

Appendix A: Preliminary Environmental Research
Baker and North Star Subdivisions Water and Sewer Project
North Pole, Alaska
Agency Scoping

Land Use/ Important Farmland/Formally Classified Lands

Approximately 88% of the lots within the Baker and North Star Subdivisions are occupied and consist of structures with landscaped and/or wooded surrounding areas. The undeveloped lots are heavily wooded, and various densities of trees line the streets.

The Baker and North Star Subdivisions were platted for residential homes in 1974 and 1972 respectively. This is the first known use of the area.

There is a central section within the North Star Subdivision (Tract A, Figure 1 or 2) that was used to provide a local material source for construction of the subdivision roads.

The project area is zoned for residential use including single-, two-, and multiple-family designations. Beaver Springs Slough and its 50-foot outdoor recreation buffer meander along the west and south boundaries of the subdivisions.

The sewer and water line routes are anticipated to use existing utility easements or street rights-of-way. However, additional easements would need to be acquired on undeveloped and previously developed lots for proper routing of the lines and construction. Acquisition of Tract B-1 of the North Star Subdivision is needed to construct the new circulation pump station (Figure 3). Tract C-1 and a portion of Tract A would need to be acquired for the Baker and North Star lift stations (Figure 2), respectively.

A review was conducted of the Alaska Department of Natural Resources' website and the Tanana Basin Area Plan, and no state parks or lands are present in the project vicinity. A property adjacent to the project is owned by the Fairbanks North Star Borough (FNSB) and is used by the North Pole Middle School.

A review of the Bureau of Land Management's (BLM) land status map online found that the project area does not contain any land managed by BLM. The nearest BLM land is approximately 50 miles northwest, and the nearest Native Land (IC or Patented) is approximately 16 miles southwest of the project.

There are no designated unique or prime farmlands in Alaska. No farmlands of statewide or local importance have been designated within the project area.

No formally classified lands are known to occur within the project area.

Floodplains [Executive Order 11988]

North Pole is located adjacent to the Tanana River but is protected from flooding by the Moose Creek Dam and the Tanana River flood control levee. According to the Federal Emergency

Management Agency (FEMA) Flood Insurance Rate Map (FIRM Community Panel No. 025009 0212H), the project is in Flood Zone X, defined as “Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.” The project is not within the 100-year floodplain; therefore, a FNSB floodplain permit would not be required for the proposed project.

Wetlands [Executive Order 11990]

Aerial photos from 1970 show the area as uniformly forested. A gravel pit was developed to obtain borrow for the subdivision roads, but it is no longer in use and the area has since revegetated. The National Wetland Inventory (NWI) map (Fairbanks C-1) shows the entire project area to be in uplands. No additional delineation work is currently planned.

Cultural Resources/ Historic Properties [Executive Order 11593]

On November 26, 2007, the National Register of Historic Places (NRHP) was searched through the National Park Service’s online database for listed sites in North Pole, Alaska. The query returned one result: Chugwater Site, AHRS No. FAI-035, added in 1979; the address is restricted. The latest published version of the Alaska Heritage Resources Survey (AHRS) was also consulted, on November 28, 2007, for the presence or absence of historic properties including those listed in or eligible for inclusion in the NRHP. No properties in or adjacent to (within one mile of) the project area were identified. The NHRP-listed Chugwater Site did not appear on the AHRS search results, and it is believed to be more than one mile from the project area. In addition to the database research, old aerial photographs were reviewed and show no structures within the project area as of July 20, 1970.

Denakkanaaga, Doyon, Ltd., the Fairbanks Historic Preservation Foundation, Fairbanks Native Association, the Fairbanks North Star Borough Commission on Historic Preservation, Tanana Chiefs Conference, Inc., and the Tanana-Yukon Historical Society have been sent initiation of consultation letters to verify the absence of historical or cultural properties.

Biological Resources

Threatened and Endangered Species

The U.S. Fish and Wildlife Service’s (USFWS) Threatened and Endangered Species System (TESS) database and the Alaska Department of Fish and Game’s website were consulted on November 20, 2007. These sources indicate that no federally listed threatened or endangered species are within the project area.

Fish and Wildlife Resources

The project area does not contain any waters that support resident or anadromous fish, nor does it contain areas of essential fish habitat (EFH) according to NOAA’s website (<http://mapping.fakr.noaa.gov/Website/EFH/viewer.htm>). The nearest fish-bearing stream is Beaver Springs Slough, which is more than 200 feet southwest of the project area (Figure 1) at its closest point. Beaver Springs Slough is not listed in the *Catalog of Waters Important for the Spawning, Rearing or Migration of Anadromous Fishes*, but does contain resident fish species (ADNR-OHMP, N. Ihlenfeldt, 2006).

Typical wildlife species found within and around the project area include moose, fox, waterfowl, and passerine and raptor avian species, along with a variety of small mammals native to the area.

We have researched the ADF&G State of Alaska Refuges, Critical Habitat Areas, and Sanctuaries, and none are present in the project area. The closest State Refuge is Creamer's Field approximately 15 miles from the project.

Vegetation

A majority of the project construction would take place within the existing streets; however, bordering strips of trees and vegetation would be removed to accommodate construction and the new structures. Previously undeveloped portions of the project area consist primarily of spruce, birch, aspen, cottonwood, alder, and willow trees along with other native shrub and grass species.

Water Quality Issues/ Water Body Involvement

The project area does not contain navigable water bodies under the jurisdiction of the U.S. Army Corps of Engineers or the U.S. Coast Guard. The closest water body is Beaver Springs Slough, which is more than 200 feet southwest of the project area (Figure 1) at its closest point. Beaver Springs Slough is not listed in the 2006 Integrated Water Quality Monitoring and Assessment Report as an impaired water body (ADEC, modified 6/17/2007).

The northwesterly flowing groundwater shows signs of contamination from failed septic systems and urbanization in the area. Ground and surface water samples from the Chena Slough drainage show relatively high amounts of sodium chloride brine (associated with water softener usage) and moderately elevated concentrations of substances commonly associated with effluent from septic systems. The Fairbanks Soil and Water Conservation District's report *Chena Slough Water Quality Monitoring* recommends upgrading the septic systems in the North Pole area to minimize future water quality and habitat degradation (J. Scharfenberg, 2004).

Dewatering of the project area would be necessary for construction of the lift stations and deep ends of the gravity sewer line. This would require the contractor to lower the water table by pumping out the groundwater, which could affect the performance of shallow domestic wells. Dewatering could also lower the water level of the nearby Beaver Springs Slough. The sewer line would be placed as shallow as practicable to minimize the dewatering required for installation.

The water supply for the proposed project consists of two City wells capable of producing approximately 410,000 gallons/day. The treatment facility has a capacity of 441,000 gallons/day with a total storage capacity of 937,000 gallons. The existing water demand is approximately 200,000 gallons/day; the addition of Baker and North Star Subdivisions to the City's water system would increase demand by 33,000 gallons/day. Thus, the system is capable of accommodating the increased water demand.

The water system would be designed to meet the City of North Pole's Utility Standards, including a fire flow rate of 1,500 gallons per minute with a residual pressure of 20 psi. Meeting these requirements would provide the new service area with the same level of fire protection as the rest

of the city. Water for fire flow would be provided by the fire pump at the water treatment plant, and fire hydrants would be located every 500 feet.

Wastewater from the sewer mains would be transported to the City’s Wastewater Treatment Facility, which can process up to 550,000 gallons/day. Currently, the facility processes an average of 325,000 gallons of wastewater per day; with the addition of the Baker and North Star subdivisions to the system, this would increase by 29,000 gallons/day. The capacity of the treatment facility is sufficient to accommodate the average of 354,000 gal/day (and the estimated peak usage of 495,000 gal/day).

Coastal Resources

The project area is not located within a coastal zone or coastal district boundary.

Socio-Economic

The project would bring safe and reliable sewer and water systems to the subdivision residents. Economic impacts of the project relate to maintenance and repair costs associated with private systems versus the hook-up costs of the City-maintained systems. By City ordinance, residents would have two years after construction of the utility main lines to connect to these systems. The City would be responsible for the maintenance of the systems, relieving residents of monthly and long-term maintenance costs; however, a service charge for the utilities would be incurred on a monthly basis.

Environmental Justice [Executive Order 12898]

The U.S. Census Bureau website was consulted on December 20, 2007. Data specific to the subdivisions was not available, so the demographic profiles for North Pole (city limits) were utilized. Table 1 shows that North Pole does not appear to consist of disproportionately high minority or low-income populations as compared with the Fairbanks North Star Borough and United States percentages. The average home value, including property, for the Fairbanks North Star Borough is approximately \$171,700 (U.S. Census). This figure is comparable to the average home and property value of \$172,675 for lots within the Baker and North Star subdivisions.

Table 1. Selected Demographic Profiles for North Pole, Alaska, compared with Fairbanks North Star Borough and U.S. Percentages per U.S. Census.

Demographic Profile	North Pole Number	North Pole (%)	Fairbanks North Star Borough (%)	U.S. (%)
Minority	299	19.0	22.2	24.9
Persons 65 years and over	82	5.2	4.6	12.4
Families below poverty level	23	6.2	5.5	9.2
Individuals below poverty level	139	8.7	7.8	12.4
Disabled persons	209	15.9	13.6	19.3

A long-term goal of the City of North Pole is to provide water and sewer service to all of its residents and businesses within city limits. The build alternative would bring piped water and sewer systems to all persons within the Baker and North Star subdivisions regardless of race or income.

Air Quality

The City of North Pole is located within the Fairbanks Urbanized Area, which is currently designated as an attainment area for all the criteria pollutants for which the National Ambient Air Quality Standards (NAAQS) apply. Except for dust and heavy equipment emissions during construction, the project will not induce additional vehicle traffic, wood burning, or other producers of air pollution. No permanent sources or facilities of air pollution would be installed.

Transportation

This project would widen existing streets, add shoulders, and flatten slopes as necessary to meet current City standards. The City is responsible for current and future road maintenance. Transportation within the subdivisions will be disrupted during construction of the project, but access will be maintained. Residents would be affected most, but transportation impacts could be incurred by emergency service personnel (fire, police, etc.), postal and other delivery personnel, and those relying on public or school bus service. Construction of both water and sewer systems is planned to occur at the same time to minimize disruptions to pedestrian and vehicle traffic. The contractor would be required to maintain pedestrian access to all homes and would only be allowed to have up to 500 feet of trench open for up to two days. Only one intersection would be allowed to be closed at a time.

Noise

The project area is considered residential. Noise impacts will be temporary and are associated with the construction of the project. The lift stations and circulation pump station would not generate substantial noise when operating. The nearest home to the new structures is approximately 120 feet away. No permanent sources of noise would be constructed as a component of this project

Contaminated Sites/Leaking Underground Storage Tanks

The Alaska Department of Environmental Conservation (ADEC) database was searched for Contaminated Sites (CS) and Leaking Underground Storage Tanks (LUST) within the project area. ADEC lists one location in the Baker Subdivision where a 1,000-gallon #2 diesel heating oil spill to the subsurface occurred in October 2006. Environmental Data Resources, Inc. has also been retained to search federal and state databases for available information.

Anticipated Permits and Authorizations

NPDES General Permit for Construction Activity
SWPPP Development and Implementation
ADEC Approval to Construct and Operate
ADEC Dewatering Permit