

CHAPTER 2. STUDY AREA DESCRIPTION

Location, Size, and Description

The Study Area is the NW¼ Section 25T 15N R2W SM, generally known as the NW¼ Section 25 in Birchwood. It consists of 47 parcels comprising 145 acres of land owned and managed by the municipal Heritage Land Bank. The NW¼ Section 25 is located west of the New Glenn Highway, east of the Fort Richardson Military Reservation, and south of Chugiak High School.

As it appears on the Birchwood Vicinity Map, the NW¼ Section 25 is sandwiched between the 1,688-acre Beach Lake Regional Park to the north and the 1,500-acre Powder Reserve development area to the south. To the east is a small, semi-rural, suburban neighborhood. To the west, the Alaska Railroad track alignment isolates the Fire Creek floodplain and Fort Richardson Military Reservation from most of the Study Area.

The Study Area can be reached from the east through the residential neighborhood. Three streets in this neighborhood dead-end at the Study Area. Hillcrest Drive connects one-half mile between the Study Area and the Glenn Highway interchange at Chugiak High School. Recreational trail users can also enter the north portion of the Study Area from Beach Lake Park.

The NW¼ Section 25 is zoned Public Lands and Institutions (PLI), and remains an undeveloped woodland, with the exception of the Alaska Railroad track and permitted and informal recreational trails. A power transmission line easement, owned by the Matanuska Electric Association, traverses the center of the Study Area in a southwest–northeast direction. At one time, a rough service road existed beneath the length of the power line connecting with Hillcrest Drive at the northeast corner of the Study Area. The power line is no longer maintained, and the road has since become a trail. The easement for the Eklutna Transmission Main (water pipeline) runs along the east boundary of the Study Area and is also used as a trail. The Hill Loop Trail, a dedicated unpaved trail, loops into the Study Area from the Beach Lake Park multi-use trail system to the north.

The parcels and easements in and around the NW¼ Section 25 appear on the Property Boundaries Map. The legal description of the Study Area is: Township 15 N, Range 2 W, Seward Meridian, Section 25, NW¼ NW¼ portion and Lots 15 through 22, 39 through 46, 63 through 68, 72 through 78, and 95 through 110. HLB Inventory Map 1-5¹ identifies the Study Area as HLB Parcels 1-009 through 1-025, 1-028 through 1-033, 1-035 through 1-041, and 1-043 through 1-058.

¹ HLB Inventory Map 1-5 appears in *Appendix B*.

The Alaska Railroad right-of-way, identified as USS 9020, diagonally traverses the northwest corner of the Study Area. This right-of-way is 200 feet wide, and removes 7.92 acres from the Study Area, dividing it into northwest and southeast sub-areas, the northwest sub-area becoming isolated from the main Study Area. In addition, the Alaska Railroad Corporation (ARRC) purchased HLB Parcels 1-026, 1-027, and 1-042 in the NW¼ of Section 25 from the Municipality of Anchorage in 1999, for a track realignment. The resulting ARRC land holdings and easement comprise approximately 15 acres of the NW¼ Section 25, leaving the Study Area at 144.74 acres (approximately 145 acres) in size.

Study Area History

Originally surveyed and patented in 1917, the NW¼ Section 25 was selected by the State of Alaska in 1965. In 1968 the State approved the selection of these parcels by the Greater Anchorage Area Borough (ADL 38953). The property was conveyed to the Borough through Patent #817, subject to several encumbrances by the State, including a Free Use Permit for gravel extraction. The land was later deposited in the Heritage Land Bank.

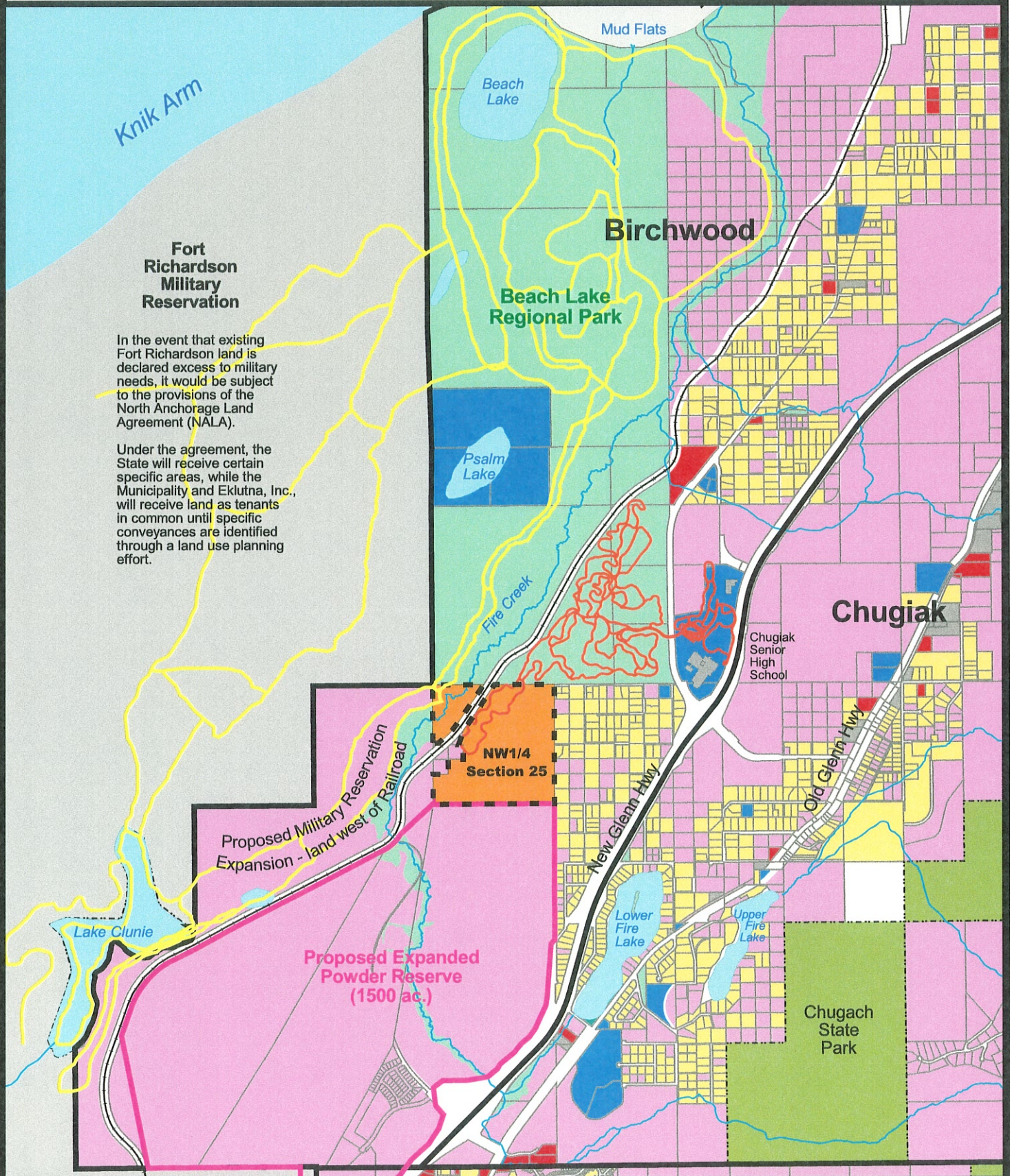
The HLB lands border on Beach Lake Regional Park, for which a master plan had been completed 1973. In 1979 municipal Parks and Recreation expressed an interest in annexing 114 acres of the NW¼ Section 25 to Beach Lake Park. Through the ensuing decades, local community councils, recreational groups, and the Chugiak–Eagle River Parks Board of Supervisors periodically requested that the land be added to Beach Lake Regional Park. In the meantime, recreational uses from Beach Lake Regional Park bled into Section 25, including the Hill Loop Trail which was constructed by trail user groups in the early 1980s.

The NW¼ Section 25 has long been known to hold a plentiful source of gravel. In the 1970s, the municipal Department of Public Works attempted to gain approval to use the NW¼ Section 25 as a gravel material site. Local residents and the Alaska Department of Highways (now ADOT&PF) objected, the Department of Highways claiming its exclusive rights to the material under its Free Use Permit. The gravel issue has yet to be resolved by either the State or the Municipality.

In the early 1990s, the *Chugiak-Eagle River Comprehensive Plan* designated the NW¼ Section 25 as Residential/Park, with Environmentally Sensitive Land in the northwest corner, and recommended that a site-specific land use study be prepared to provide direction for use of the site. Since that time, as community growth has increased demand on area public facilities and services, local community councils have made requests that HLB transfer the land to Parks and Recreation, and several other agencies have each identified a need for the property.



Birchwood Vicinity Map



NW 1/4 Section 25 Land Use Study Study Area Property Boundaries



Planning Department
Municipality of Anchorage

Property Boundaries

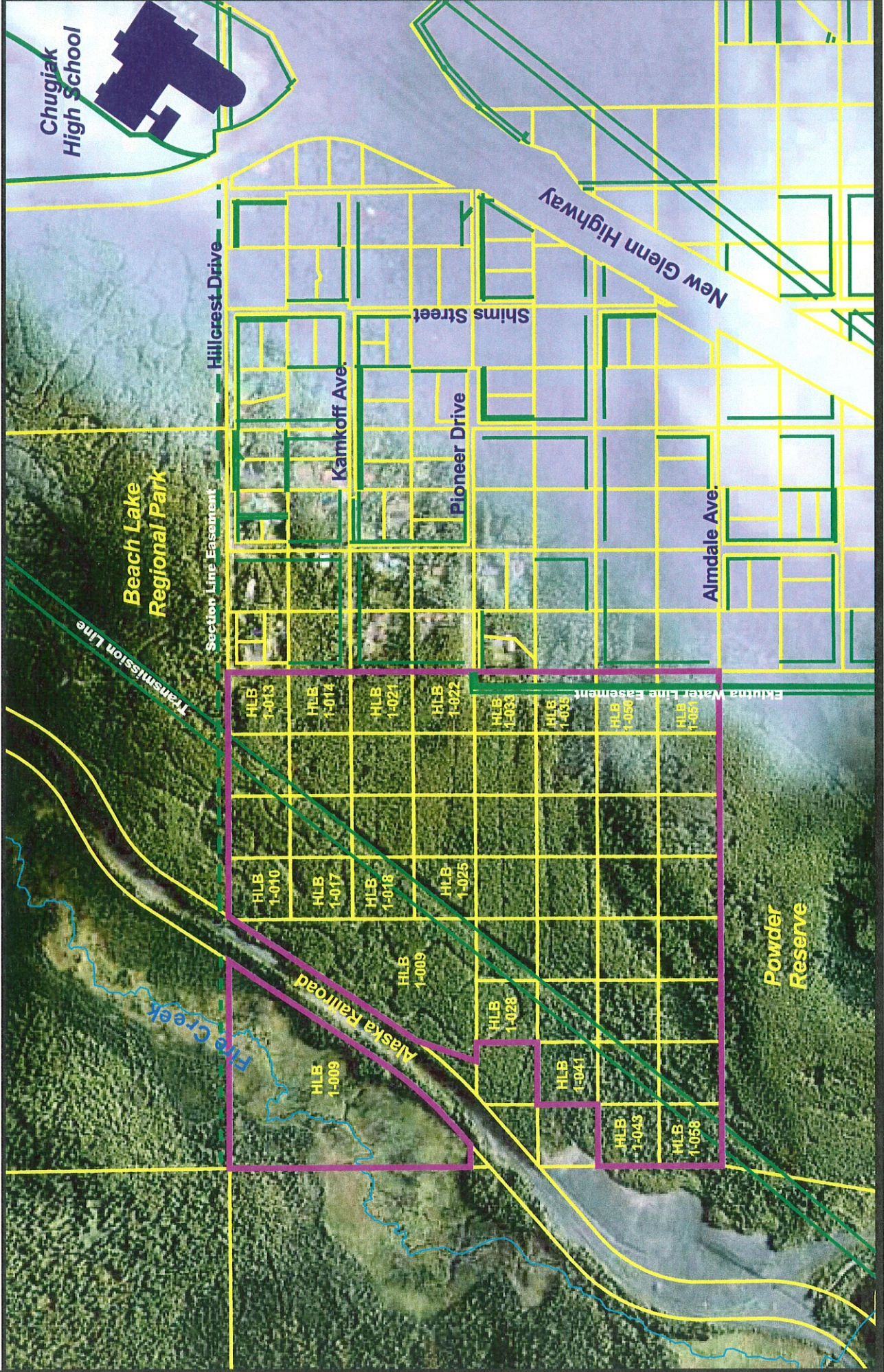


NW4 Section 25 Study Area



Road or Utility Easements

Note: The cloud cover, which appears in the satellite imagery, is beyond our control.



Site Environmental Characteristics

Topography

The topography of the Study Area is uneven, ranging in elevation from 115 feet in the Fire Creek floodplain to just under 350 feet elevation on the ridge in the southeast corner of the Study Area. Natural drainage flows toward Fire Creek, located to the west of the railroad easement, in a west-northwesterly direction.

As illustrated on the Topography Map, much of the Study Area southeast of the Alaska Railroad is an upland plain that extends from the residential neighborhood area in the east to Fire Creek floodplain in the southwest. The plain is nearly flat, with less than 7 percent slope. The plain is hemmed in on its northern-northwestern margins by a rugged terrain of hills and depressions that extends into the Study Area from Beach Lake Park. These northern hills and depressions provide local-area variations in elevation of anywhere from 240 to 310 feet above sea level. A ridge rises more than 100 feet in elevation in the southeastern corner of NW¹/₄ Section 25. This ridge, with its steep, north-facing slope, overshadows much of the Study Area, and physically isolates the ridge top plateau from the rest of the Study Area. The Slope Map illustrates that the ridge slope exceeds 30 percent.

The Slope Map illustrates three plains isolated from one another by elevation and rugged topography. The first plain is the Fire Creek floodplain. Next, the central plain extends from the residential neighborhood to the east and drains to Fire Creek. Last, the southeastern ridge extends from the Powder Reserve.

Surficial Geology

Chugiak-Eagle River lies along the boundary between two physical regions of Alaska, the Cook Inlet Lowlands and the Chugach Mountains. The Study Area is within the Cook Inlet-Susitna Lowland, at a convergence of several landforms.

The first of these landforms is the Fire Creek floodplain. Fire Creek flows from Lower Fire Lake, crosses the New Glenn Highway and cuts three miles across the Powder Reserve where the creek is bound on both sides by extensive wetlands. Beaver dams across the creek have created a large pond one-half mile south of the Study Area. Fire Creek then flows northward, crosses through the Study Area and Beach Lake Regional Park, and empties into the Knik Arm.

The upland plain that comprises most of the Study Area is an alluvial landform that spreads in a fan shape from the residential area to the east and deposits into

the Fire Creek floodplain to the southwest. The alluvial fan is nearly flat and consists of coarse-grained alluvium—ie., gravel—within 2 feet of the ground surface. The plain is a good source of gravel, crushed aggregate, and sand that is generally 20 feet or more thick. Excavation would likely be easy. The Soils and Underlying Gravel Resources Map shows the area of the known, high quality gravel material. The alluvial fan landform also offers good conditions for building foundations and excavation. Drainage conditions are also good.

The alluvial fan is surrounded by glacial moraine hill and channel landforms that occupy the northern and southeastern fringes of the NW¼ Section 25. The northern fringe is a jumbled terrain of small hills and depressions extending into NW¼ Section 25 from Beach Lake Park. This landform provides a generally good to fair source of gravel and sand, present in considerable thickness.

The southeastern corner of the NW¼ Section 25 is the northern part of a broad ridge system extending from the Powder Reserve. The ridge rises more than 100 feet over the Study Area's central alluvial fan. Rather than an alluvial fan deposit of abandoned gravel material, a mix of materials underlies the ridge—useful for construction material that does not require size-grade specification. The northeastern corner of the Study Area also consists of mixed materials that do not necessarily meet size-grade specifications for construction. Surface geologic materials in the very northeastern Study Area are not quite as well drained, and in some locations are somewhat poorly drained

Soils

As shown on the Soils Map, the predominant upland soil series found in the Study Area is Homestead Silt Loam. It is found in generally the same locations as the coarse grained geologic deposits in the central alluvial plain, northern glacial moraine, and southeastern ridge top. Soil depth, related to the degree of slope, ranges between 8 inches and 48 inches. Water permeability is moderate, and the soil is generally well-drained.

Homestead Silt Loam has good potential for most urban development. It provides a stable base for roads and buildings, but in some areas frost action and sloping topography should be considered in road or building design. It should be avoided as a location for community sewage lagoons, because it is a permeable soil and may allow high concentrations of effluent to pollute the ground water. Individual septic tank absorption fields will function properly in most areas, but special design may be required in areas of compact till. Gardens and lawns do well. The potential for most recreational uses is good except in some areas where moderate slopes may be less suitable. Erosion hazard is slight in flat areas and moderate in slopes of 7 to 12 percent.

Homestead Silt Loam on slopes between 12 and 20 percent begins to present a moderate limiting feature for urban development. Rain water runoff is such that gardens should be tilled across the slope and covered with a mulch to prevent erosion. Slopes of 20 to 30 percent in Homestead Silt Loam become a primary and severe limiting soil feature for urban development. Runoff is rapid and the erosion hazard is severe. This soil is too steep for gardens and lawns. Recreational use is poor, and on complex slopes is restricted to paths and trails. Slopes above 30 percent preclude urban development and most recreational use.

Wetland soil series occur in the Fire Creek floodplain. The high water table and susceptibility to frost heaving action severely limit the potential of these soils for urban development. A pocket of Kalifornsky Silt Loam is located in a nearly flat, shallow basin in the northeasterly plain of the Study Area. Again, high water tables and severe frost action may affect the potential of this soil as a site for buildings, roads, sewage and waste disposal, and other urban development.

Hydrology

The Fire Creek floodplain is a coastal floodplain. As shown on the Floodplains, Streams, and Wetlands Map, it is also a Class “A” Preservation Wetland. With few exceptions, development is not permitted in “A” wetlands. A 25-foot non-disturbance setback is required along stream channels.

The Floodplains, Streams and Wetlands Map also shows a Class “C” Developable Wetland that coincides with the Kalifornsky Silt Loam soils in the northeastern corner of the Study Area. While generally considered developable for most residential and other land use activities, peaty wet Kalifornsky soil in this wetland may not be suitable for on-site water and septic systems.

The toe of the ridge in the southeast corner of the site has an early freeze and late thaw seasonal cycle. The location makes it a poor drainage pocket, despite the presence of Homestead silt loam. This suggests that, even if this area were filled with gravel, it could remain a poor drainage site for residential, road, or trail development due to its ridge bottom location.

The central upland plain of the Study Area drains toward Fire Creek. It is likely that any private development or public use facilities that may be considered for this upland plain would be supplied by individual wells. The alluvial fan deposits here are among the most permeable in Chugiak – Eagle River. Because the most productive wells normally are found in thick deposits of unconsolidated materials, the depth to bedrock is an important consideration for land use planning.

Natural Hazards

The Study Area is located in an area of moderately low ground failure susceptibility. There may be local instability due to ground failure along the steep slopes of the ridge in the southeast corner. Removal of stabilizing vegetation on or above the slope may contribute to slope instability and a localized ground failure hazard. The site is exposed to a mild north winter wind coming from the direction of the Matanuska Valley. The Study Area is not located in an area which is subject to potential avalanche risk. Hazards due to flooding and water table are discussed in the previous wetlands and floodplains sections.

Historic and Natural Landmarks

The *Land Use Study* has identified no unique natural or historic landmarks for preservation on the NW¼ Section 25. There remain some power pole relics of the Eklutna Electric Transmission line easement that traverses the Study Area, inherited by the Matanuska Electric Association (MEA). The Anchorage Light and Power Company provided power to the City of Anchorage from the Old Eklutna Power Plant from 1929 until 1956, when the growing city's demand for electricity outpaced the plant's capacity. There could be potential for the transmission line facilities to be considered as historical landmarks. However, the equipment has long been removed, and all that remain are denuded wooden posts.

Vegetation and Wildlife Habitat

The Vegetation Map illustrates that the central plain is a closed forest of small and medium-sized birch and spruce trees. The plain is affected by the seasonal shadow cast by the ridge that rises in the southeast. Meanwhile, the ridge top consists of tall stands of white spruce and white birch, and medium-aged stands of mixed deciduous trees. The understory on the ridge is made of ferns and grasses. As the topography drops and the soils become wetter, medium-aged stands of black spruce, mountain hemlock and sphagnum shrub bog are dominant. Here the understory consists of alders, devils club, moss ferns, low-bush cranberry and labrador tea. Near the southwestern foot of the ridge system is a stand of mature, cathedral-like birch trees with little understory save a billowy, cloud-like carpet of pale-green, woodland horsetail plants. There is also a small grove of aspen and an open evergreen woodland with lingonberry groundcover in the southwest corner.

The uplands of the NW¼ Section 25 probably support an average diversity of plant and animal species. Moose and bear are prevalent in the Birchwood area. The continuous block of open space found on military, park, and undeveloped land provide habitat for browse and moose-calving. During winter months, a large

moose population is dispersed throughout the area as the animals descend from the snow-covered uplands to the plentiful browse in the lowlands. The same conditions benefit other fur-bearing species. The Fire Creek floodplain and other sections of the Study Area provide standard habitat for many bird species, including duck, geese, bald eagle, marsh hawk, hawk owl, and willow ptarmigan. The creek is also home to silver and pink salmon, and rainbow trout.

A natural open space, and thus wildlife habitat corridor, traverses the Study Area parallel to the Alaska Railroad and the MEA power line easement, connecting Beach Lake Regional Park in the north to the Fire Creek beaver dams in the southwest. The ridge bottom along the southeast Study Area may also be a wildlife corridor, being the margin of flat plain and a ridge, and linking into the floodplain greenbelt to the southwest. The interface of the hilly and flat areas in the northern Study Area might also be favorable for a wildlife corridor.

Scenic Views

The ridge crest in the southeastern Study Area offers scenic views of Mt. Susitna, the Alaska Range, and across the lowland forests of Beach Lake Park to Knik Arm and the Talkeetnas. It also offers views eastward to the Chugach Mountains including Bear Mountain and Roundtop. At least several minor promontories along the ridge crest provide simultaneous scenic views of these landmarks. Meanwhile, the open spruce forest in the southwestern portion of the site offers some views east to the Chugach Mountains.

Climate and Microclimate

The Study Area lies within a transition zone between moist maritime climate and drier continental extremes. Temperature extremes vary from 92 degrees Fahrenheit to -41 degrees Fahrenheit. From September through April, winds are predominantly from the north. Total precipitation is between 15 to 20 inches. Snowfall averages 50 inches, commencing in October and continuing into April. Depth of freezing varies from one locale to the next, depending on underlying soils and drainage and depth of snow cover.

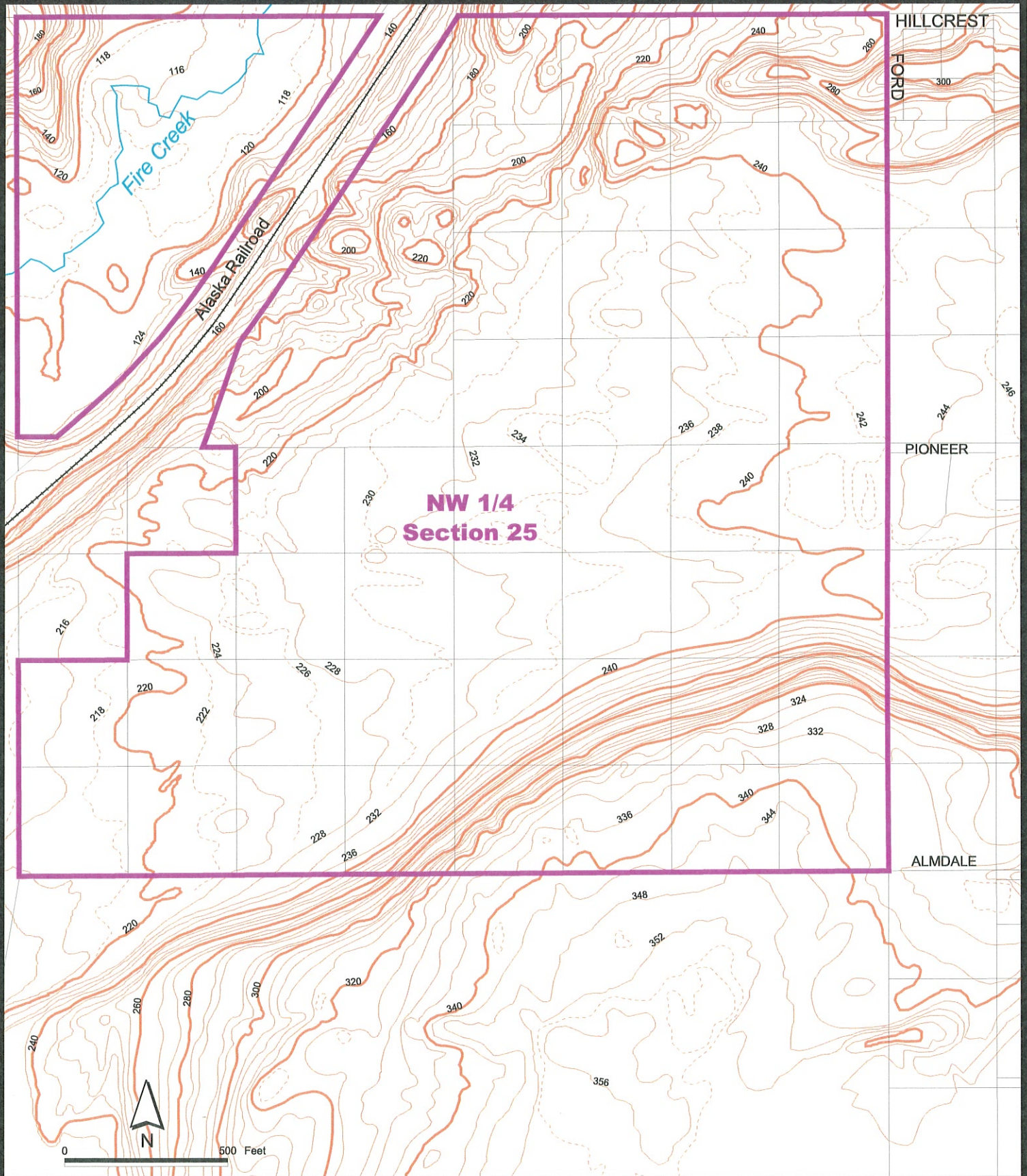
The ridge that rises in the southeast Study Area casts a seasonal shadow that keeps temperatures lower and the snow longer over much of the Study Area to the north. The Vegetation, Habitat, and Scenic Views Map shows the extent of daytime ridge shadow at several times during fall, spring, and winter. The very toe of the ridge is perceptibly cold and humid. Favorable growing conditions prevail at the top of the ridge and to some extent in the southwestern Study Area.

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Topography (4' contour intervals)

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Municipality of Anchorage





Slope



 Study Area Boundary

