim River areas. There were several communities in the St. Michael area prior to Russian influence, habituated seasonally; the community of St. Michael was established when the Russian-American Company founded a trading post in 1833. for The Alaska Heritage Resources Survey (AHRS) database has 64 reported sites within 5 miles from the St. Michael Canal; of these there are 3 historical properties eligible for the National Register of Historic Places (NRHP), 2 sites pending NRHP status, 9 sites that were determined not eligible for the NRHP, and the remaining 50 sites have not been evaluated. Only one site is adjacent to the canal area on the shoreline, which is

the disintegrating remains of the military dredger used to dredge the St. Michael Canal (Designated in the AHRS as SMI-00089). The site was determined to be not eligible for the NRHP, and is outside the affected area. The National Oceanic and Atmospheric Administration (NOAA)'s database has a single known shipwreck in the area, but it is approximately 10 miles north of the channel on the opposite side of the peninsula.

Under the current environmental conditions, it is likely that the SMI-00089 will continue to degrade due to natural weathering, which causes further disintegration of the physical materials, or changes in the coast that may bury or sink the remaining materials. These natural events are currently unverified, however communities throughout the region have reported such environmental issues affecting modern, archaeological, and historic sites. For this study, the two alternatives will have no impacts to the known sites in the area. The USACE archaeologists have determined under that National Historic Preservation Act of 1966, as amended, that the Action Alternative has the same effect as the No-Action Alternative. Because of this, both Alternatives result in a determination of No Potential to Cause Effects [CFR 36 § 800.3(a)(1)], and the USACE archaeologists have concluded that the area requires no further examination.

### 3.3 Population and Demographics

St. Michael is located in Norton Sound in western Alaska in the Nome Census area. It lies 125 miles southeast of Nome and 48 miles southwest of Unalakleet. The area is part of the St. Michael Native Corporation Alaska Native Claims Settlement Act (ANCSA) region and the Federally recognized tribe is the Native Village of Saint Michael.

A fortified trading post called "Redoubt St. Michael" was built by the Russian-American Company at this location in 1833; it was the northernmost Russian settlement in Alaska. The Native village of "Tachik" stood to the northeast. When the Russians left Alaska in 1867, several of the post's traders remained. "Fort St. Michael," a U.S. military post, was established in 1897.

During the gold rush of 1897, it was a major gateway to the interior via the Yukon River. As many as 10,000 persons were said to live in St. Michael during the gold rush. St. Michael was also a popular trading post for Eskimos to trade their goods for Western supplies. Centralization of many Yup'iks from the surrounding villages intensified after the measles epidemic of 1900 and the influenza epidemic of 1918.

The village remained an important trans-shipment point until the Alaska Railroad was built. The city government was incorporated in 1969.

St. Michael's population is largely Yup'ik Eskimo today, and many residents are descendants of Russian traders. Seal, beluga whale, moose, caribou, fish, and berries are important staples. The sale and importation of alcohol is banned in the village.

Saint Michael is accessible by air and sea only. The state owns a gravel airstrip with regular and charter flights are available from Nome and Unalakleet. It is near the Yukon River Delta and has a good natural harbor but no dock. Lighterage service is provided on a frequent basis from Nome. Saint Michael receives at least one annual shipment of bulk cargo. A 10.5-mile road exists to Stebbins.

Population of the Nome Census area is divided into multiple individual communities, shown in Figure 9. Populations within these communities range from a low of 84 individuals to a high of 3,712 in the hub community of Nome.

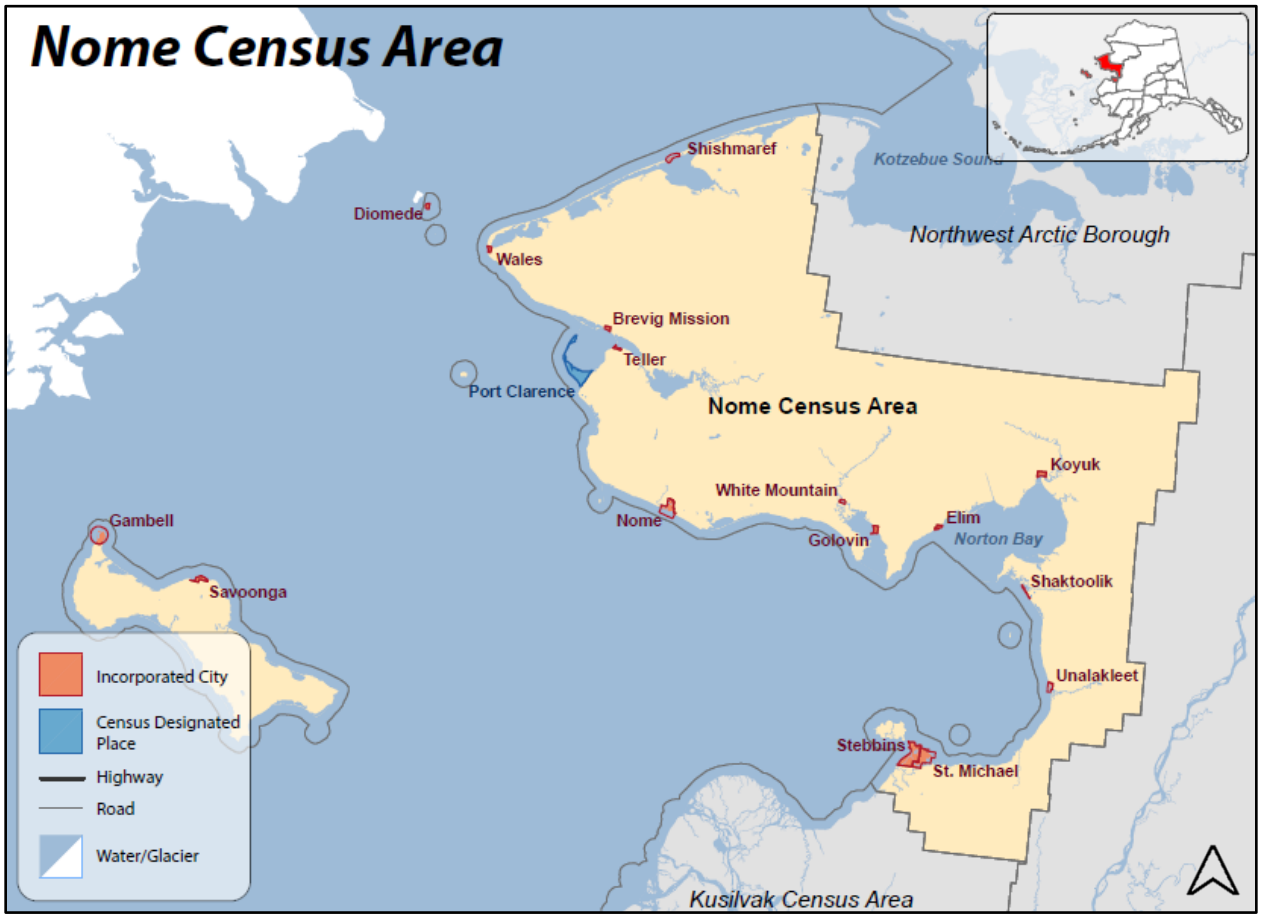



**Figure 10. Nome Census Area (ADLWD)**

**Table 1. Populations of Communities within Nome Census Area, 2020 Estimate (ADLWD)**

| Community | Population |
|---|---|
| Nome Census Area | 9,769 |
| Brevig Mission city | 434 |
| Diomede city | 84 |
| Elim city | 365 |
| Gambell city | 684 |
| Golovin city | 151 |
| Koyuk city | 312 |
| Nome city | 3,712 |
| Port Clarence CDP | 0 |
| St. Michael city | 383 |
| Savoonga city | 712 |
| Shaktoolik city | 269 |
| Shishmaref city | 589 |
| Stebbins city | 612 |
| Teller city | 238 |
| Unalakleet city | 706 |
| Wales city | 156 |
| White Mountain city | 187 |
| Other | 175 |

Historical population data for St. Michael from 1880 through 2010 is shown in Table 2. The estimated annual population of St Michael from 2011 through 2020 is displayed in Table 3. According to the 2019 American Community Survey 5-year estimates, the population of St. Michael is 96.7 percent Alaska Native, with a median age of 18.9 years. The population is 54.3 percent male, and 45.7 percent female.

**Table 2. Population of St. Michael, 1880-2010 (US Census Bureau)**

| Year | Population |
|---|---|
| 1880 | 109 |
| 1890 | 101 |
| 1900 | 857 |
| 1910 | 415 |
| 1920 | 371 |
| 1930 | 147 |
| 1940 | 142 |
| 1950 | 157 |
| 1960 | 205 |
| 1970 | 207 |
| 1980 | 239 |
| 1990 | 295 |
| 2000 | 368 |
| 2010 | 401 |

**Table 3. Population of St. Michael, 2011-2020 (ADLWD 2020)**

| Year | Population |
|---|---|
| 2011 | 406 |
| 2012 | 410 |
| 2013 | 413 |
| 2014 | 421 |
| 2015 | 427 |
| 2016 | 418 |
| 2017 | 391 |
| 2018 | 397 |
| 2019 | 393 |
| 2020 | 383 |

### 3.3.1 Employment and Income

The annual unemployment rate for the Nome Census Area is consistently higher than the State of Alaska with an unemployment rate in 2019 of 10.5 percent and 7.8 percent, respectively.

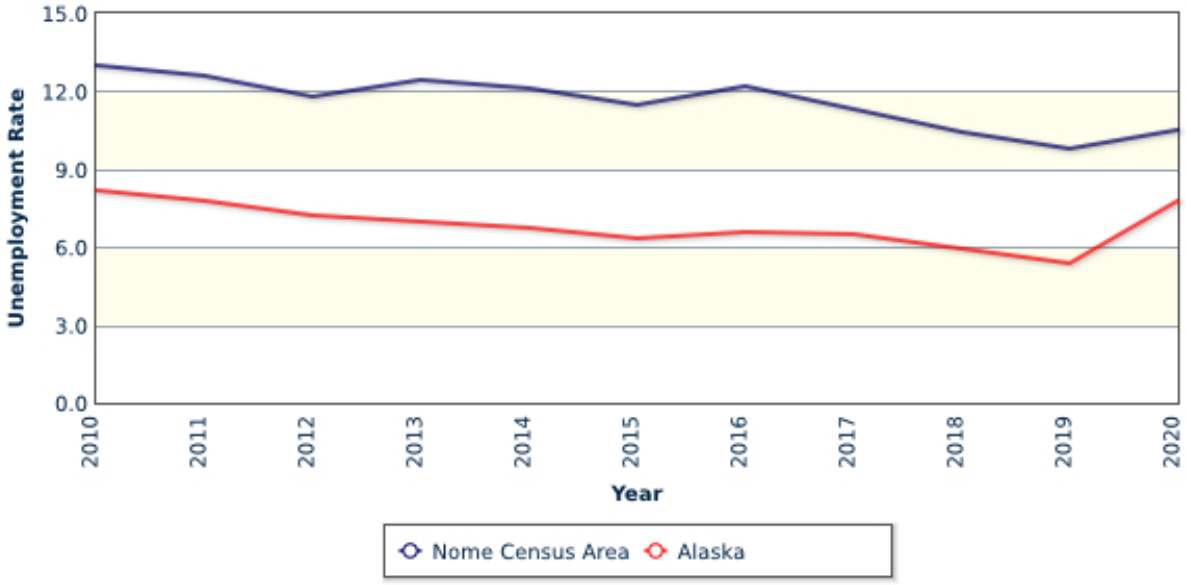



**Figure 11. Annual Unemployment Rates for Nome Census Area and Alaska, 2010-2020 (ADLWD)**

According to the American Community Survey 5-year estimates, the median household income (in 2019 dollars) was $43,438 in St Michael, while per capita income was $11,103 with 23.5 percent persons in poverty. Those compare to the statewide figures of $77,640 median household income, $36,787 per capita income, and 10.7 percent persons in poverty. Employment and income statistics of St. Michael and the Nome Census Area highlights the increased economic hardship often experienced by communities in remote regions of Alaska.

### 3.3.2 Existing Infrastructure and Facilities

The Rivers and Harbors Act, 2 March 1907 (authorizing the project as described in House Doc. 389, 59th Congress, 2nd Session) as adopted, and modified by the Rivers and Harbors Act, 25 June 1910 (authorizing the project as described in House Doc. 416, 61st Congress, 2nd Session) provided for a channel dredged to - 6 feet MLLW and 100 feet wide from St. Michael Bay through the canal for a distance of 6.25 miles and widening the channel at two sharp bends This project was primarily used by boats supplying communities along the Yukon River and its tributaries. Most traffic was rerouted following completion of the Alaska Railroad in 1923, and the project was recommended for abandonment by House Document No. 467, 69th Congress, 1st Session in 1925.

According to the Report of the Secretary of the Army on Civil Works Activities for FY 2008, the Saint Michael Canal Project cost for construction is listed as $377,062, with maintenance of $560. Total costs to date are listed as $377,622. A document entitled “A history of the U.S. Army Engineer District in Alaska, 1867-1992” from the USACE library

provides further historical information confirming that in 1923 when the Alaska Railroad completed its track from Seward to Fairbanks, the Corps terminated its dredging at the Saint Michael Canal due to a cessation of nearly all Yukon River traffic. No modern costs for the project have been incurred, and none are expected (Mighetto & Homstad 1997).

### 3.3.3 Cultural and Subsistence Activities

The harvest and processing of wild resources for food, raw materials, and other traditional uses have been a central part of the customs and traditions of many cultural groups in Alaska, including those in the Nome Census Area. The Alaska legislature passed the state's first subsistence statute in 1978 and established subsistence as the priority use of Alaska's fish and wildlife. The law defined subsistence as "customary and traditional uses" of fish and wildlife and highlighted the unique importance of wild resources, and the continuing role of subsistence activities in sustaining the long-established ways of life in Alaska.

The communities in the Nome Census Area substantially depend on wild foods for nutrition and other customary and traditional uses. Hunting, fishing, and plant gathering are critical activities to the people of the region to participate in the subsistence lifestyle that is typically required to survive in remote regions of Alaska. The cash/commercial sector is also critical to the subsistence lifestyle in that it generates income from jobs or other sources that are used to invest in equipment and fuel to harvest wild foods. Costs for these resources are high in remote Alaska communities. Individuals and family groups depend on this mixed, subsistence-cash/commercial economy in these rural communities. Distances and the level of effort required to reach subsistence sites can vary depending upon climate conditions, seasonality, and the resource being targeted, and resulting harvest levels are also variable. While subsistence foods are preferred on both a cultural and nutritional basis, community members rely on a combination of packaged and subsistence foods for their survival.

As shown in Table 4, per capita harvest of subsistence resources for the Nome Census Area is significantly higher than statewide (388.4 pounds and 61.6 pounds per capita, respectively). When the per capita harvest of the Nome Census Area and the harvest for urban Alaska (18.6 pounds per capita) are compared, the differences are even more pronounced.

**Table 4. Estimated Harvests of Wild Resources for Home Use in Alaska by Census Area and Category, 2017 (ADFG 2019)**

| | Per capita harvest, pounds usable weight | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **Salmon** | **Other fish** | **Shellfish** | **Land mammals** | **Marine mammals** | **Birds and eggs** | **Wild plants** | **All resources** |
| **Nome Census Area** | 79.5 | 37.0 | 3.2 | 50.0 | 195.9 | 12.9 | 9.8 | 388.4 |
| **State of Alaska** | 22.8 | 12.4 | 1.6 | 15.0 | 6.7 | 1.3 | 1.9 | 61.6 |

# 4. FORMULATION OF ALTERNATIVE PLANS

## 4.1 Future Without Project Condition/ No-Action Alternative

For the purpose of this study the Future Without Project Condition (FWOP) is considered the No-Action alternative. Per the Interim Guidance on the Conduct of Disposition Studies, the No-Action alternative is defined as including "the existing and future without-project operations, maintenance, repair, rehabilitation, and replacement of the existing project, including consideration of its current status and any changes in status over the period of analysis."

Under the No-Action alternative, Saint Michael Canal remains a federally authorized project and remains the responsibility of the Alaska District.

### 4.1.1 Physical Environment

Under the No-Action alternative, Saint Michael Canal would remain in federal ownership with no change to the physical environment. There would be no effects to any aspects of the existing physical environment.

### 4.1.2 Economic/Political Conditions

As previously noted in Table 1, the 2020 estimated population of the Nome Census Area was 9,769 persons. This population is expected to be stable with continued moderate growth through the forecasted period of 2025-2045 (ADLWD 2020) (Table 5).

**Table 5. Population Forecast of Nome Census Area, 2025-2045 (ADLWD)**

| Year | Projected Population |
|---|---|
| 2025 | 9,977 |
| 2030 | 10,193 |
| 2035 | 10,447 |
| 2040 | 10,734 |
| 2045 | 11,059 |

## 4.2 Alternatives Description

The FWOP Condition and Future With Project (FWP) physical condition are identical, as the study location has reverted to its natural form and no construction project is being proposed.

The alternatives evaluated included the No-Action and Action alternatives summarized below.

- No-Action Alternative (FWOP): Allow project to continue as an unmaintained water resources project.
- Action Alternative (FWP): Request to Congress for legislation that deauthorizes the Saint Michael Canal Project.

## 4.3 Evaluation of Benefits and Costs

### 4.3.1 With-Project Benefits

The FWOP condition and FWP physical condition are identical, as the study location has reverted to its natural form and no construction project is being proposed. However, the FWP condition (disposition) does have the potential for economic benefits that are not quantifiable as the FWP condition would remove a potential encumbrance to future development. At this time there is no proposed activity at the site, and none anticipated in the immediate future. However, the arctic and sub-arctic regions are undergoing change in response to climate shifts. While future development at this site is unlikely, if a non-federal entity sought development in the area, they would be required to seek authorization from the Corps for improvements at the Saint Michael Canal that could affect the existing channel. Therefore, the FWP condition proposes to remove a potential federal impediment to private or State investment into navigation systems. Given the lack of economic opportunity in the region, any unnecessary impediments to future employment opportunities should be avoided.

### 4.3.2 Net Benefits of Alternative Plans

Given that no construction project is being proposed by the FWP scenario, and therefore no associated costs, any FWP benefits are also the Net Benefits. See Section 4.3.1 above for a discussion of potential FWP benefits.

## 4.4 Summary of Accounts and Comparison of Alternatives

The No-Action and Action alternatives are physically identical. There are no quantifiable National Economic Development (NED) benefits and no changes to environmental quality as the project location has returned to its natural condition and no changes are being proposed. As previously noted, there is the potential for non-quantifiable benefits associated with removing barriers to future permitting at the site by disposition of the existing federal project (the FWP condition).

**Table 6. Four Accounts Evaluation Summary**

| Alternative | NED | EQ | RED | OSE |
|---|---|---|---|---|
| No-Action | $0 | Neutral | Neutral | Neutral |
| FWP | $0 | Neutral | Neutral | Neutral |

## 4.5 Key Considerations in Alternative Evaluation

- There is no existing infrastructure or facilities at Saint Michael Canal. The location is a river canal which has reverted to its natural condition.
- For this project, the canal was dredged under the Federal Government's powers of navigational servitude. There were no other improvements associated with the project. The Federal Government's powers of navigational servitude do not result in any interest in real property.
- There are no opportunities for this project to serve the authorized purpose or another water resources development purpose due to the change in the region's transportation infrastructure and economy.

# 5. TENTATIVELY SELECTED PLAN

## 5.1 Description of the Tentatively Selected Plan

The Action Alternative is the Tentatively Selected Plan. Considering the economic, environmental, and social conditions of the project vicinity, deauthorization of the Saint Michael Canal project will likely not result in any negative impacts.

### 5.2 Economic Effects of the Tentatively Selected Plan

For this study the FWOP and FWP physical condition are identical, as the study location has reverted to its natural form and no construction is proposed as part of the FWP scenario. Given that the FWP and FWOP physical conditions are identical, a discussion of economic effects of the Tentatively Selected Plan is the same as the discussion of FWP benefits. Under the Tentatively Selected Plan there would also be no effects to the physical environment at Saint Michael Canal. See Section 4.3.1 for a discussion of potential benefits of the Tentatively Selected Plan.

### 5.3 Real Estate Considerations

As discussed in Section 4.0, the Saint Michael Canal Project was dredged by exercising the Federal Navigational Servitude. The Government did not acquire any interests in real property to support the construction, as such there are no real property or Government-owned improvements that have an economic or public benefit value associated with this Project. The Tentatively Selected Plan removes a potential barrier for future improvements to the channel and will have no effect on the management status of the lands surrounding the project area.

The Government's application of the Federal Navigation Servitude is not an interest in real property and cannot be transferred to another party. A thorough search of the Real Estate historical records was performed and there were no subsequent acquisitions of any lands nor interests in land for this Project. This research was confirmed by a review of the Real Estate Management Information System. Therefore, a Real Estate Appendix was determined to not be a requirement as divestiture of Federal assets is not required.

### 5.4 Risk and Uncertainty

The only source of risk identified for this study is the future use of the Saint Michael Canal. While the future use of the canal is uncertain, it is unlikely that the canal will be used for its authorized purpose due to the canal returning to natural conditions and modernization of transportation utilized to deliver supplies to the interior via the mouth of the Yukon. Current uses of Saint Michael Canal are limited to seasonal seal and walrus hunting as well as oil and gas surveys.

## 6. ENVIRONMENTAL EFFECTS OF THE TENTATIVELY SELECTED PLAN

The environmental effects of the No-Action Alternative are the same as the Tentatively Selected Plan, the deauthorization of the original project. In the 100+ years since its channel maintenance actions were concluded, no further maintenance actions have occurred at the St. Michael Canal. As such, environmental conditions at the site likely resemble their pre-project conditions. USACE has determined that implementation of

the Tentatively Selected Plan would have no effect upon federally threatened or endangered species or their respective designated critical habitats. Effects to specific resource categories as a result of the implementation of either the Tentatively Selected Plan or the No-Action Alternative are presented in Table 7.

**Table 7. Effects of the Tentatively Selected Plan compared with the No-Action alternative**

| Resource Category | No-Action Alternative | Tentatively Selected Plan (Disposition) |
|---|---|---|
| Climate | No Effect | No Effect |
| Geology | No Effect | No Effect |
| Bathymetry | No Effect | No Effect |
| Ice Conditions | No Effect | No Effect |
| Soils/Sediments | No Effect | No Effect |
| Water Quality | No Effect | No Effect |
| Air Quality | No Effect | No Effect |
| Noise | No Effect | No Effect |
| Currents/Tides | No Effect | No Effect |
| Terrestrial Habitat | No Effect | No Effect |
| Vegetation | No Effect | No Effect |
| Birds | No Effect | No Effect |
| Terrestrial Mammals | No Effect | No Effect |
| Freshwater Fish | No Effect | No Effect |
| Marine Habitat | No Effect | No Effect |
| Marine Vegetation | No Effect | No Effect |
| Marine Fish | No Effect | No Effect |
| Marine Mammals | No Effect | No Effect |
| Marine Invertebrates | No Effect | No Effect |
| Threatened and Endangered Species | No Effect | No Effect |
| Special Aquatic Sites | No Effect | No Effect |
| Essential Fish Habitat | No Effect | No Effect |
| Cultural Resources | No Effect | No Effect |

## 6.1 Environmental Justice and Protection of Children

There are no environmental justice or protection of children concerns associated with the implementation of the Tentatively Selected Plan.

## 6.2 Unavoidable Adverse Impacts

There are no unavoidable adverse impacts associated with the implementation of the Tentatively Selected Plan.

## 6.3 Summary of Mitigation Measures

There are no mitigation measures associated with the implementation of the Tentatively Selected Plan.

## 6.4 Environmental Compliance

The Tentatively Selected Plan was evaluated with regards to compliance with pertinent environmental laws, regulations, and Executive Orders (Table 8). Implementation of the Tentatively Selected Plan would not affect any aspect of the existing environmental baseline and is therefore compliant with pertinent environmental laws, regulations, and Executive Orders.

**Table 8: Environmental Compliance**

| Federal Statutory Authority | Compliance Status | Compliance Date/Comment |
|---|---|---|
| Clean Air Act | Compliant | This project is not reasonably expected to impact air quality negatively, nor does it occur within a non-attainment area. |
| Clean Water Act | Compliant | The project, as proposed, does not affect existing water quality values. |
| Coastal Zone Management Act | N/A | The State of Alaska withdrew from the voluntary National Coastal Zone Management Program on 1 July 2011. Therefore, within the State of Alaska, Federal agencies are not required to ensure their activities are consistent with an approved State coastal management plan. |
| Endangered Species Act | Compliant | The project, as proposed, would not affect threatened or endangered species or their designated critical habitat. |
| Marine Mammal Protection Act | Compliant | The project, as proposed, would not affect marine mammals or their habitat. |
| Magnuson-Stevens Fishery Conservation and Management Act | Compliant | The project, as proposed, would not negatively affect Essential Fish Habitat. |
| Fish and Wildlife Coordination Act (FWCA) | Compliant | Not required as trust resources would not be affected. |
| Marine Protection, Research, and Sanctuaries Act | Compliant | The project, as proposed, does not affect ocean waters outside of the territorial sea. |
| Migratory Bird Treaty Act (MBTA) | Compliant | The project, as proposed would not affect avian species covered under the MBTA. |
| National Historic Preservation Act | Compliant | No historic properties would be adversely affected. |
| Executive Order 11988: Floodplain Management | Compliant | The project, as proposed, does not affect any aspect of the floodplain. |
| Executive Order 11990: Protection of Wetlands | Compliant | The project, as proposed, does not affect wetlands. |
| Executive Order 12898: Environmental Justice | Compliant | The project, as proposed, does not disproportionately affect underserved communities. |
| Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks | Compliant | The project, as proposed, does not disproportionately affect the health or well-being of children. |
| Executive Order 13186 Protection of Migratory Birds | Compliant | The project, as proposed, would not impact migratory birds. |
| National Environmental Policy Act | Pending | Pending completion of the EA/Feasibility Report/signed FONSI |

# 7. REQUIREMENTS FOR IMPLEMENTATION

## 7.1 Deauthorization

Federal interest in retaining this project as authorized no longer exists because the project is no longer used or needed for commercial navigation, and the project has not been maintained for more than a century. Recommending Congressional deauthorization of the project is the necessary first and only action for implementation.

## 7.2 Recommendations

In view of the conclusions set forth, and after considering the expected social, economic and environmental impacts, it is recommended that the Saint Michael Canal Project be recommended for deauthorization.

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