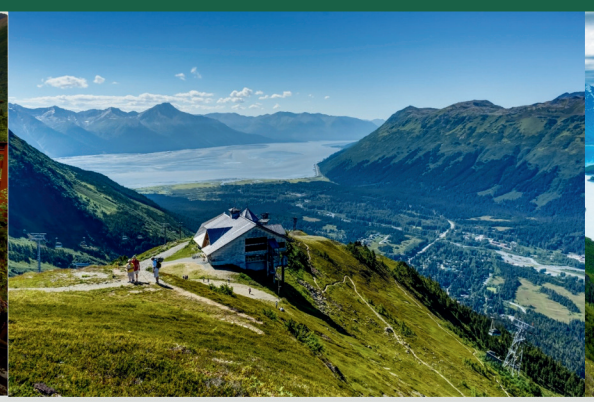
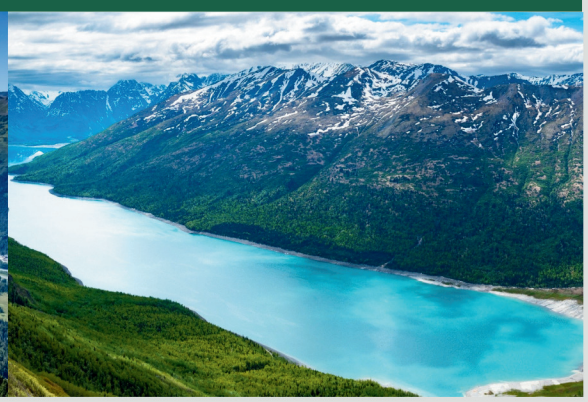
DECEMBER 2025

# Municipality of Anchorage

# Community Wildfire Protection Plan





*This publication was made possible by funding provided by the U.S. Department of Agriculture, Forest Service through Congressionally Directed Spending (Award No. 23-DG-11 100106-900). The Municipality of Anchorage sincerely thanks the Forest Service for their partnership and investment in our community.*

# MOA Community Wildfire Protection Plan

## Table of Contents



This Municipality of Anchorage CWPP should be read with Appendices A, B, C, D and E.

## List of Figures and Tables

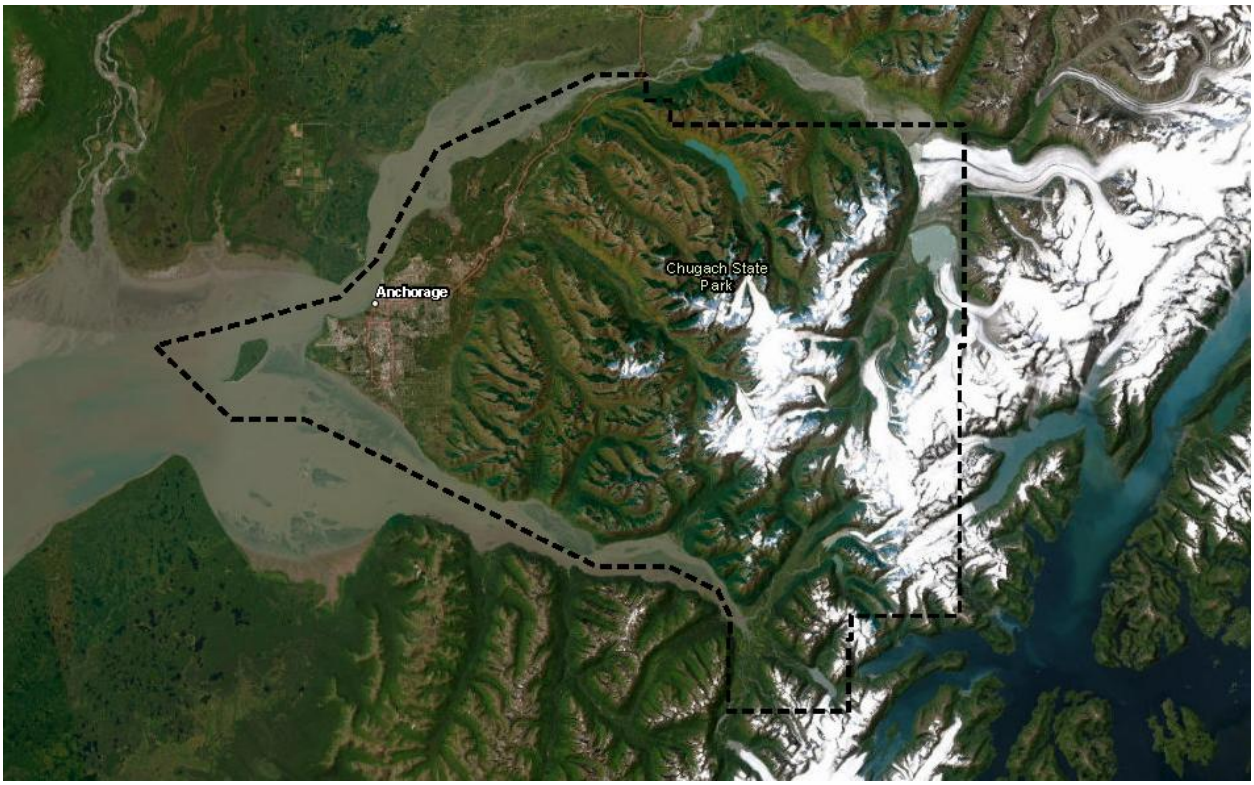



**Figure 1 – Municipality of Anchorage CWPP AOI[1]**

The study area, or area of interest (AOI), addressed in this Community Wildfire Protection Plan (CWPP), includes the entire Municipality of Anchorage (MOA), as defined by the US Census Bureau[2]. The municipality ranges from Ingram Creek along the Seward Highway to the Knik River bridge along the Glenn Highway, and includes the communities of Girdwood, Eagle River and Chugiak. The areas of wildland urban interface (WUI) extend throughout many developed neighborhoods.

For the Municipality of Anchorage—like much of Alaska—wildfire has become an increasingly significant and measurable threat. Over the past two decades, Alaska has experienced several record-setting fire seasons, with 6.6 million acres burned in 2004, 5.1 million in 2015, 2.9 million in 2019, and 1.7 million in 2022.[3] These figures illustrate a clear trend toward longer, drier, and more volatile fire years. Within the Municipality, wildfire frequency has risen, with more fires threatening homes and infrastructure than ever before. These evolving conditions continue to affect life safety, forest health, air quality, and overall community resilience. This plan represents a proactive step toward a more wildfire-resilient Anchorage, developed collaboratively by the Anchorage Fire Department and partner agencies.

1 https://experience.arcgis.com/experience/1170079e0aac464c87a0a5eb280cd6a4
2 2020 Census-Census Tract Reference Map
3 Grabinski, Z. & H. R. McFarland. Alaska's Changing Wildfire Environment 2.0 (2025). Alaska Fire Science Consortium, International Arctic Research Center, University of Alaska Fairbanks. www.frames.gov/afsc/acwe

Mutual Agreement Page

The Municipality of Anchorage Community Wildfire Protection Plan (MOA CWPP) has been developed under the following guidelines:

- It was a collaborative and inclusive effort.
- It identifies and prioritizes areas for hazard reduction and recommends mitigation methods to improve the fire survivability of people, property, and the environment.
- It recommends measures to reduce the ignitability of structures throughout the area.

The following entities confirm that the guidelines listed above have been met and mutually agree with the content of this Community Wildfire Protection Plan:

---

Chief of Fire Operations, Alaska Division of Forestry & Fire Protection

---

Fire Chief, Anchorage Fire Department

---

Fire Chief, Chugiak Volunteer Fire and Rescue Department

---

Fire Chief, Girdwood Fire and Rescue Department

---

Director, Anchorage Office of Emergency Management

---

Anchorage Field District Manager, Bureau of Land Management

---

Mayor of Anchorage

---

Chair, Anchorage Assembly

---

Forest and Fire Management Officer, US Forest Service

**In accordance with AK-DOF guidelines, this CWPP should be revised continuously as conditions change, but at a minimum, reviewed in three (3) years by 12/31/28 and updated in five (5) years by 12/31/30. It will expire in ten (10) years by 12/31/35.**

# Collaborators and Contributors

The organizations listed below contributed to the development of the CWPP. The participation of their representatives is greatly appreciated.

- Municipality of Anchorage (MOA)
  - Anchorage Fire Department
  - Anchorage Geographic Data & Information Center
  - Anchorage Health Department
  - Anchorage Office of Emergency Management
  - Anchorage Office of the Mayor
  - Anchorage Parks & Recreation
  - Anchorage Police Department
  - Anchorage School District
  - Anchorage Solid Waste Services
  - Anchorage Traffic Engineering Department
  - Anchorage Water and Wastewater Utility
- Chugiak Volunteer Fire and Rescue Department
- Girdwood Fire and Rescue Department
- State of Alaska Division of Forestry & Fire Protection
- Alaska Department of Fish & Game
- Alaska Venture Fund
- Bureau of Land Management
- Chugach Electric Association
- Chugach State Park
- Eagle River/Chugiak Parks & Recreation
- Girdwood Parks & Recreation
- Heritage Land Bank
- Joint Base Elmendorf-Richardson
- Matanuska Electric Association
- National Park Service
- National Weather Service
- UAA Institute of Social and Economic Research
- U.S. Fish & Wildlife Service
- U.S. Forest Service
- Native Village of Eklutna

Each of the collaborators contributed in the following ways:

- Provided and aided in the review of CWPP content
- Identified areas of concern, organizational readiness, and availability of suppression resources
- Shared relevant planning and response strategies
- Provided content related to fire history and fuels management
- Provided insight into community member priorities
- Planned, supported, and participated in community engagement activities

# Introduction

## About this Report

This Community Wildfire Protection Plan (CWPP) was developed for the Municipality of Anchorage in collaboration with the Anchorage Fire Department (AFD), the State of Alaska Division of Forestry & Fire Protection (AK-DOF), and other interagency partners. This publication was made possible through funding from the U.S. Department of Agriculture, Forest Service, provided via Congressionally Directed Spending (Award No. 23-DG-11100106-900). The Municipality of Anchorage extends its sincere appreciation to the Forest Service for its partnership and continued investment in the community.

This CWPP focuses primarily on the Municipality's Wildland-Urban Interface (WUI) areas. The scale and diversity of the Area of Interest (AOI) necessitate separate ratings and recommendations for each Suppression Planning Unit (SPU); however, all SPUs share a common government structure, and analyses and recommendations applicable to all are included at the end of this document and in the appendices*: Appendix A: Suppression Planning Units, Appendix B: Resident Handbook, Appendix C: Methodology, Appendix D: Mitigation Recommendations,* and *Appendix E: Community Engagement.*

For brevity and clarity, statements that apply to the entire municipality use the term "Anchorage." Unless otherwise specified, "northern communities" refers to areas north of the Anchorage Bowl, including Eagle River, Chugiak, and Eklutna, while "southern communities" refers to development along Turnagain Arm, including Girdwood and Portage.

Some recommendations in this plan may already be covered by existing state or local laws. The intent is not to restate those regulations but to emphasize actions most effective in reducing wildfire risk to people, property, and the environment. While this plan aligns with municipal, state, and federal standards where possible, its recommendations do not carry the force of law and may differ from existing codes. Legal obligations should not be inferred without explicit citation, and because regulations vary by jurisdiction, readers are encouraged to review applicable requirements for their area.

This plan presents the results of a study to identify and quantify wildland fire hazards within Anchorage's WUI. The WUI is defined as the area where wildland fuels could pose a fire hazard to urban or suburban development. The SPU Hazard Rating (SPUHR) system used in this analysis ensures a consistent, comparable evaluation of wildfire risk across all units. The study prioritizes areas with high residential density, life safety concerns, and structural ignitability.

Findings are based on an analysis of expected fire behavior and severity derived from a combination of computer modeling and field data. A summary of wildfire hazards affecting life safety and home preservation in each SPU is provided in *Appendix A: Suppression Planning Units*. These data help to inform the prioritization of mitigation efforts across the municipality. Based on this analysis, mitigation strategies and recommendations have been developed to guide land managers, community members, fire officials, and partner agencies in coordinated

planning and implementation. The intent of this plan is to help the Municipality and its partners define and execute actions that protect life, property, and critical infrastructure.

## Alaska Report Requirements

This Community Wildfire Protection Plan (CWPP) was collaboratively developed in response to the 2003 Healthy Forest Restoration Act (HFRA) which directs communities at risk for wildland fire to develop a risk assessment and mitigation plan.[4] The HFRA includes the following guidance:

> *The minimum requirements for a CWPP as described in the HFRA are: (1) Collaboration: A CWPP must be collaboratively developed by local and state government representatives, in consultation with federal agencies and other interested parties. (2) Prioritized Fuel Reduction: A CWPP must identify and prioritize areas for hazardous fuel reduction treatments and recommend the types and methods of treatment that will protect one or more at-risk communities and essential infrastructure. (3) Treatment of Structural Ignitability: A CWPP must recommend measures that homeowners and communities can take to reduce the ignitability of structures throughout the area addressed by the plan.*[5]

Additionally, the Alaska Interagency Wildland Fire Management Plan[6,] to which the Department of Natural Resources, on behalf of the State of Alaska Division of Forestry & Fire Protection, is a signatory, recognizes that each land-managing Federal and State agency and Alaska Native Claims Settlement Act (ANCSA) tribal corporation has distinct missions, goals, and objectives for its lands. To effectively prioritize and manage Alaska's wildland fires, the Plan emphasizes the need to consider the full spectrum of possible management responses, from aggressive suppression actions intended to contain and control fire growth, to limited monitoring of naturally ignited fires that are permitted to play their ecological role on the landscape. To accomplish this, jurisdictional agencies (those with land and resource management authority) and protecting agencies (those responsible for fire suppression) have collaboratively assigned one of four Wildland Fire Management Options (Critical, Full, Modified, and Limited) to nearly all lands in Alaska. The Municipality of Anchorage has been designated under the Critical management option. Pre-identified Wildland Fire Management Options allow fire managers to:

- *Quickly prioritize areas for protection actions and the allocation of available initial attack firefighting resources to achieve protection objectives.*
- *Optimize the ability to achieve land use and resource management objectives and integrate fire management, mission objectives, land use, and natural resource goals.*
- *Reinforce the premise that the cost of suppression efforts should be commensurate with the*

[4] https://www.fs.usda.gov/projects-policies/hfi/field-guide/web/page02.php
[5] ibid
[6]https://fire.ak.blm.gov/content/aicc/Alaska%20Statewide%20Master%20Agreement/3.%20Alaska%20Interagency%20Wildland%20Fire%20Managment%20Plan%20(AIWFMP)/Alaska%20Interagency%20Wildland%20Fire%20Management%20Plan.pdf

*economic, social, and resource values identified for protection.*[7]

Wildland fire management in Alaska is a cooperative undertaking involving federal, state, local, tribal, Alaska Native Claims Settlement Act (ANCSA), community, and private landowner stakeholders. Under the Alaska Master Cooperative Wildland Fire Management and Stafford Act Response Agreement, jurisdictional (land-management) and protecting (suppression-focused) agencies coordinate to facilitate the exchange of personnel, equipment, supplies, services, and funds. The Agreement supports broad fire management functions including prevention, preparedness, public education, fuels treatment and hazard mitigation, fire planning, response strategy and tactics, suppression, and post-fire rehabilitation and restoration.[8]

Acknowledging growing complexity of fire management challenges, the 2023 Alaska State Hazard Mitigation Plan (SHMP) notes that future wildland fire conditions, including increasing temperatures, highlight an intensified pattern of wildfire activity across Alaska. Rapidly increasing temperatures and longer growing seasons are altering the state's environment, leading to increases in wildfire size, frequency, and severity in both tundra and boreal forest regions. Alaska has burned approximately 2.5 times more area in 2000-2020 than in the previous 20 years. The impacts of these fires are widespread, affecting ecosystems, infrastructure, and communities across the state. High levels of wildfire activity also strain available response resources, resulting in longer response times and reduced capacity statewide. To address these emerging challenges, Alaska's fire management agencies are rapidly adapting. The use of remote sensing (including satellite imagery), advanced geospatial modeling, and data-driven decision making have become valuable tools for Alaska's fire experts. However, these tools complement rather than replace experience; wildland firefighting remains as much an art as a science, relying on the skill and judgment honed through years of hands-on response. .[9]

Additionally, the Statewide Operating Plan (SOP) is applicable to all signatory agencies of the Alaska Master Agreement (AMA). Its purpose is to address statewide issues related to cooperation, interagency working relationships and protocols, financial arrangements, sharing of resources, and joint activities/projects.[10]

Jurisdiction agencies (as identified in the Alaska Master Agreement) are responsible for all planning documents (e.g., land use plans, resource management plans, fire management plans, and decision support documents) for a unit's wildland fire and fuels management program.[11]

---

[7]https://fire.ak.blm.gov/content/aicc/Alaska%20Statewide%20Master%20Agreement/2.%20Alaska%20Statewide%20Operating%20Plan/Alaska%20Statewide%20Operating%2 0Plan.pdf

[8] Ibid

[9] https://ready.alaska.gov/Documents/Mitigation/SHMP/2023 State of Alaska Hazard Mitigation Plan.pdf

[10] https://ready.alaska.gov/Documents/Mitigation/SHMP/2023 State of Alaska Hazard Mitigation Plan.pdf

[11]https://fire.ak.blm.gov/content/aicc/Alaska%20Statewide%20Master%20Agreement/2.%20Alaska%20Statewide%20Operating%20Plan/Alaska%20Statewide%20Operating%2 0Plan.pdf

# MOA Community Wildfire Protection Plan

Protecting agencies (as identified in the Alaska Master Agreement) are responsible for implementing the actions documented and directed by the appropriate planning and decision support documents for initial and extended attack on wildland fire incidents. They provide supervision and support including operational oversight, direction, and logistical support to incident management teams (IMTs).[12]

The State of Alaska Forest Action Plan (FAP) identifies and prioritizes areas where forests matter most to Alaska's people including forest lands and wildland urban interface areas that have been identified through the robust Alaska Interagency Wildland Fire Management Plan as having resources requiring fire protection; private forest lands including Alaska Native corporation lands; and state forests and state land classified for forestry. This plan also highlights the following key goals relevant to fire management on State of Alaska lands:

1. *Cultivate fire adapted communities*
2. *Manage fuels to reduce risk to communities and to benefit forest ecosystems*

Similarly, the 2023 National Cohesive Wildland Fire Management Strategy Addendum Update identifies new drivers impacting the wildland fire management system. As Federal agencies, states, tribes, and the private sector intensify collaborative efforts to meet the challenge of the wildland fire crisis, stakeholders are challenged to reach beyond individual, organizational, and historical silos to collectively define and understand their risk; set landscape-level and community-wide priorities; share and co- manage risk across boundaries and jurisdictions; accept some short-term risk for long- term benefit; and collectively invest in outcome-based approaches and activities, rather than outputs. The Addendum Update elevates critical issues presenting key challenges that are not limited to one agency or organization. It provides new guidance for stakeholders addressing contemporary wildland fire challenges and aims to "safely and effectively extinguish fire, when needed; use fire where allowable; manage natural resources; and collectively, learn to live with wildland fire." The updated National Cohesive Strategy goals include:

1. *Resilient Landscapes – Landscapes, regardless of jurisdictional boundaries are resilient to fire, insect, disease, invasive species and climate change disturbances, in accordance with management objectives.*
2. *Fire Adapted Communities – Human populations and infrastructure are as prepared as possible to receive, respond to, and recover from wildland fire.*
3. *Safe, Effective, Risk-based Wildland fire Response – All jurisdictions participate in making and implementing safe, effective, efficient risk-based wildland fire management decisions.*[13]

Ultimately, the Community Wildfire Protection Plan (CWPP) process aligns with the goals outlined by the National Cohesive Strategy and the State of Alaska Forest Action Plan, and

[12]https://fire.ak.blm.gov/content/aicc/Alaska%20Statewide%20Master%20Agreement/2.%20Alaska%20Statewide%20Operating%20Plan/Alaska%20Statewide%20Operating%2 0Plan.pdf

[13] https://www.forestsandrangelands.gov/documents/strategy/natl-cohesive-wildland-fire- mgmt-strategy-addendum-update-2023.pdf

offers prescriptive recommendations based on feedback gathered at the community level, while also referencing Fire Management Response Guidance from the AIWFMP, the Stafford Act and the SHMP. This collaborative planning process assists communities in developing an appropriate and desired wildland fire protection plan to guide future mitigation efforts. Completion of this CWPP involved the following steps:

1. *Identify stakeholders, land management agencies, and interested parties.*
2. *Review previous wildfire and other relevant plans for alignment with the CWPP.*
3. *Establish a community planning area.*
4. *Develop a community risk assessment.*
5. *Ongoing opportunities for community input through surveys, public meetings and a dedicated website.*
6. *Address priorities through stakeholder meetings and public input.*
7. *Development of an action plan and task-matrix.*
8. *Finalization of the plan with public community meetings throughout the process.*

For details on community and stakeholder engagement *see Appendix E: Community Engagement.*

## Definitions and Acronyms

For purposes of this report, the following definitions apply:

**Area of Interest (AOI) -** refers to the total geographic area covered by the study area. The AOI for this CWPP includes the entirety of the Municipality of Anchorage as defined by the US Census Bureau and depicted in the map in Figure 1 – Municipality of Anchorage CWPP AOI.[14] The municipality ranges from Ingram Creek along the Seward Highway to the Knik River bridge along the Glenn Highway, and includes the communities of Girdwood, Eagle River and Chugiak. The areas of wildland urban interface (WUI) extend throughout many developed neighborhoods.

**Hillside -** although often used to describe a specific geographic area within the municipality, for the purposes of this document, (the) hillside refers to land areas situated along mountainsides, a topographical rather than geographic reference, found in multiple locations throughout the municipality.

**Anchorage Bowl -** the central and most densely populated residential, commercial, and civic core of the municipality.

**Northern Communities -** areas of development north of the Anchorage bowl; includes Eagle River, Chugiak, Eklutna, and surrounding neighborhoods.

[14] 2020 Census-Census Tract Reference Map

**Southern Communities -** areas of development south of the Anchorage Bowl; includes Turnagain Arm communities, Girdwood, and Portage.

**Area of Special Interest (ASI)** - non-residential area having a profound effect on wildfire hazards and/or hazard mitigation for one or more of the SPUs in the AOI. ASIs may also be non-residential areas of special cultural significance threatened by fire.

**Suppression Planning Units (SPUs)** – areas in the MOA with the highest residential density that have similar dominant wildfire hazards and are geographically contiguous. Boundaries are based on factors relating to wildfire propagation and impacts including, structure density, structural flammability, fuels, topography, and suppression resources. Boundaries are not based on political, homeowner association, Community Council, or traditional neighborhood boundaries. Non-residential land such as large commercial or government-owned tracts have been excluded. It is important to note that a residence outside an SPU is not excluded from the CWPP; the plan covers the entire Municipality. The SPU boundaries and SPU hazard ratings (SPUHR) are shown in **Error! Reference source not found.** and *Appendix A: Suppression Planning Units*[5].

**Hazard -** the physical and environmental conditions that influence the potential for ignition, fire spread, and fire intensity. It reflects the presence and characteristics of fuels, terrain, resistance to control, and other factors that affect how readily a wildfire can start and how severely it may burn.

**Home Ignition Zone (HIZ)** – the home and the area within 100 feet surrounding it, including all vegetation, landscaping, and other fuels that could contribute to structural ignition during a wildfire.[15] The area may be extended to 200 feet to compensate for topographic conditions. For the purposes of this CWPP, the area within 100 feet of the home or to the edge of the property line, whichever is less, is the HIZ.

**SPU Hazard Rating (SPUHR)** - a consistent, comparative measure of wildfire hazard across all SPUs, based upon a multifaceted analysis outlined in *Appendix C: Methodology*.

**Interagency Fuel Treatment Decision Support System (IFTDSS)** – a tool developed by the U.S. Forest Service that models how a wildfire might behave based on local terrain, weather, and vegetation. When paired with Landscape Burn Probability (LBP) analysis, it helps show how likely an area or group of homes is to be affected by an approaching wildfire.

**Landscape Burn Probability (LBP)** - the result of an evaluation of the likelihood that a fire will occur by combining two models into one landscape map.

**ABoVE (Arctic-Boreal Vulnerability Experiment)** - an integration of satellite data, field studies, and modeling used to analyze vegetation patterns, permafrost dynamics, wildfire behavior, and other factors influencing the resilience of northern landscapes. ABoVE is used in this document

15 https://www.nwcg.gov/publications/pms205/nwcg-glossary-of-wildland-fire-pms-205

as a source for vegetation data that contributed to the analysis of wildfire hazard described in *Appendix C: Methodology*.

**Burn Probability** – the likelihood that a specific location will burn during a given time, based on simulations of wildfire ignition, spread, and environmental conditions such as fuels, weather, and topography.

**Remote Automatic Weather Stations (RAWS)** – strategically placed remote-sensing weather stations that measure wind speed and direction, air temperature, precipitation, relative humidity, solar radiation, and fuel moisture. The data is collected hourly and forwarded to a computer system at the National Interagency Fire Center (NIFC)[16].

**Risk** – The definition of risk varies widely. In some cases, it involves the probability of a wildfire event capable of severe negative effects on values. In other cases, it is synonymous with the predicted severity of undesirable fire effects. Due to the lack of agreement regarding a precise definition, the study does not use the term "risk", other than in the context of v*alues at risk*. For the rest of this report, the term "Hazard" is used to describe the predicted severity of fire effects and "Probability" to describe the likelihood of a significant wildfire occurrence.

**Values at Risk (VAR)** – the structures or areas identified as important to the sustainability of life in the study area (e.g., life safety, property conservation, and critical infrastructure).

**Wildland-Urban Interface (WUI)** – the geographical area where human development meets or intermixes with undeveloped wildlands. While this document uses the term WUI to refer to both, the WUI is often distinguished into two types based on housing densities:

- Interface: High-density development adjacent to undeveloped wildland vegetation.
- Intermix: Lower-density housing mingled with undeveloped wildland vegetation.

## How to Use This Plan

This study summarizes the technical analysis of wildfire probability and hazard for the Municipality of Anchorage and the Suppression Planning Units (SPUs) located within the Wildland-Urban Interface (WUI) areas of the municipality. The primary emphasis of this plan is on recommendations designed to mitigate wildfire hazard, including a discussion of response capabilities, suppression and mitigation resources, and other relevant topics, which follow the technical analysis. The study included the involvement of many stakeholders and seeks to align the recommendations herein with the plans of collaborating agencies. This report also provides a brief discussion of Areas of Special Interest (ASI) and a list of grant funding resources.

To keep the plan clear and concise, some information developed for this project is provided in separate appendices. This approach allows interested readers to access detailed material

[16] https://www.nifc.gov/about-us/what-is-nifc/remote-automatic-weather-stations

without requiring all readers to navigate a single, overly lengthy document. More detailed information is included in the appendices as follows:

- 

*Appendix A: Suppression* Planning Units*.*

- Appendix A:  This appendix contains a hazard summary for each of the SPUs within the CWPP AOI. The summaries are useful for briefing residents, outside responders, or consultants who are not familiar with the characteristics of a given SPU.
- *Appendix B: Resident Handbook.* This appendix offers residents a straightforward guide to living safely in wildfire-prone areas: how to prepare, protect what matters most, and respond if evacuation becomes necessary. It outlines key steps from the Ready-Set-Go program and provides practical direction for reducing hazards within the Home Ignition Zone through structure hardening and defensible space creation. These principles apply to all residents within the Area of Interest.
- *Appendix C: Methodology.* This includes technical information regarding the methodology employed to generate the fire behavior analysis and SPUHR.
- *Appendix D: Mitigation Recommendations.* A consolidated list of the plan's recommendations, shown in both map and table formats. It includes action items derived from the study and from stakeholder input.
- *Appendix E: Community Engagement.* This appendix describes the community engagement process, including the materials, meetings, and surveys utilized to gather input and feedback from stakeholders.

The placement of information in an appendix rather than in the main plan does not diminish its importance. Each appendix contributes to a full understanding of Anchorage's wildfire threat and helps identify where and how to focus mitigation efforts to protect life, property, and the environment. This plan emphasizes wildfire hazards in the Wildland Urban Interface (WUI), in areas where residential development is most concentrated. It also recognizes that unpopulated areas, individual homes in wildland settings, commercial facilities, and government lands may face similar risks. Although these areas are beyond the primary scope of this analysis, the recommendations and principles outlined in this plan remain broadly applicable across the municipality.

## Goals and Objectives

Strategic goals for this project included the following:

1. Improve life safety with respect to wildfire hazards threatening community members, visitors, and responders.
2. Evaluate and recommend methods to mitigate undesirable fire effects on property, infrastructure, and the environment.
3. Evaluate previous and ongoing mitigation efforts, if applicable, in the study area.

To accomplish these goals, the following objectives were identified:

1. Provide a scientific analysis of the fire behavior potential across the study area and quantify factors contributing to the values at risk.
2. Group the most densely populated areas into residential SPUs that represent relatively similar wildfire hazard.
3. Using hazard ratings, field assessments, and modeling, recommend and prioritize actions to reduce those hazards.

Other desired outcomes included:

1. Promote wildfire hazard awareness – Assess the likelihood of significant ignition and the potential severity of wildfire impacts to raise public awareness, support community action to mitigate identified hazards, and emphasize the shared personal responsibility of all residents to follow the report's recommendations
2. Improve wildfire prevention through education **–** Support community awareness through an educational document that can help reduce the risk of unplanned human-caused ignitions. Education can limit injury, property loss, and unnecessary death.
3. Foster a collaborative approach at all levels of the planning and execution process **–** Involve stakeholders to facilitate the building of strong relationships between both individuals and agencies involved in executing the plan's recommendations.
4. Facilitate and prioritize appropriate hazardous fuel removal projects – Organizing and prioritizing fuel management actions can provide stakeholders with the tools and knowledge to ensure all projects are funded and maximize the preservation of life and property.
5. Identify and promote actions designed to improve suppression response - The identification of SPUs that will improve coordinated suppression and evacuation response.

# Study Area Overview

## Introduction and Geographic Setting

The Municipality of Anchorage is a consolidated city-borough located in southcentral Alaska along the northeastern edge of Cook Inlet. Encompassing approximately 1,961 square miles of land and water, Anchorage is one of the largest municipal jurisdictions in the United States by area.[17] The municipality includes the city of Anchorage as well as a diverse array of communities and landscapes, ranging from the northern communities of Eagle River and Chugiak to the southern rural and mountainous areas of Girdwood and the Turnagain Arm communities. All references to "Anchorage", "the MOA" or "the MOA CWPP AOI" include these communities in the aggregate. Where relevant, specific attributes and recommendations will be described.

### Regional Areas

The Municipality of Anchorage encompasses a complex landscape with diverse communities, environments, and ways of living that shape how wildfire mitigation and resilience are approached. Strategies that are effective in one area may not be appropriate in another. Likewise, some mitigation activities may share similar objectives but require different methods, tools, or prescriptions to achieve meaningful reductions in wildfire risk. To address this diversity, recommendations have been organized into three regional areas—northern, bowl, and southern—each with its own set of Regional Recommendations tailored to local conditions. Detailed descriptions and considerations for these recommendations are provided in *Appendix D: Mitigation Recommendations.*

Anchorage is geographically framed by significant natural features. The Chugach Mountains rise sharply to the east, forming a rugged and visually dominant boundary that also contributes to local microclimates and varying fire behavior. To the north and south, the Knik and Turnagain Arms of Cook Inlet define the municipality's coastal margins, characterized by expansive tidal mudflats and dramatic tidal fluctuations.

Turnagain Arm is known for one of the highest tidal ranges in the world, bore tides, strong winds, and erratic weather.[18] The municipality also includes substantial wildland areas, notably large portions of Chugach State Park, Chugach National Forest, BLM Lands, MOA Parks & Recreation, Eagle River/Chugiak Parks & Recreation, and Girdwood Parks & Recreation, as well as the federally managed lands of Joint Base Elmendorf-Richardson (JBER). These lands contribute to a diverse wildland-urban interface (WUI) where residential development, recreational use, and natural resource management intersect wildfire risk. Specific regional

[17] Municipality of Anchorage, Planning Department. Anchorage Comprehensive Plan Update (2023)
https://www.jber.jb.mil/About-Us/
https://www.portofalaska.com/about-us/
[18] https://www.visitgirdwood.com/chamber/about-us

differences are presented in the sections of this plan where that information is relevant to wildfire risk and mitigation recommendations. Physical assessments, research, modeling and interviews have been performed in all three regions and given equal consideration to mitigation. See the map below.

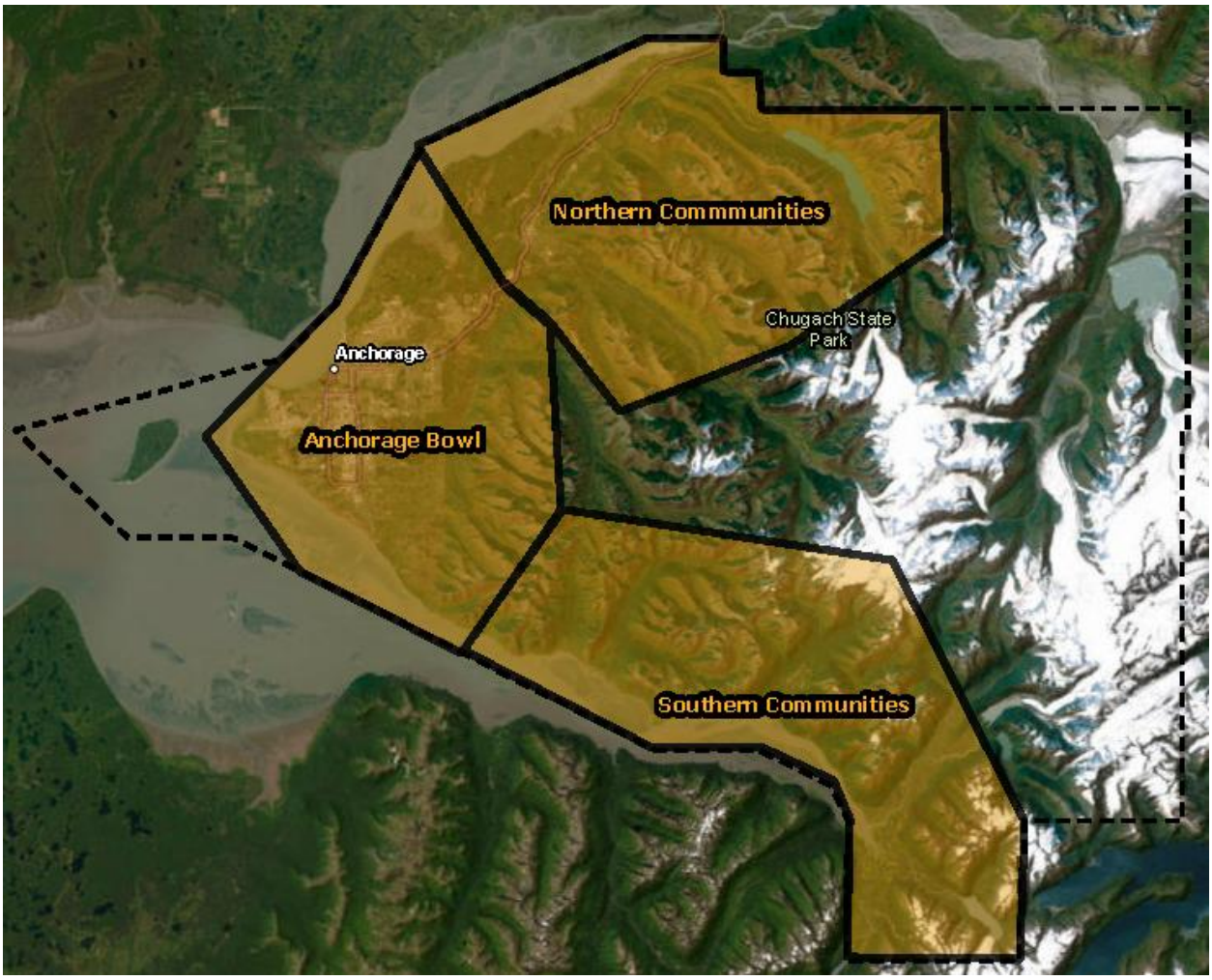



**Figure 2 – MOA Treatment Regions**[19]

**Anchorage Bowl -** The contiguous area of development within the central portion of the MOA. This area represents the densely populated residential, commercial, and civic core of the municipality.

**Northern Communities -** Areas of development north of the Anchorage bowl; includes Eagle River, Chugiak, Eklutna and surrounding neighborhoods.

**Southern Communities -** Areas of development north of the Anchorage bowl; includes Turnagain Arm communities, Girdwood, and Portage.

[19] https://experience.arcgis.com/experience/1170079e0aac464c87a0a5eb280cd6a4

## Wildland–Urban Interface Characteristics

The Municipality of Anchorage is fundamentally a Wildland–Urban Interface (WUI) landscape. Dense natural vegetation frequently intermingles with residential, commercial, and infrastructure development, creating complex and varied wildfire exposure conditions across the jurisdiction.[20] Urban development is concentrated in the Anchorage Bowl and along major corridors such as the Glenn and Seward Highways. Neighborhoods made up of homes, public facilities, and infrastructure, often directly abut forested and undeveloped land and are at risk from advancing fire fronts. Vegetation in these zones includes highly flammable fuel such as black spruce, bluejoint reed grass, and mixed conifer–hardwood stands. Combined with increasing seasonal dryness, these fuels amplify fire behavior and hazard potential. Hillside gradients and ridge lines further influence fire spread patterns, sometimes enabling fires to bypass built infrastructure or challenge suppression efforts.

The pattern of Anchorage's WUI varies considerably across neighborhoods. Some areas exhibit a clear separation between forested land and development, while others are characterized by fragmented parcels of vegetation interwoven with homes, trails, and public amenities. Fuel-hazard mapping (see *Appendix C: Methodology*) highlights this variability, identifying neighborhoods with high structural exposure and limited spatial defensibility. Community-scale wildfire risk is also shaped by the layout of roads and access routes. In many areas, curving and narrow roads complicate evacuation and fire response. At the same time, trails and greenbelts that connect neighborhoods to natural areas may unintentionally serve as fuel corridors or ignition points.[21]

Anchorage's location also plays a pivotal logistical role within the state and beyond. It serves as Alaska's primary transportation hub, with critical infrastructure for air cargo, rail, and port operations. Ted Stevens Anchorage International Airport (TSAIA) was the 4th busiest cargo airport in the world in 2021, with 3.7 million metric tons of cargo enplaned, deplaned, or transited through the airport. Cargo flown via TSAIA is shipped to 83 communities across Alaska, 42 destinations in the Lower 48, and 16 international countries. TSAIA is an important stop for cargo planes bringing goods from Asia to North America.[22] The Don Young Port of Alaska moves goods consumed by 90 percent of Alaska's population supporting more than $14 billion in commercial activity in Alaska.[23]

Anchorage also plays a massive role in national security. The 673d Air Base Wing (ABW) comprises over 5,500 joint military and civilian personnel and supports and enables America's Arctic Warriors. In addition, the Wing provides medical care to over 35,000 joint service members, dependents, Veterans Affairs patients, and retirees throughout Alaska. The 673d ABW maintains $15 billion in infrastructure encompassing 85,000 acres, ensuring Joint Base

[20] Municipality of Anchorage, Wildfire Hazard Mapping Project. *Anchorage Fuel Hazard Mapping* (2022).
[21] https://akfireinfo.com/2025/05/01/state-forestry-fire-department-collaborate-to-reduce-wildfire-risk/
[22] https://aedcweb.com/report/tsaia_econ_impact_study/
[23] https://www.portofalaska.com/about-us/

Elmendorf-Richardson remains America's premier strategic power projection platform. This strategic position underscores the importance of resilience planning, particularly in the context of wildfire risk mitigation.[24]

## Demographics and Urban Layout

The Municipality of Anchorage is home to approximately 291,000 residents, making it Alaska's largest population center and accounting for nearly 40 percent of the state's total population.[25] Population density varies widely, from compact residential developments in midtown and east Anchorage to dispersed, large-lot housing in more rural areas.

Anchorage is one of the most culturally diverse cities in the United States, with more than 100 languages spoken in local schools.[26] Neighborhoods such as Mountain View, Fairview, and Muldoon represent some of the most diverse census tracts nationwide. This diversity also reflects varying levels of economic stability and social vulnerability. Certain areas, including Mountain View, Fairview, and Spenard, have higher concentrations of renters, lower household incomes, and limited English proficiency, which can affect access to preparedness resources and evacuation messaging during wildfire events. Conversely, there are other outlying communities that have higher incomes but face other challenges such as long travel distances, limited access/egress, and reduced fire protection coverage.

The median age of MOA residents is approximately 35. However, residents over age 65 represent nearly 12 percent of the population, which has implications on emergency response and evacuation planning. Households without vehicles, though fewer in number may also experience barriers during emergency events. This information is considered in the SPHUR ratings, see pages 16 & 17 in *Appendix C: Methodology*.

Anchorage's urban form includes a mix of high-density commercial centers, suburban-style neighborhoods, and rural residential areas. This patchwork of development within- and adjacent to- forested landscapes creates a wide variety of wildfire exposure conditions. Higher-density areas benefit from AWWU-serviced hydrant coverage and shorter emergency response times, while dispersed neighborhoods are more closely embedded in the wildland-urban interface.

[24] https://www.jber.jb.mil/About-Us/
[25] U.S. Census Bureau. *Decennial Census* (2020).
[26] https://www.adn.com/alaska-news/education/2018/04/22/these-are-the-languages-spoken-in-anchorage-students-homes/

**Table 1 - Vulnerability Indicators by Neighborhood[27]**

| Neighborhood | High Renter Pop. | Lower Income Levels | Limited English Proficiency | Higher % Seniors | Vehicle Access Limitations |
|---|---|---|---|---|---|
| Mountain View | Yes | Yes | High | Moderate | Moderate |
| Fairview | Yes | Yes | Moderate | Moderate | High |
| Muldoon | Yes | Mixed | High | Moderate | Moderate |
| Spenard | Yes | Yes | Moderate | Moderate | Moderate |
| Hillside | No | No | Low | High | Low |
| Chugiak | No | Mixed | Low | High | Low |
| Girdwood | No | Mixed | Low | High | Low |

[27] U.S. Census Bureau (2020), Anchorage Indicators (2012), Municipality of Anchorage Planning Department (2023).

# Anchorage Community Councils

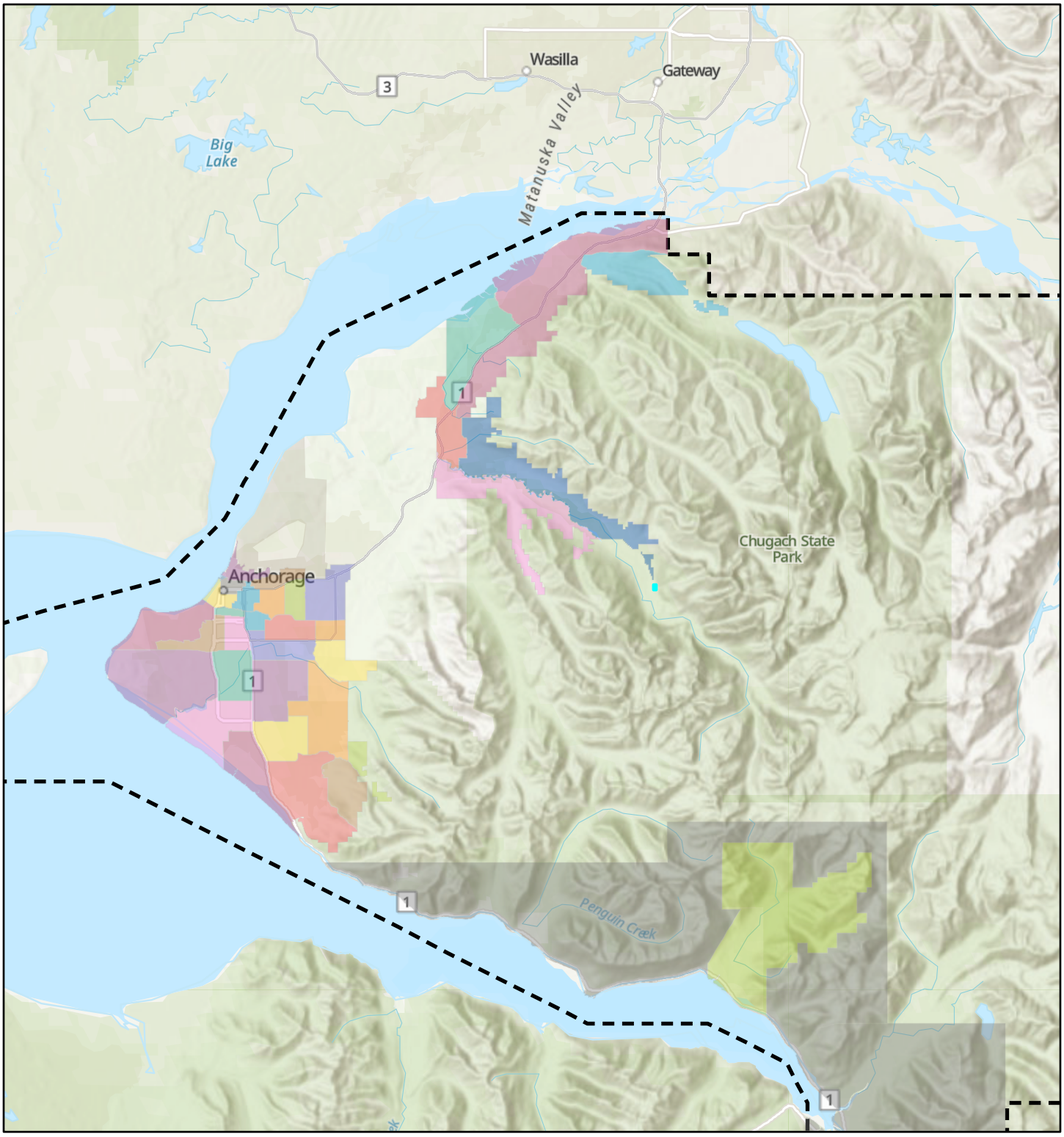



Figure 3 - MOA Community Councils

Community Councils
- Eagle River Valley
- Eklutna Valley
- Glen Alps
- Abbott Loop
- Airport Heights
- Basher
- Bayshore/Klatt
- Bear Valley
- Birchwood
- Campbell Park
- Chugiak
- Downtown
- Eagle River
- Fairview
- Girdwood
- Government Hill
- Hillside
- Huffman/O'Malley
- Midtown
- Mountain View
- North Star
- Northeast
- Old Seward/Oceanview
- Portage Valley
- Rabbit Creek
- Rogers Park
- Russian Jack Park
- Sand Lake
- Scenic Foothills
- South Addition
- South Fork
- Spenard
- Taku/Campbell
- Tudor Area
- Turnagain
- Turnagain Arm
- University Area
- Municipality of Anchorage Boundary



https://muniorg.maps.arcgis.com/apps/webappviewer/index.html?id=60eb4a8b1e38445487fb06817d904330

## Land Ownership and Use

Land ownership in the MOA is divided among municipal, state, federal, military, tribal, and private entities, creating a mosaic of influence on wildfire management, land use planning, and emergency coordination. Municipal lands include parks, greenbelts, and public facilities, while federal holdings include Joint Base Elmendorf–Richardson (JBER), Chugach National Forest, and Bureau of Land Management parcels.[28] [29] The State of Alaska manages extensive lands in the Chugach State Park system and along critical transportation corridors.[30] Private ownership is concentrated in residential, commercial, and industrial development throughout the MOA. Tribal entities and Native Corporations also hold culturally important lands and subsistence use areas, adding another layer of management considerations.[31]

**Table 2 - Land Ownership Distribution in the MOA[32]**

| Ownership / Management | Approximate Share of Land Area | Examples |
|---|---|---|
| Municipality of Anchorage | ~10% | Parks and Recreation lands, greenbelts, public facilities |
| State of Alaska | ~30% | Chugach State Park, state trust lands, highway corridors |
| Federal Government | ~40% | Joint Base Elmendorf–Richardson (JBER), Chugach National Forest, BLM parcels |
| Native Corporations / Tribal | ~5% | Cook Inlet Region, Inc. (CIRI), Eklutna, Inc., and associated tribal lands |
| Private Landowners | ~15% | Residential subdivisions, commercial districts, industrial areas |

[28] Municipality of Anchorage, Planning Department. *Land Use and Ownership Patterns* (2023)
[29] Bureau of Land Management. *Alaska Land Status Report* (2022).
[30] U.S. Forest Service. *Chugach National Forest Land Management Plan* (2020).
[31] Cook Inlet Region, Inc. (CIRI). *Annual Land Management Report* (2021).
[32] Municipality of Anchorage Planning Department (2023), Alaska Department of Natural Resources, U.S. Forest Service, Bureau of Land Management

# BLM AK Administered Lands

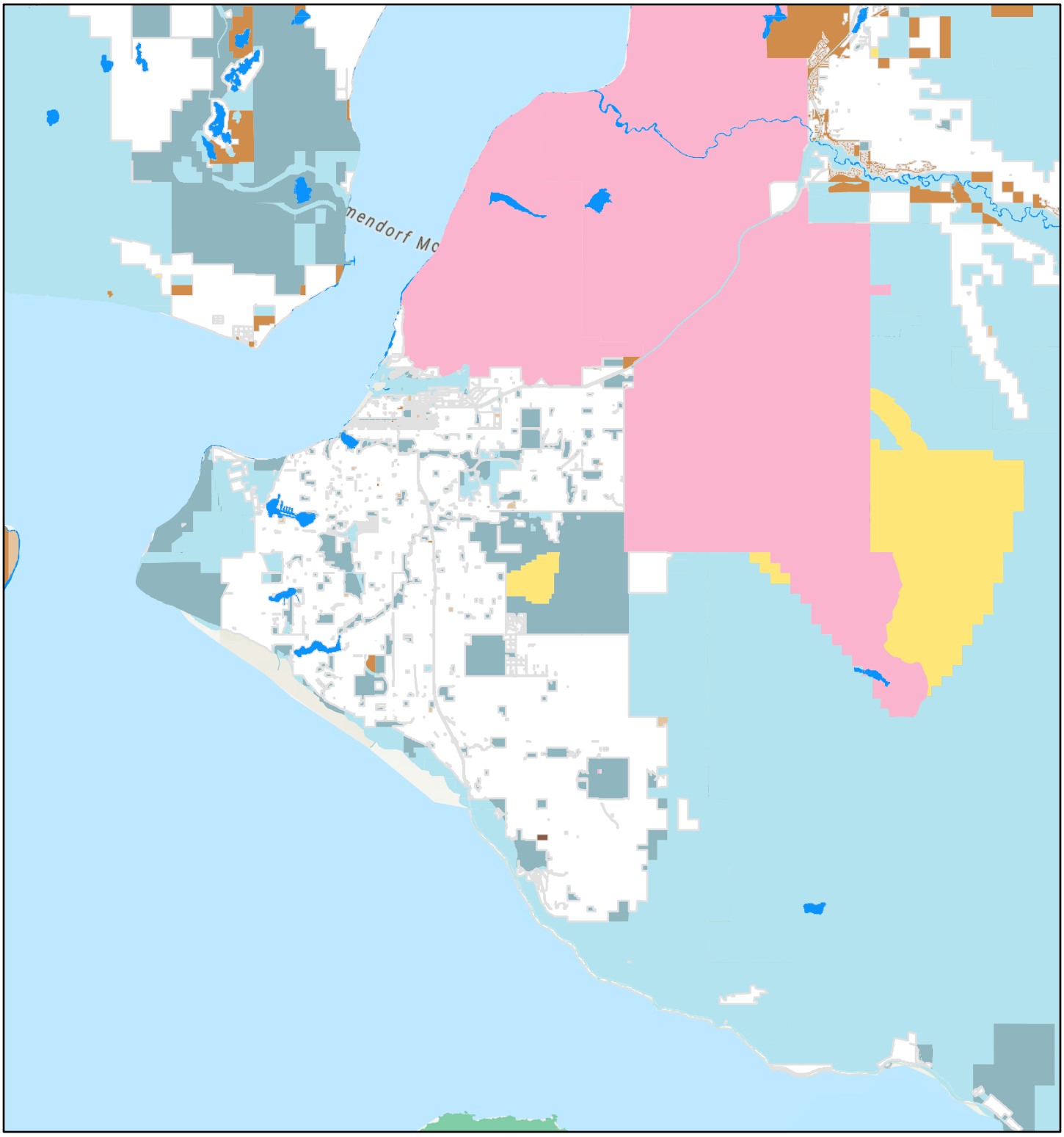



Figure 4 - BLM AK Administered Lands, Anchorage Bowl

- Bureau of Land Management
- Department of Defense
- Fish and Wildlife Service
- Forest Service
- Other Federal
- State
- Local Government
- Native Allotment
- Native Lands
- Private
- Water
- World_Hillshade

 https://www.arcgis.com/apps/mapviewer/index.html?url=https://gis.blm.gov/akarcgis/rest/services/Land_Management/BLM_AK_Administered_Lands_SMA/FeatureServer/0&source=sd

# BLM AK Administered Lands

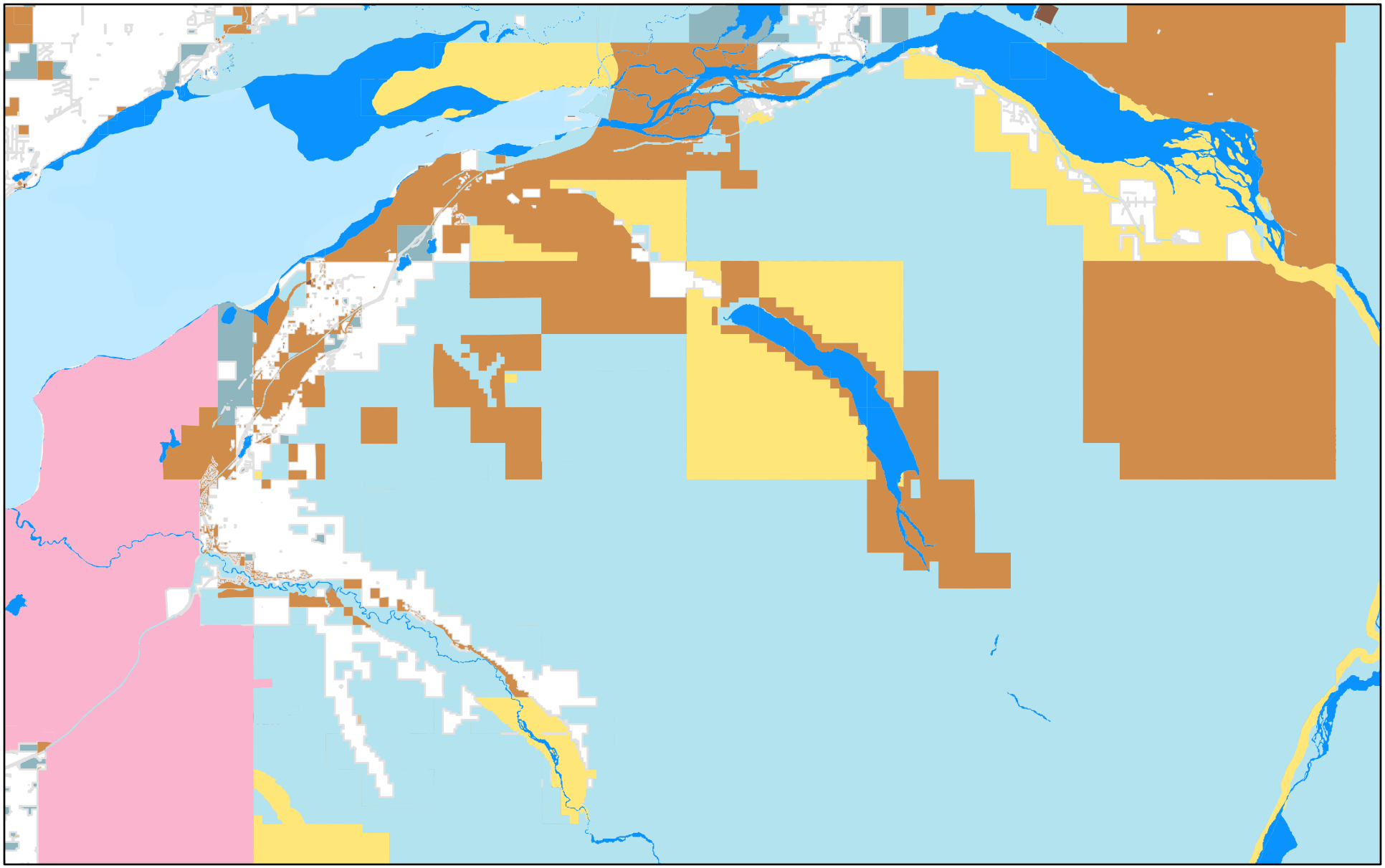



Figure 5 - BLM AK Administered Lands, Northern Communities



https://www.arcgis.com/apps/mapviewer/index.html?url=https://gis.blm.gov/akarcgis/rest/services/Land_Management/BLM_AK_Administered_Lands_SMA/FeatureServer/0&source=sd

# BLM AK Administered Lands

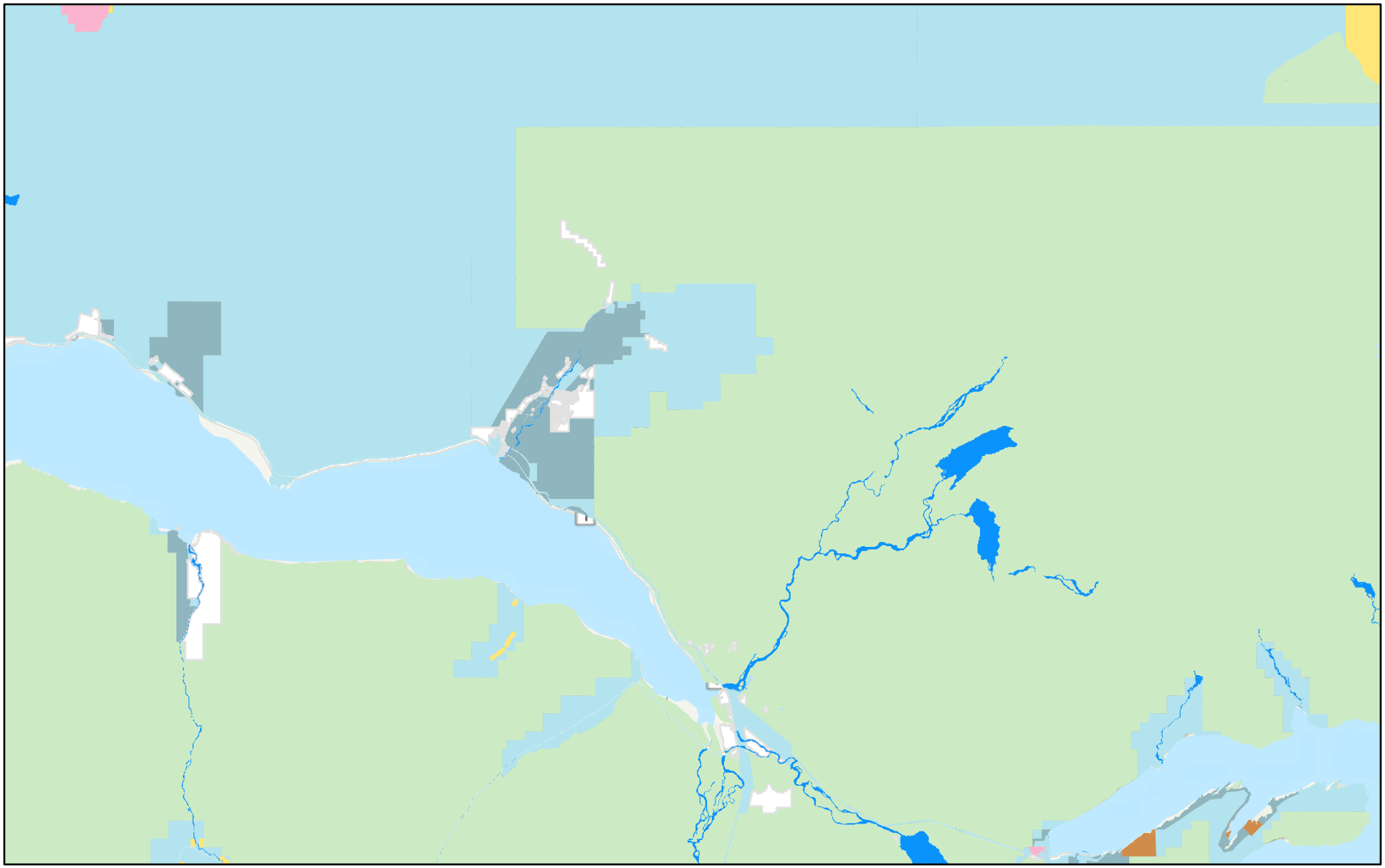



Figure 6 - BLM AK Administered Lands, Southern Communities



https://www.arcgis.com/apps/mapviewer/index.html?url=https://gis.blm.gov/akarcgis/rest/services/Land_Management/BLM_AK_Administered_Lands_SMA/FeatureServer/0&source=sd

A blend of high-density urban development and surrounding natural lands creates an extensive wildland-urban interface, where homes, infrastructure, and businesses are near fire-prone vegetation. Anchorage's land base includes high-value assets and densely populated areas situated directly alongside forested landscapes, making collaborative stewardship a central component of community wildfire preparedness.

## Natural Resources and Recreation

Anchorage is defined by its proximity to abundant natural resources and outdoor recreation opportunities, which shape both community identity and land management priorities. The MOA has a vast expanse of natural areas, including forests, wetlands, lakes, rivers, and alpine landscapes. These resources provide ecological services such as clean water, fish and wildlife habitat, and carbon storage, while also serving as the foundation for Anchorage's robust recreation economy. Residents and visitors rely on extensive trail systems, state parks, and municipal greenbelts for year-round access to hiking, skiing, fishing, and hunting. In neighborhoods throughout Anchorage, residential development intermingles with public open space, reinforcing the connection between daily life and the surrounding natural environment.

Anchorage's largest recreational asset is Chugach State Park, which encompasses nearly 495,000 acres and establishes the eastern boundary of the municipality.[36] The park stretches from coastal fjords near Girdwood to alpine ridgelines above the Anchorage Bowl and includes diverse ecosystems ranging from boreal forest to tundra.

[36] https://dnr.alaska.gov/parks/aspunits/chugach/chugachindex.htm


**Figure 7 – Chugach State Park[37]**

The extensive recreational infrastructure in the MOA also complicates wildfire preparedness. MOA Parks & Recreation manages over 250 miles of trails and 224 municipal parks which often act as informal travel corridors for fire, connecting undeveloped lands with neighborhoods and infrastructure.[38] Popular destinations such as trailheads, campgrounds, and picnic areas are points of high public use and potential ignition sources, which is exacerbated by illegal camping. Seasonal activities like campfires, off-road vehicle use, and backcountry access further increase the potential for human-caused ignitions, particularly during dry summer months. At the same time, these open spaces can sometimes function as fire breaks or staging areas for suppression response.

Within the Anchorage Bowl, Kincaid Park, Far North Bicentennial Park, and Russian Jack Springs Park provide thousands of acres of municipal greenspace adjacent to residential

[37] https://experience.arcgis.com/experience/1170079e0aac464c87a0a5eb280cd6a4
[38] https://www.muni.org/Departments/parks/Pages/default.aspx

neighborhoods. These areas are heavily used for recreation and contain continuous vegetation to include conifer trees, deciduous trees, and light flashy fuels (e.g., grass).

South on Seward Highway, Girdwood Parks & Recreation manages 10 parks and 13 miles of trails. Girdwood is also home to the Alyeska Resort.

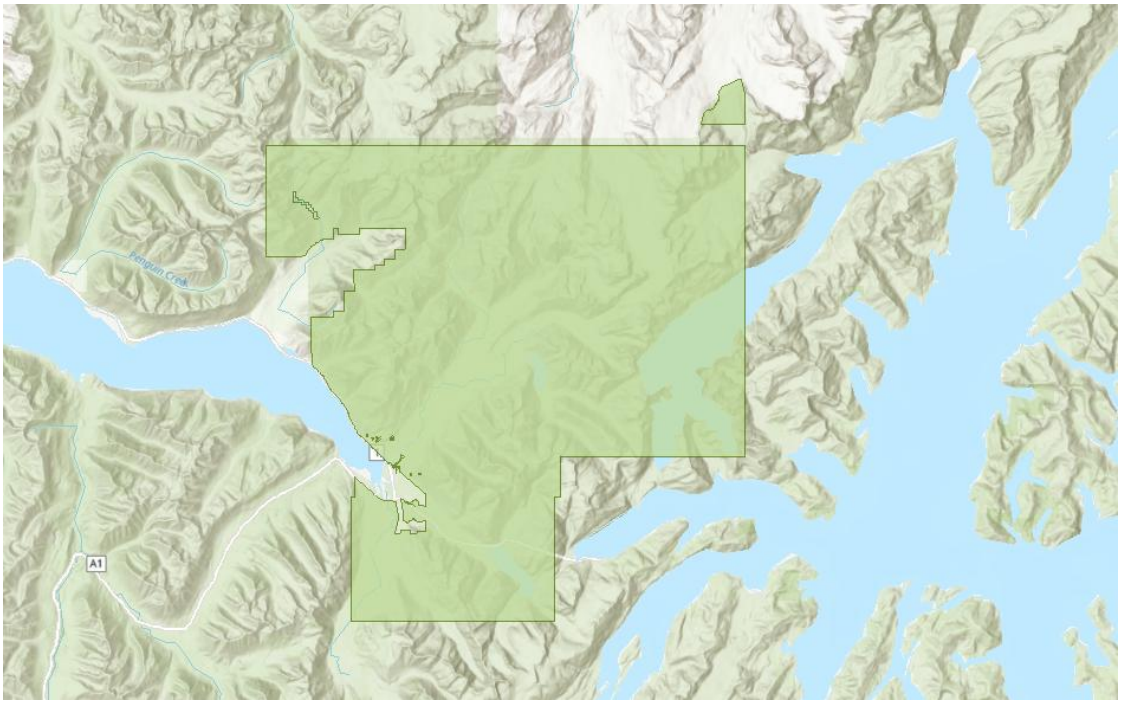



**Figure 8 - Chugach National Forest[39]**

North of the Anchorage Bowl, Eagle River/Chugiak Parks and Recreation serves the residents and visitors of Chugiak and Eagle River. Parks include over 2,500 acres of developed and undeveloped parkland across 29 park properties.[40]

Waterways such as Ship Creek, Campbell Creek, Chester Creek, Bird Creek, Glacier Creek and Eagle River support salmon fisheries and riparian habitats and serve as popular recreation corridors. While these waterways create natural breaks in vegetation, they are not always reliable fire barriers, as embers can cross narrow channels and ignite adjacent fuels. This overlap of recreational use and fire-prone vegetation highlights the importance of maintaining safe access and resilient landscapes across greenbelts and trail systems.

Anchorage's natural resources are integral to the quality of life for its residents and to its economy, but they also heighten wildfire risk by bringing people, fuels, and infrastructure into close contact. As a result, their management requires careful coordination among the

[39] https://usfs.hub.arcgis.com/datasets/74f7f30759ec4ba49ab54361d38c5a3a/about
[40] https://www.muni.org/Departments/ERparks/Pages/default.aspx

Municipality of Anchorage, the State of Alaska, federal land managers, and local user groups to balance recreation, conservation, and wildfire resilience.

## Hydrology

Anchorage's hydrology is shaped by a dense network of creeks, wetlands, and groundwater systems that intersect residential, industrial, and wildland areas across the municipality. There are 28 named watersheds within Anchorage, with 10 considered urban-focused and prioritized for monitoring and restoration by the Anchorage Waterways Council.[41] Prominent among these are Ship Creek and Campbell Creek, both originating in the Chugach Mountains and flowing westward through residential and industrial corridors before emptying into Cook Inlet. These waterways not only provide ecological and recreational benefits but also influence wildfire risk by serving as partial fire breaks, travel corridors for embers, and water sources for suppression activities.

Groundwater resources add further complexity to Anchorage's hydrologic system. SPUs along the eastern Anchorage Bowl that border the wildland interface often rely on private wells rather than the municipal water system, limiting water availability during wildfire events. These wells generally produce low to moderate flow rates, adequate for daily use, but insufficient for high-demand firefighting, or extended irrigation during dry periods. In SPUs such as Stuckagain, Hiland, Glen Alps, and parts of Hillside, groundwater is drawn from fractured bedrock aquifers that recharge slowly and yield inconsistently under drought or heavy use. This dependence on low-capacity wells challenges both defensible space maintenance and emergency response, as slow recharge and limited pump capacity restrict the ability to supply portable tanks or engines. Residents in these areas therefore face greater vulnerability during peak fire season and benefit most from proactive mitigation measures.

Ship Creek is one of the largest hydrologic features contained entirely within the municipality. It supports salmon runs, municipal water supply intakes, and popular recreational uses such as fishing and trail access. Because it flows directly through industrial and residential neighborhoods, Ship Creek also represents a critical natural corridor where wildfire, human use, and infrastructure converge. Campbell Creek provides equally important riparian habitat while crossing some of Anchorage's most populated neighborhoods.[42] Seasonal flow variations in these and other creeks are dominated by snowmelt and rainfall, creating high-flow events during spring and late summer but leaving lower flows during dry periods. These low-flow conditions may limit the ability of riparian zones to serve as natural firebreaks or reliable suppression water sources when wildfire risk is highest.

In Girdwood, Glacier Creek begins at the termini of several glaciers. From its head, the stream flows southwest to tidewater. In the upper valley, two other major melt- water streams flow into Glacier Creek; Crow Creek from the northwest and Winner Creek from the southeast. In

[41] https://www.anchoragecreeks.org/anchorage-s-waterways
[42] Municipality of Anchorage, Watershed Management Services. *Campbell Creek Watershed Study* (2009).

this area of confluence, the streams flow through narrow, deeply cut bedrock. This important environmental feature is referred to as the "Four Corners" area. A large system of muskegs (bog-like wetlands) is located near the Alyeska Resort, stretching northeast towards the Four Corners area and are joined by other creeks. These creeks form an extensive flood plain with beaver dams and other wetlands along California Creek. Wetlands surround the lower portion of this creek.[43]

In the northern communities, the two largest watersheds are the Eklutna and Eagle Rivers. The Eklutna drainage basin encompasses approximately 171 square miles above the Old Glenn Highway. The watershed extends from the Eklutna Glacier in the Chugach Mountains to the Knik Arm. The topography of the area is very rugged, with elevation ranging from near sea level to over 8,000 feet. The upper end of the watershed contains several glaciers, including the Eklutna Glacier. Downstream of the Eklutna Glacier, the watershed consists of a steep-sided glaciated valley with widths varying from between 2 miles at elevation 4,800 feet to about 400 feet at elevation 1,000 feet. Eklutna Lake covers most of this valley averaging in depth of 120 feet. Its water levels are regulated by the Eklutna Purchasers Association, which draws water from an underwater tap through the Eklutna Hydroelectric Project. Another contributor to water level fluctuation is an earth-filled dam with an uncontrolled spillway at the outlet of the lake that was constructed to increase the amount of water storage available. This dam and water diversion eliminate the lake's outflow into the Eklutna River under normal conditions in most years. [44]

Eagle River begins at Eagle Glacier in Chugach State Park and follows the Eagle River Valley near the Crow Pass trail in Chugach National Forest to the community of Eagle River. Downstream of the trail crossing, the river flows by, but at considerable distance from, the Eagle River Nature Center, the visitor center for the park. The nature center lies along the North Fork Eagle River, which runs roughly parallel to the main stem for several miles. Eagle River Road, like the North Fork, lies to the right of the main stem, facing downstream. After receiving the North Fork, the Eagle River receives the South Fork Eagle River from the left before passing under Eagle River Loop Road. On its lower reaches, the river flows by the Eagle River community, which is on the right, and Eagle River Campground, on the left, before leaving the state park. It then passes under Glenn Highway and flows through Joint Base Elmendorf-Richardson to Cook Inlet. [45]

[43]https://www.muni.org/Departments/operations/streets/Service/SiteAssets/Pages/GirdwoodBoardofSupervisors/Girdwood%20Valley%20Trails%20Management%20Plan%202020%20Revision.pdf
[44] https://eklutnahydro.com/wp-content/uploads/2020/03/NWS-Eklutna-Hydrology-Report_Draft.pdf
[45]https://en.wikipedia.org/wiki/Eagle_River_(Cook_Inlet)#:~:text=Table_title:%20Eagle%20River%20(Cook%20Inlet)%20Table_content:%20header:,%E2%80%A2%20coordinates%20%7C%20:%2061%C2%B019%E2%80%B243%E2%80%B3N%20149%C2%B044%E2%80%B219%E2%80%B3W%20%7C

The combined influence of hydrologic features, vegetation, and infrastructure highlights the need for integrated planning to ensure that Anchorage's waterways continue to provide both ecological benefits and wildfire resilience.[46]

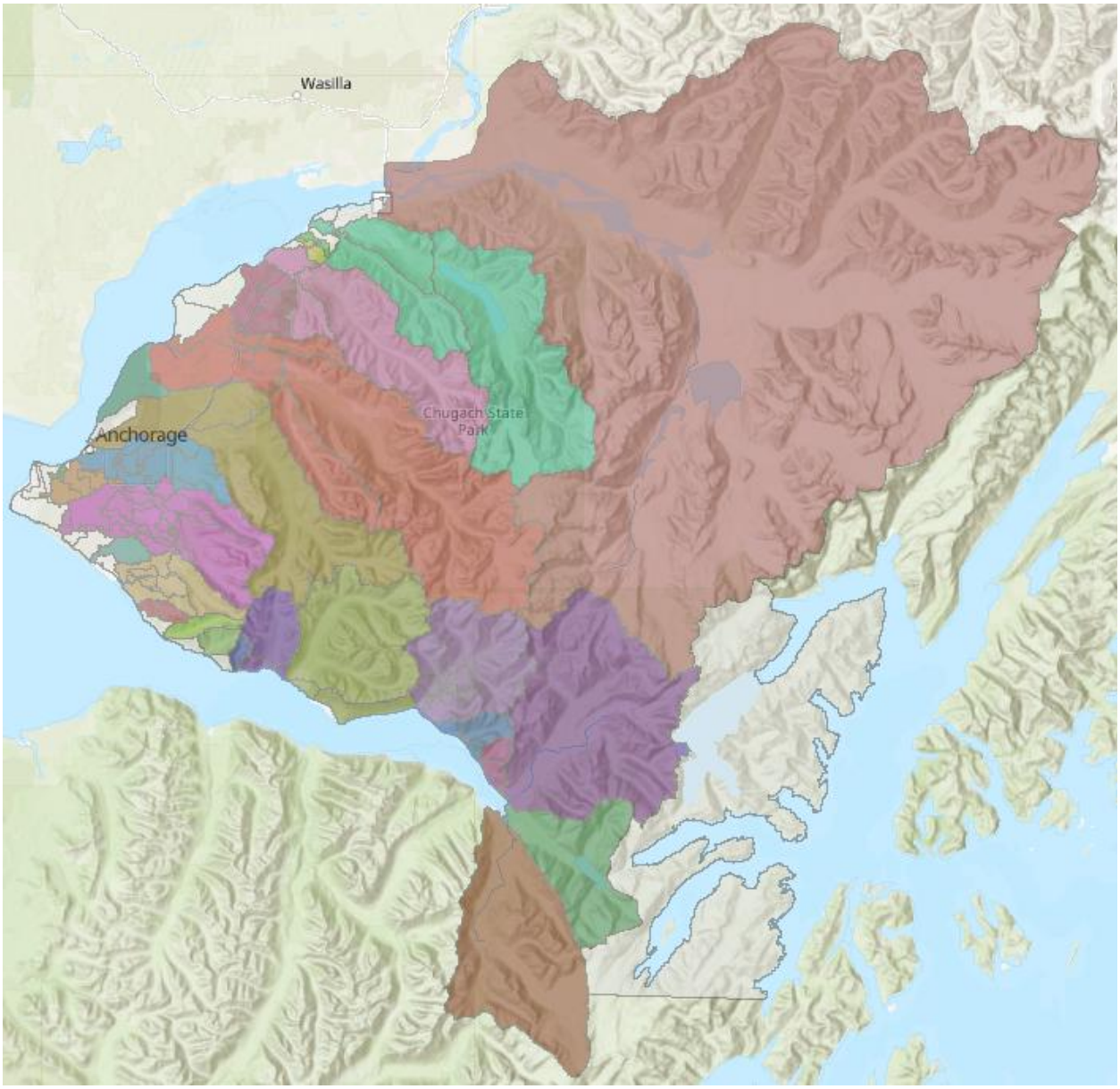



**Figure 9 – Watersheds of MOA[47]**

## Infrastructure and Public Services

[46] Data sources: Anchorage Waterways Council, Municipality of Anchorage Hydrology Section, U.S. Geological Survey, Anchorage Water and Wastewater Utility (AWWU).
[47] https://experience.arcgis.com/experience/1170079e0aac464c87a0a5eb280cd6a4

Anchorage's infrastructure and public services form the backbone of its capacity to prepare for, respond to, and recover from wildfire events. The municipality houses an extensive network of transportation corridors, utilities, and emergency service facilities that connect residents across a large and diverse geographic area. These systems are essential to community function, but their location within, or adjacent to, wildland areas make them vulnerable to wildfire impacts. Anchorage's transportation system includes the Glenn Highway, Seward Highway, and the Alaska Railroad, which link neighborhoods to the broader state and provide critical evacuation routes. Within the municipality, roadways range from high-capacity arterials to narrow, winding, and unmaintained routes. The Don Young Port of Alaska and Ted Stevens Anchorage International Airport serve as statewide transportation hubs, and both are adjacent to areas of dense fuels.

The municipality's utility infrastructure is extensive, with power transmission lines, natural gas distribution systems, and water supply networks serving both urban and rural communities. Anchorage Water and Wastewater Utility (AWWU) provides municipal water service across much of the Anchorage including hydrant coverage that enhances suppression capacity in high-density areas.[48]

Emergency response services in Anchorage are led by the Anchorage Fire Department (AFD), supported by Chugiak Volunteer Fire & Rescue Department (CVFRD) and Girdwood Fire and Rescue Department (GFRD), as well as coordination with Joint Base Elmendorf–Richardson (JBER) and AK-DOF fire units. The AFD Wildfire Division provides specialized capacity for wildfire suppression, hazardous materials response, and emergency medical services. Recent program investments, including USDA Forest Service grants, have strengthened the grant funded Wildfire Division.

Other critical public services include law enforcement, health care facilities, and communication systems. Hospitals and clinics are primarily concentrated in central Anchorage, creating reliance on critical 24/7 transport operations for outlying communities and greater Alaska during emergencies.

Communication infrastructure, including cell towers and radio networks, provide broad coverage but may be vulnerable to fire or wind damage. Together, these systems form an interconnected web of resources that enable Anchorage to function during normal conditions but also represent critical points of vulnerability during multi-hazard events.

Anchorage's infrastructure and public services provide a strong foundation for community safety, but their varied coverage and exposure to natural hazards require coordinated planning

[48] https://www.awwu.biz/about-us/awwu-overview

and management. Identifying where vulnerabilities overlap with wildfire risk areas is central to protecting both critical systems and the residents who depend on them.[49]

## Climate and Vegetation

Anchorage's climate is transitional, shaped by both coastal influences from the Gulf of Alaska and continental conditions from the Interior. Winters are cold, with snowpack typically persisting from November through March, while summers are becoming longer, warmer, and drier. While microclimates are found throughout the municipality, the most notable difference between climates is that of Girdwood compared to the remainder of the municipality. Girdwood experiences warmer winters, slightly cooler summers, and receives significantly more precipitation; it receives 45-55 inches of rainfall and 150-200 inches of snow. Conversely, the remainder of Anchorage receives 16-17 inches of rainfall and 75-80 inches of snow.

Anchorage's vegetation is also diverse, ranging from boreal forests of white and black spruce, birch, and aspen to wetlands and riparian zones dominated by willow, alder, and sedge. South-facing slopes and disturbed sites often transition into grassland fuels that dry quickly and promote fast-moving surface fires under warm, windy conditions. At higher elevations, alpine tundra and shrublands prevail, while lowland bogs and wetlands offer limited but variable resistance to fire spread.

This mosaic of vegetation types, interwoven with developed neighborhoods, defines Anchorage's wildfire exposure. Forest stands and greenbelts extend deep into the Anchorage Bowl, and many residential areas are directly embedded within these fuel types. The interaction of vegetation, topography, and a warming climate underscores the importance of integrating fuel management into Anchorage's long-term wildfire resilience planning.

**Table 3 - Vegetation Types and Wildfire Relevance[50]**

| Vegetation Type | Typical Distribution | Wildfire Relevance |
|---|---|---|
| White & Black Spruce | Anchorage Bowl, Hillside, Eagle River, Girdwood | High flammability: produces embers that can ignite structures |
| Paper Birch & Aspen | Mixed with spruce or in younger forests | Lower flammability; may moderate fire intensity when dominant |
| Alder & Willow | Riparian zones, wetlands, disturbed areas | Variable flammability: can slow fire spread but dry quickly in drought |

[49] Data sources: Anchorage Fire Department (2023), Municipality of Anchorage Office of Emergency Management, Anchorage Water and Wastewater Utility, Chugiak and Girdwood Volunteer Fire Departments.
[50] Alaska Wildland Fire Coordinating Group Fuel Model Guide (2018), Municipality of Anchorage Parks and Recreation Department, National Weather Service Anchorage Climate Office.

| | | |
|---|---|---|
| Grasslands | South-facing slopes, disturbed sites | Very fast spread rates; ignites easily during warm, dry, windy conditions |
| Alpine Tundra | Higher elevations in Chugach foothills | Limited fuels: generally low fire intensity but can support shrub burns |
| Wetlands & Bogs | Lowland basins and riparian corridors | Provide moisture and resistance in normal years but dry out under drought |

## Wildfire Smoke Risk

Wildfire smoke has emerged as a recurring and serious public health and community resilience concern in Anchorage. Once considered an occasional seasonal nuisance, smoke events have become more frequent, longer in duration, and more intense in recent years. This trend reflects both local fire activity within the Municipality and increased wildfire activity across Alaska and western Canada. Large fires burning hundreds of miles away routinely send smoke into Anchorage, amplified by hotter summers, earlier snowmelt, and extended fire seasons.

The primary concern is particulate matter with a diameter of 2.5 micrometers or smaller ($PM_{2.5}$), can deeply affect respiratory and cardiovascular health. These tiny particles penetrate the lungs and bloodstream, triggering acute health effects and compounding chronic conditions. As Anchorage anticipates longer fire seasons, smoke exposure is expected to become one of the most significant wildfire-related hazards to residents, infrastructure, and quality of life.

### Smoke Pathways and Meteorology

Anchorage's exposure to wildfire smoke is shaped by both local geography and regional weather patterns. During the summer, prevailing winds frequently transport smoke from interior Alaska wildfires into southcentral Alaska, and Anchorage experiences days or even weeks of degraded air quality despite no active local fire within the Municipality. The region's topography intensifies this vulnerability: surrounded on three sides by the Chugach Mountains and bordered by Cook Inlet, the city sits in a basin-like setting where smoke can easily settle and accumulate. Temperature inversions—when cooler air near the surface is trapped beneath a warmer layer aloft—are common and can hold smoke in place for extended periods.

Compounding these challenges, the smoke season has shifted in both timing and duration. Whereas smoke was once primarily concentrated in late July and August, Anchorage now regularly sees smoke events as early as May and as late as October.[51] This expanded window coincides with peak outdoor recreation, construction, and tourism activity, increasing both public health risks and economic impacts. As climate trends drive hotter summers, drier vegetation, and longer fire seasons, the likelihood of sustained smoke exposure in Anchorage is expected to grow.

### Vulnerable Populations and Public Health Risks

Wildfire smoke affects all residents, but some groups face much greater risks than others. Individuals with asthma, chronic obstructive pulmonary disease (COPD), heart disease, or other respiratory and cardiovascular conditions especially sensitive to $PM_{2.5}$ (Particulate Matter with a diameter of 2.5 micrometers or smaller) can experience acute health effects and exacerbate chronic illnesses. Children, older adults, and pregnant individuals are also more susceptible

[51] Alaska Department of Environmental Conservation & Alaska Wildland Fire Coordinating Group. Alaska Enhanced Smoke Management Plan, Appendix III.K of the State Implementation Plan (2021 Update).

because of physiological sensitivity. Outdoor workers such as those employed in construction, transportation, and tourism face prolonged exposure during the workday, and unsheltered residents often lack any access to clean indoor air.

Anchorage's demographic diversity further complicates these vulnerabilities, as access to resources that reduce smoke exposure is unevenly distributed across the city. Neighborhoods where poverty rates are higher and median household incomes are lower, may have reduced ability to obtain protective measures like HEPA air filters, well-sealed homes, or timely medical care.[52] [53] These disparities magnify the health consequences of prolonged smoke events, contributing to spikes in emergency room visits and hospital admissions during periods of poor air quality. In this way, smoke risk is a public health issue requiring targeted outreach and mitigation strategies,

## Infrastructure and Community Impacts

Beyond direct health effects, wildfire smoke imposes significant costs on Anchorage's infrastructure, transportation systems, and economy. Visibility reductions can disrupt operations and create roadway safety risks along major corridors. Extended smoke events threaten port and rail operations, constrain cargo movement and marine navigation, and undermine the tourism sector by limiting outdoor recreation and travel. Local schools, community events, and recreational activities may be forced to cancel or adapt during smoke advisories, reducing quality of life while imposing additional burdens on families, businesses, and institutions.

## Monitoring and Community Response

Anchorage benefits from real-time air quality monitoring provided by the Alaska Department of Environmental Conservation (ADEC), EPA's AirNow system, and an expanding network of local sensors.[54] The Department of Environmental Conservation (DEC) Air Quality Division will provide text alerts during times of poor air quality. Residents are encouraged to sign up to receive timely information about potential health hazards. These data sources inform public alerts issued through the Municipality of Anchorage Office of Emergency Management (OEM), Anchorage Fire Department (AFD), and state agencies. Typical advisories instruct residents to remain indoors, reduce strenuous outdoor activity, use high-efficiency particulate air (HEPA) filters, or wear N95 respirators. Despite these resources, gaps remain. Anchorage currently has no formal network of designated "clean air shelters" to provide safe indoor refuge during severe or prolonged smoke events. Household access to HEPA filtration and portable air purifiers is uneven, with many residents unable to afford or install protective equipment. These gaps underscore the need for stronger community smoke resilience strategies.

[52] Mountain View Targeted Neighborhood Plan (2016). Municipality of Anchorage Planning Department.
[53] https://akfederalfunding.org/city/anchorage-west-fairview/
[54] https://dec.alaska.gov/air/air-monitoring/instruments-sites/community-based-monitoring/

Addressing wildfire smoke requires coordinated investment in infrastructure, planning, and outreach. The Alaska Department of Environmental Conservation (ADEC) and EPA have good guidance and recommendations that may be evaluated for cost effectiveness and consistency with wildfire and public health initiatives. These include Clean Air Shelters, Household Filtration Support, Clear AQI Thresholds, Healthcare Coordination, and Community Education. [55]

## Trends and Alignment with Broader Initiatives

Anchorage's smoke mitigation strategies will be most effective when aligned with broader regional, state, and federal efforts. ADEC provides statewide guidance and monitoring support, while the Alaska Department of Health and Social Services plays a central role in public health messaging. Federal tools such as the EPA's "Smoke-Ready Toolbox" and CDC health provider guidance offer best practices that can be tailored to local needs. By aligning local strategies with state and federal frameworks, Anchorage can improve coordination, leverage technical expertise, and enhance long-term sustainability of smoke resilience measures.

While smoke from wildfire is only a portion of this public health issue, preparing for these impacts should be integrated into mitigation strategies. Regional and state-level coordination can leverage the technical expertise, resources, public health messaging and legal initiatives needed to address the issue of smoke.

[55] https://dec.alaska.gov/air/air-monitoring/

# Fire History

Understanding Anchorage's fire history is critical for evaluating current wildfire risk and planning for future resilience. The Municipality of Anchorage is situated within a boreal forest ecosystem dominated by black spruce, white spruce, birch, and aspen. In these ecosystems, wildfire has historically played an important role in shaping forest structure, renewing habitat, and cycling nutrients. However, in modern times, this landscape intersects with a rapidly growing population and extensive wildland–urban interface (WUI), creating heightened risks for homes, infrastructure, and public safety.[56]

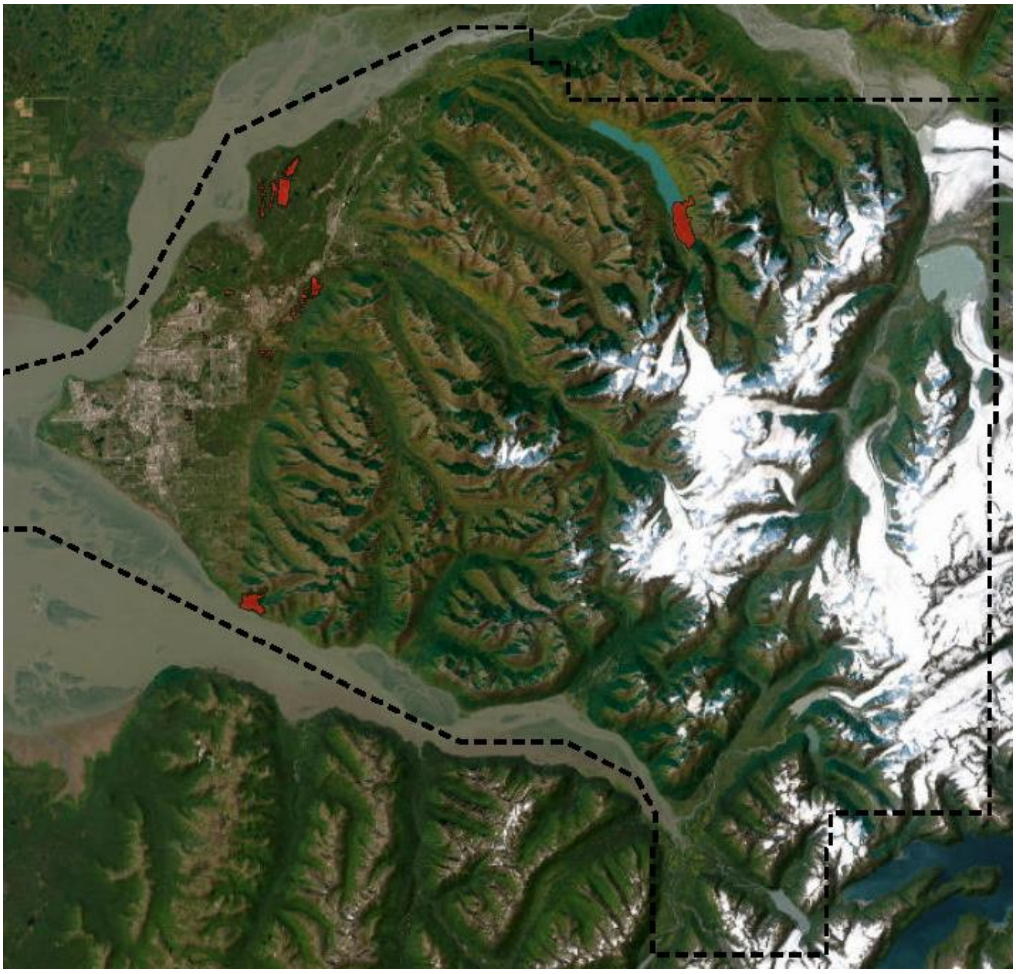


**Figure 10 - MOA Fire History[57]**

Large wildfires (greater than 100 acres) are less frequent within the Anchorage Bowl primarily because of the close proximity of fire stations and their ability to respond rapidly. Quick detection and short travel times allow most fires to be contained while still small. However, Anchorage's greatest vulnerability lies in the extensive roadless forested areas that where fire

[56] Alaska Wildland Coordinating Group. *Alaska Vegetation Fuel Model Guide* (2018)
[57] https://experience.arcgis.com/experience/1170079e0aac464c87a0a5eb280cd6a4

apparatus cannot reach effectively. These inaccessible zones within the municipality pose a significant risk, as fires in these locations can spread rapidly before ground resources are able to engage. At the same time, Anchorage frequently experiences smoke intrusions from large wildfires burning elsewhere in Alaska, particularly the Interior and Kenai Peninsula. As discussed in the previous section, these regional events often degrade air quality in Anchorage for days or weeks at a time, underscoring that fire history relevant to the municipality extends beyond its immediate boundaries.

In recent decades, the warmer temperatures have amplified these risks. In recent decades, the warmer temperatures have amplified these risks. Warmer summers, earlier snowmelt, and drier vegetation have lengthened Alaska's fire season, producing larger, more intense fires statewide and more frequent smoke impacts in Anchorage.[58] This evolving fire history demonstrates that the municipality must prepare for both local wildfire ignitions and regional fire activity that can affect air quality, transportation, and public health. Air traffic has been halted by wildfire smoke, resulting in significant economic losses and life safety risks.

## Historic Wildfires in the MOA

Anchorage's wildfire history reflects the interplay of its urban expansion and fire-adapted landscapes. While much of the municipality today is suburban and urban, the northern, eastern, and southern edges—particularly the Chugach foothills and corridors extending toward the Kenai—share ecological similarities with areas that have sustained large, high-severity fires. These events have left lasting marks on Anchorage's wildfire awareness and response capacity.

## Notable Wildfire Events

**Campbell Park Area Fires (1990s–Present):** A series of recurrent wildfires continue to occur in and around the Campbell Park area, including **the Piper Fire, Elmore Fire, and MLK Fire.** These incidents underscore the vulnerability of greenbelt corridors embedded within Anchorage's urban core and led to stronger vegetation management in municipal parklands.[59] These fires have been frequent and impactful, triggering evacuations in surrounding neighborhoods and causing significant disruption throughout the community. The increased frequency of illegal camping in this area has resulted in more ignitions and highlights the persistent threat posed by the abundant, contiguous fuels within and adjacent to these greenbelt corridors. Given the density of available fuels and proximity to residential areas, and critical infrastructure, the potential for a single ignition to escalate into a large, fast-moving fire remains a serious concern.

[58] International Arctic Research Center, University of Alaska Fairbanks. *Alaska's Changing Environment: Documenting Alaska's Physical and Biological Changes Through Observations* (2019).
[59] https://akfireinfo.com/2019/07/03/firefighters-begin-mopping-up-25-acre-wildfire-in-east-anchorage/

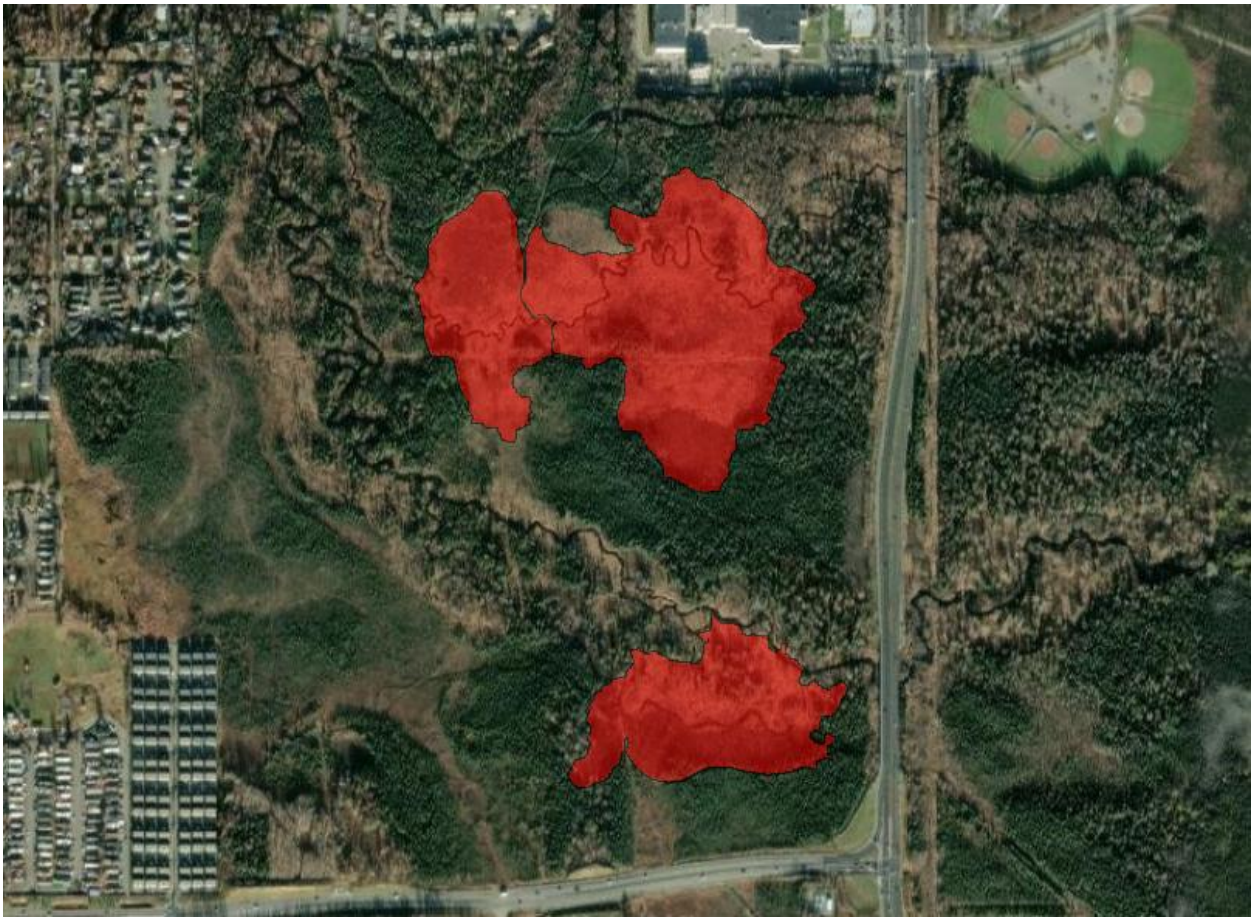


**Figure 11 – Campbell Creek: Piper, MLK and Elmore Road Fire Perimeters[60]**

**McHugh Fire (2016):** One of the most significant modern wildfires in Anchorage, the McHugh Fire ignited in July 2016 along the Seward Highway near McHugh Creek. In the final report produced by AK-DOF, the cause was determined to be an unextinguished campfire. AFD firefighters were first to respond to the fire but due to the location of the fire and steep, hazardous terrain posed a dangerous challenge for firefighters trying to access it. Strong winds and dry vegetation allowed the fire to spread rapidly across steep slopes in Chugach State Park, ultimately burning more than 780 acres. The area contained a significant amount of beetle-killed spruce that had been blown down. The fire created hazards on the Seward Highway, and the Alaska Railroad tracks as rocks and burning trees fell onto the road, leading to closures and delays. The fire came within approximately 1.1 miles from the Potter Creek Subdivision and 1.3 miles from the Rainbow Valley subdivision although no evacuations were ordered. The fire drew a multi-agency suppression response including hundreds of personnel and numerous aircraft including air tankers and helicopters.[61]

[60] https://experience.arcgis.com/experience/1170079e0aac464c87a0a5eb280cd6a4
[61] https://akfireinfo.com/tag/mchugh-fire/

**Figure 12 – McHugh Fire[62]**

- **Hiland Road Fire (2016):** Occurring the same year as McHugh, the Hiland Road Fire burned in black spruce forest near Eagle River. Its cause was ruled as "suspicious-undetermined." Though only 25 acres, the Hiland Road Fire required a significant number of personnel from multiple suppression agencies to convene upon the area for several weeks. It also forced evacuations in residential neighborhoods and highlighted evacuation challenges in hillside communities with limited road access.[63]

- **Eklutna Fire (2010):** Burning in the northern portion of the municipality at the base of Bold Peak, on the far east end near Eklutna Lake, this 1,400-acre wildfire illustrated the exposure of rural developments and critical watershed areas to fast-moving fire spread. It originated in the easternmost campground and reinforced the need for coordinated response among municipal fire services and state agencies[64]. The fire burned into subalpine fuels, highlighting the potential for unique and extreme fire behavior within the municipality. The remoteness and steepness of the slope created significant challenges for firefighters, delaying suppression efforts and complicating access to the fire line. These same conditions also hindered communications, resulting in logistical

[62] https://experience.arcgis.com/experience/1170079e0aac464c87a0a5eb280cd6a4
[63] https://www.adn.com/alaska-news/anchorage/2016/05/27/wildfire-burns-in-eagle-river/
[64] https://eklutnavalley.home.blog/2022/06/30/wildfires-of-eklutna-valley/

and tactical support delays that further emphasized the operational difficulties of managing incidents in remote, mountainous terrain.

- **Hillside Fires (Multiple Events):** Anchorage's Hillside area has a history of recurring wildfires due to its dense spruce forests, steep slopes, and dispersed residential development. Though most have been contained before causing major structural loss, these fires have repeatedly demonstrated the area's high potential for rapid fire growth and difficult suppression conditions. Historical incidents include the 1974 Henshew Fire, which burned approximately 77 acres just north of Abbott Road, and the 1974 Chugach Fire, which consumed 253 acres east of Hillside Drive. Both fires highlighted the susceptibility of Anchorage's Hillside to fast-moving wildfires, and the challenges firefighters face in containing them within rugged terrain and heavily forested residential areas.

These incidents collectively illustrate Anchorage's diverse wildfire profile and emphasize the importance of interagency collaboration to address the growing risk the MOA faces.

## Other Recent Fires (2000-Present)

Anchorage has experienced several significant wildfire events in the past two decades that highlight the municipality's exposure to both local ignitions and regional fire impacts. Additionally, incidents in surrounding areas have tested local suppression capacity and underscored the municipality's vulnerability to fire and smoke.

- **Shanta Creek Fire (2009):** Burning more than 13,000 acres in the Kenai National Wildlife Refuge, this fire did not threaten Anchorage directly but produced heavy smoke intrusions that reduced air quality across Southcentral Alaska. The strain this fire placed upon state and local resources highlights the dependence on national resource availability.[65]

- **Sockeye Fire (2015):** Ignited near Willow, this 7,220-acre fire forced widespread evacuations along the Parks Highway. Anchorage Fire Department resources were mobilized to assist. Not only is this a demonstration of AFD's commitment to serving when and where it can, the MOA benefits from these deployments through cost reimbursement and hands-on experience for firefighters.

- **Multiple Fires (2019):** Burning more than 167,000 acres on the Kenai Peninsula, the 2019 Swan Lake Fire lasted for months and repeatedly blanketed Anchorage in smoke. Its prolonged duration and complexity influenced state policy, leading Alaska to extend the 2019 fire season into September. The Swan Lake Fire was one of several major incidents that year, including the Malaspina, Deshka Landing, and McKinley fires, which together created one of Alaska's busiest and most resource-strained fire seasons on record. Statewide suppression resources were heavily committed, forcing agencies to

[65] https://www.frames.gov/documents/alaska/docs/Level_III_Assessment_for_Shanta_Creek_Fire_7_19.pdf

prioritize incidents and rely more heavily on local capacity within urban areas such as Anchorage. This context underscores the importance of local readiness, during the same period, multiple fires within the Campbell Tract area reinforced Anchorage's vulnerability to wildfire even as statewide resources were stretched thin, highlighting the critical need for municipal-level preparedness and interagency coordination.[66]

Together, these incidents illustrate the spectrum of Anchorage's fire exposure: local ignitions that threaten neighborhoods, regional fires that create persistent smoke impacts, and large-scale events that draw municipal resources into broader suppression campaigns. Each event has contributed to Anchorage's growing awareness of its fire risk and the need for coordinated preparedness.

## Fire Ignition Patterns and Frequency

Fire agencies across the Municipality respond each year to numerous small fires and ignitions, most commonly caused by debris burning, recreational activity, illegal campfires, military training, and power lines. While many are contained quickly due to proximity to roads and staffed resources, some have threatened residential properties and critical infrastructure.

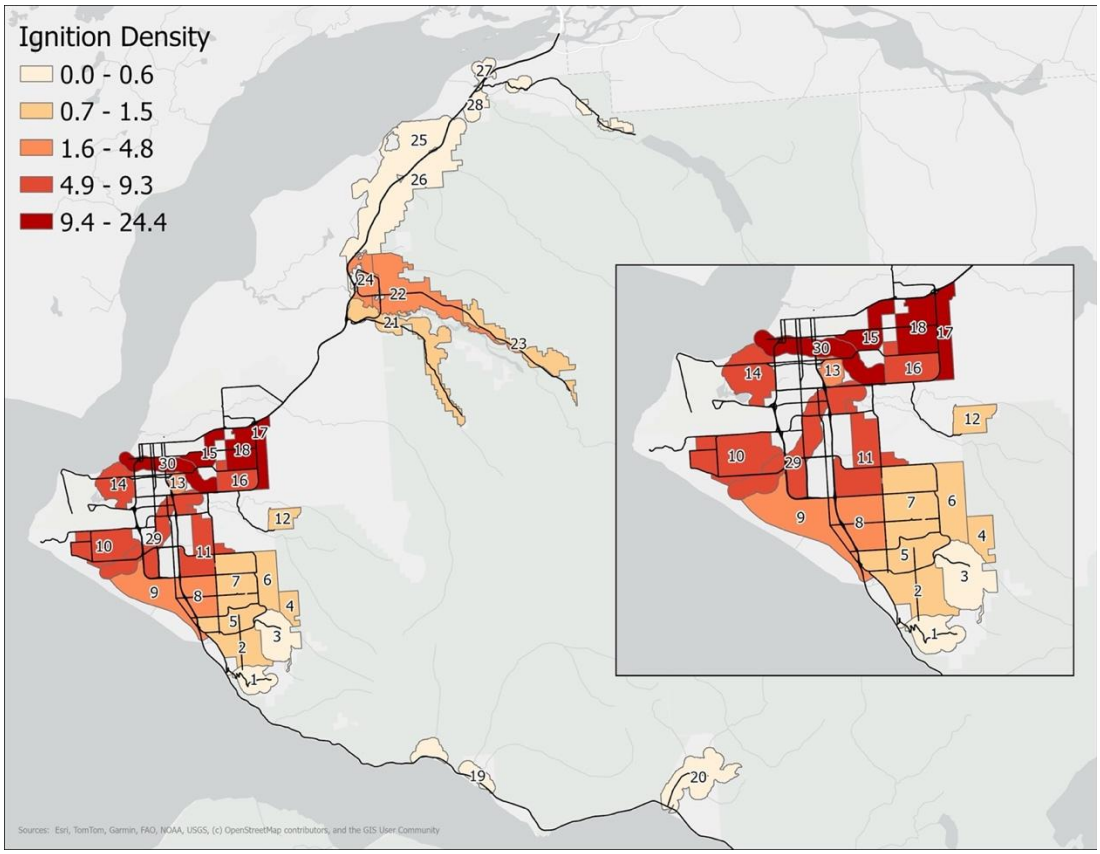



**Figure 13 - Ignition Map 2001 to 2021 (AFD Data)**

[66] https://storymaps.arcgis.com/stories/549a014cfcff49eab2affe8b07e42acf

Recent years have seen more vegetation fires along rural roads, rail lines, and unmanaged open spaces in the WUI. Though typically small, these incidents collectively highlight the growing exposure of SPUs and the value of early detection, public education, and adequate suppression resources.

Wildfire ignitions across Anchorage result from both natural and human causes, with dry summers and growing development in the WUI increasing the potential for wildfire starts.

Natural ignitions, while less frequent, still play a role in shaping Anchorage's fire environment. Summer thunderstorms occasionally produce lightning strikes that ignite deep duff layers, which can smolder for hours or days before emerging as surface fires under hot, dry, and windy conditions. These less frequent but high-consequence ignitions highlight the need for continued planning, as even a single lightning strike can initiate an event with significant community impacts.

The 2016 McHugh Fire, a human-caused ignition that rapidly spread through steep, densely forested terrain, filled Anchorage with smoke, threatened neighborhoods, and required a major interagency response. It remains a clear reminder of how quickly a single spark can escalate under the right conditions.

The occurrence of fires within or near populated areas underscores the need for continued investment in prevention, preparedness and coordinated response. These patterns point to the growing importance of a designated wildfire division within the AFD, a team of trained experts capable of leading wildfire preparedness, community education, and interagency coordination for rapid, effective response across the Municipality.

## Frequency and Seasonal Trends

Seasonal trends in wildfire activity have shifted noticeably over the past two decades. Historically, most fire activity in Anchorage was concentrated in April through July. Today, however, fires are occurring in earlier months and continue later into the year, with significant incidents recorded through October. This extension of the fire season is driven by earlier snowmelt, longer growing seasons, and periods of hotter, drier weather, all of which combine to keep fuels available for ignition well beyond traditional peak months. In 2025, Southcentral (Coastal Region) AK-DOF moved the official start of the fire season to March 17th due to record low winter precipitation.

The convergence of more frequent ignitions and extended fire seasons has created an increasingly complex wildfire environment. Fires that once might have been viewed as isolated seasonal events now occur against the backdrop of a shifting climate, making suppression planning, resource allocation, and public preparedness essential throughout a larger portion of the year. This trend means AFD must not only maintain its effective initial attack capacity but also anticipate how a lengthening fire season could strain resources.

## Lessons Learned and Management Implications

Anchorage's wildfire history underscores the municipality's vulnerability. Fires such as the McHugh Fire (2016) and the Hiland Road Fire (2016) demonstrated that small-to-moderate ignitions close to developed areas can grow rapidly when coupled with steep terrain, heavy fuels, and dry, windy weather. In both incidents, residential neighborhoods and transportation routes faced immediate risk, highlighting the critical need for rapid detection, aggressive initial attack capability, and coordinated evacuation planning in hillside communities with limited access and egress.

These lessons have already led to significant local investment in wildfire mitigation and preparedness. The Anchorage Fire Department established its Wildfire Division in 2024 as the first step toward addressing community needs. The construction of shaded fuel breaks coupled with vegetation management along greenbelts and transportation corridors reflects an intentional effort to reduce fire spread potential in high-risk areas. Public outreach campaigns emphasize resident responsibility in maintaining defensible space, adhering to burn restrictions, and preparing for evacuation. Equally important has been the strengthening of interagency partnerships, with the Anchorage Fire Department working alongside the Alaska Division of Forestry & Fire Protection, Joint Base Elmendorf–Richardson and departments in Chugiak and Girdwood to ensure that resources are aligned and response strategies are coordinated across jurisdictional boundaries. The impressive progress made by the AFD Wildfire Division in a short period of time supports the recommendation that a permanent division is imperative to the safety of the residents of the entire municipality. This is also evidence to support the idea that an expansion of the division can accomplish even more for the people it serves. Without a stable funding stream, the AFD Wildfire Division risks downsizing or disappearing altogether, making securing funding for the division a top priority for Anchorage.

The need for continued leadership is well understood by the public and municipal leadership. The experience of the past several decades provides both cautionary lessons and a roadmap for action, ensuring that future planning builds upon this hard-earned knowledge to strengthen the municipality's resilience.

# Wildfire Behavior Analysis

**Dr. Jen Schmidt of the University of Alaska collaborated closely with the AFD Wildfire Division and Bintel to co-develop the rating methodology explained in this plan and the** *Appendix* C: Methodology **and conducted most of the analysis. This approach helped to recognize the unique characteristics of the MOA topography, vegetation, and wildfire risk.**

IFTDSS is a product of the U.S. Forest Service Missoula Fire Sciences Laboratory.[67] IFTDSS models several aspects of predicted fire behavior and Landscape Burn Probability (LBP). The IFTDSS modeling outputs are combined with a geographic information system (GIS) spatial analysis of physical factors, such as community topography and distance to fire stations and water supplies, to generate the SPUHR scores.

## Fire Behavior Analysis

The CWPP hazard analysis begins by modeling wildfire behavior within the study area boundary. This is done using an industry-standard, fire-behavior modeling package known as IFTDSS (v3.11)[68]. IFTDSS uses maps of fuel characteristics and topography, along with information about past weather patterns to predict the severity of wildfire. The 90$^{th}$ and 97$^{th}$ percentile weather (top 10% and 3% of fire weather days) are used to calculate fuel moisture and wind during a high and extreme fire danger day. Dominant wind directions and speeds are then calculated from the frequency distributions of the Remote Automatic Weather Stations (RAWS) records. That information is used to measure how any given vegetation will burn across the study area under the same weather conditions.

**Landscape Fire Behavior Modeling Inputs:**

- Fuel Model
- Canopy Cover
- Stand Height
- Canopy Base Height
- Canopy Bulk Density
- Topographic Position (Aspect, Slope and Elevation)
- Initial Fuel Moisture
- Wind Speed and Direction

**Landscape Fire Behavior Simulation Outputs:**

- Flame Length
- Rate of Spread
- Crown Fire Activity
- Fireline Intensity

[67] https://iftdss.firenet.gov/landing_page/about.html
[68] https://iftdss.firenet.gov/iftdss2/#/landing (same as footnote 1)

- Heat per Unit Area

## Fire Behavior Modeling Procedure

The study area is broken down into grid cells with dimensions of 30 meters × 30 meters; fire behavior is predicted for each cell barographic, fuel, and weather input information. For this study, rather than using the LANDFIRE data integrated into the Interagency Fuel Treatment Decision Support System (IFTDSS) that was used to perform modeling, Dr. Schmidt used a modified landcover layer from the Arctic Boreal Vulnerability Experiment (ABoVE) project that focused on the Arctic (Wang et al. 2019).[69] This layer was modified to include impacts from a

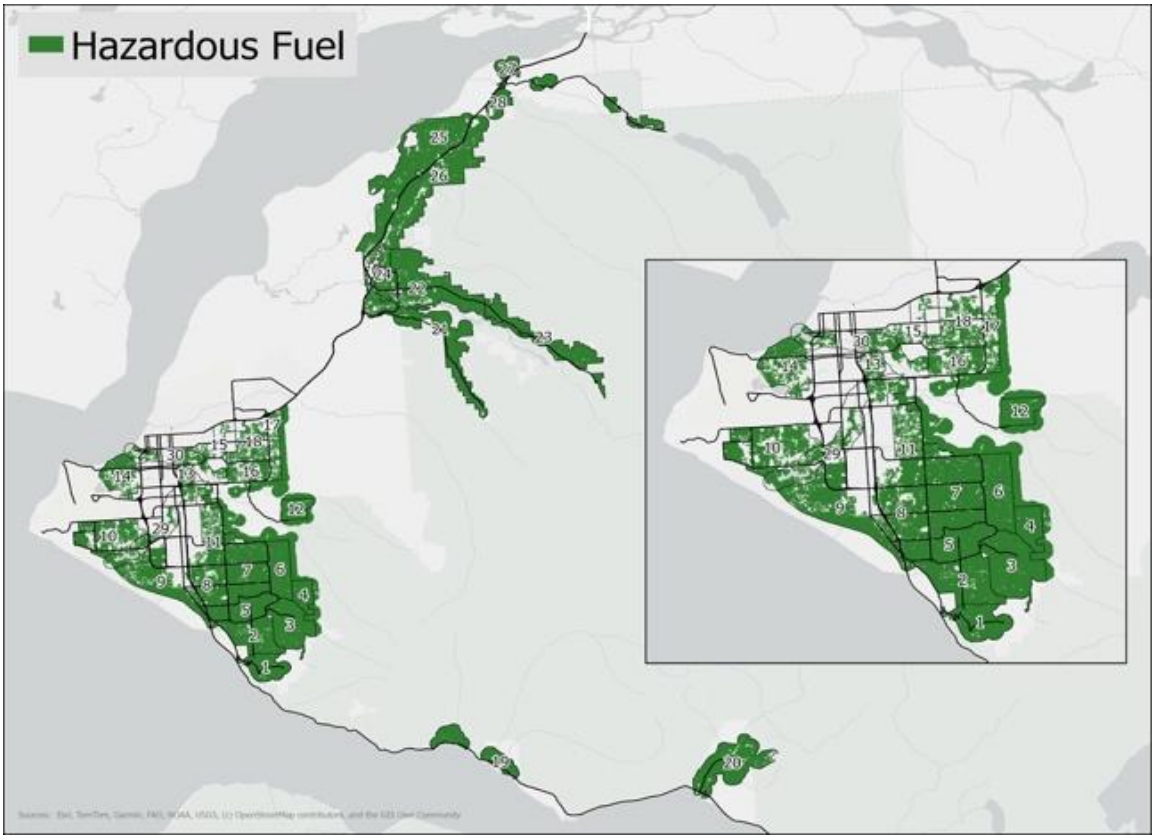



**Figure 14 - Hazardous Fuels**

recent spruce beetle outbreak and identified black and white spruce. This layer was found to more adequately capture vegetation within an urban environment. Dr. Schmidt worked with a fire behavior analysist at the National Park Service (Chris Moore) to develop a crosswalk between the landcover categories and fuel characteristics used in the model (surface fuels, canopy closure [CC], canopy height [CH], canopy base height [CBH], and canopy bulk density [CBD]). IFTDSS provides a topographic dataset (aspect, slope, and elevation).

69 Wang JA, Sulla-Menashe D, Woodcock CE, Sonnentag O, Keeling RF, Friedl MA (2019) ABoVE: Landsat-derived Annual Dominant Land Cover Across ABoVE Core Domain, 1984-2014. In: ORNL Distributed Active Archive Center. https://daac.ornl.gov/ABOVE/guides/Annual_Landcover_ABoVE.html Accessed May 2023

Reference weather and fuel moisture information are obtained from one or more Remote Automated Weather Station (RAWS) sites. This study looked at wind roses from the Anchorage Airport (PANC) during fire season (May-August 15th) which suggested 359 and 160. Based on feedback from AFD experts, wind directions of 160 and 290 were used.

## Landscape Burn Probability (LBP) Output

Landscape Burn Probability Model (LBP) evaluates the likelihood an ignition will develop into a wildfire. This model, along with fire severity predictions from fire-behavior modeling, are employed to determine the contextual threat of wildfire to the SPUs of the study area.

Similar but also useful, the Burn Probability output (BP) quantifies the likelihood of a fire occurring under a fixed set of weather and fuel moisture conditions.

In addition to BP, LBP also models Conditional Flame Length (CFL). CFL is an estimate of the average flame length for all fires that burn at a given point on the landscape under a fixed set of

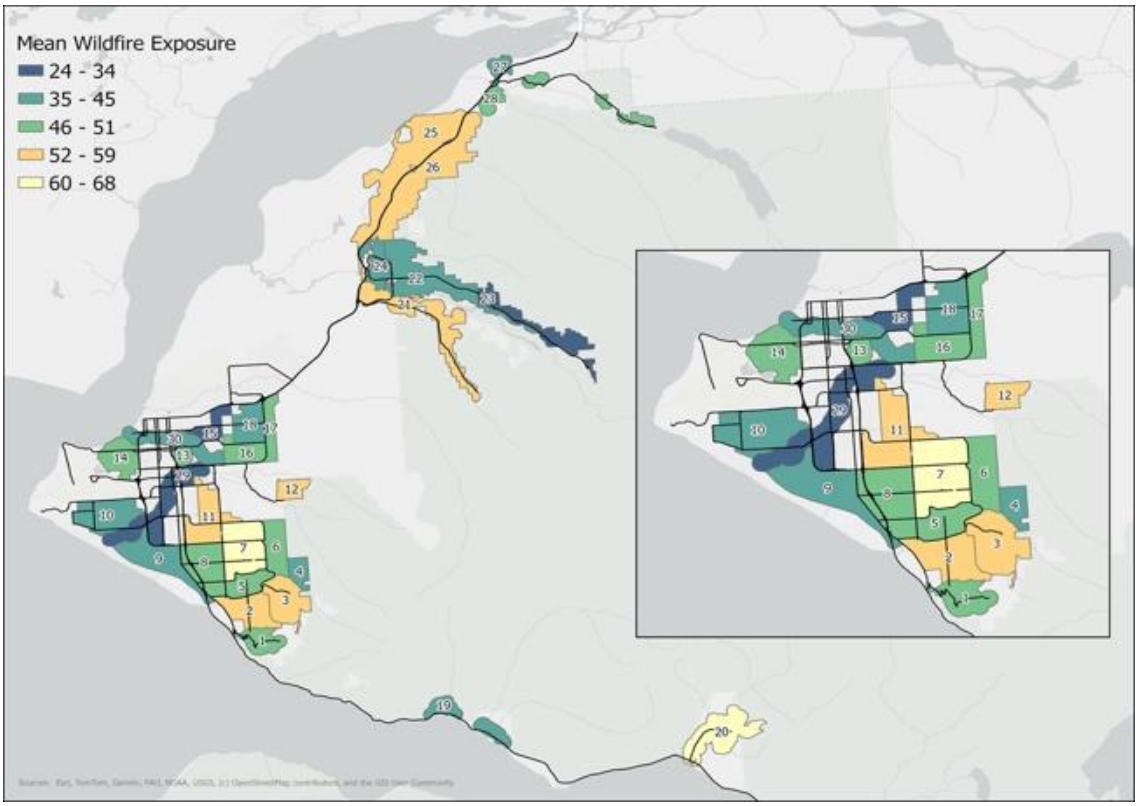



**Figure 15 - Mean Wildfire Exposure**

weather and fuel moisture conditions. This number is lower than the Landscape Fire Behavior Flame Length output because it averages head, flank, and backing fire for each pixel instead of just the head fire.

The most relevant product of the LBP analysis for hazard mitigation planning is the Integrated Hazard output from IFTDSS. Integrated Hazard combines BP with CFL into a single characteristic that can be mapped.

The outputs of the fire behavior modeling process provide a significant portion of the SPUHR score.

## Hazard Rating Factors

A zonal analysis of physical geography affecting wildfire hazard threats to the communities is critical to the SPUHR ratings. The fire behavior outputs and the hazard rating factors described herein were adjusted by the on-the-ground field survey of HIZ hazard factors to serve as input to the SPUHR ratings methodology presented in the next section and described further in *Appendix C: Methodology*.

## Suppression Planning Units

The primary outcome of the hazard study performed for this CWPP was a standardized identification and quantification of wildland fire hazards for Wildland-Urban Interface (WUI) residential areas. SPU Hazard Rating (SPUHR). This section provides a brief overview of the methodology used to determine the Suppression Planning Unit (SPU) boundaries and their corresponding hazard ratings.

The Anchorage WUI, defined as the area where human development meets or intermixes with undeveloped wildlands, was divided into 30 SPUs (see Table 5). SPU boundaries were delineated around contiguous areas of residential development with similar dominant wildfire hazards. They are based on physical characteristics rather than political, HOA, or traditional neighborhood lines. Non-residential tracts, such as large commercial or government-owned land, were excluded. Isolated single properties and small groups of parcels were addressed individually rather than assigned their own SPU. However, the CWPP and its recommendations apply to the entire MOA. Additional information about hazard ratings is found in *Appendix C: Methodology.*

Dr. Jen Schmidt of UAA partnered with AFD to conduct the fire behavior modeling and develop the SPUHR algorithm tailored to the Municipality's unique attributes. This analysis produced ratings and maps that guide the placement, type, and priority of mitigation recommendations.

The SPUHR methodology combines physical infrastructure factors such as structure density, road access, and water supply with social and demographic variables. It incorporates fire behavior and LBP outputs from IFTDSS. The model was developed through iterative review and validated by project team members, including AFD and AK-DOF.

**These ratings help prioritize mitigation projects across the Municipality. Although hazard is a key consideration, it is only one of several factors. Life safety for the public and responders, including improving areas with limited access or egress routes, is the highest priority. Project sequencing also depends on land ownership and funding, and coordination among landowners, community members, municipal departments, fire agencies, grantors, and habitat partners.**

SPUHR ratings are relative to other SPUs within the MOA. For example, a "high" hazard SPU in northern Alaska may not share the same characteristics of a "high" hazard SPU in Anchorage. Each factor used in the SPUHR model was assigned a value between one based on natural breaks in the data (Jenks 1967) [70]. One represents the lowest score (i.e. lowest risk) and five the highest. A total of 19 factors were analyzed and grouped into categories, each contributing to the total score.

70 Jenks, George F. 1967. "The Data Model Concept in Statistical Mapping", International Yearbook of Cartography 7: 186–190.

Each category contributed equally to the total score, except for vulnerability and values at risk, which represented half a factor. The final numeric total was used to assign each SPU to one of five qualitative hazard classes: Low, Moderate, High, Very High or Extreme. **Error! Reference source not found.** presents the SPUHR classifications for all SPUs in this study area.

The SPUHR Ratings for the 30 SPUs in the MOA are shown below:

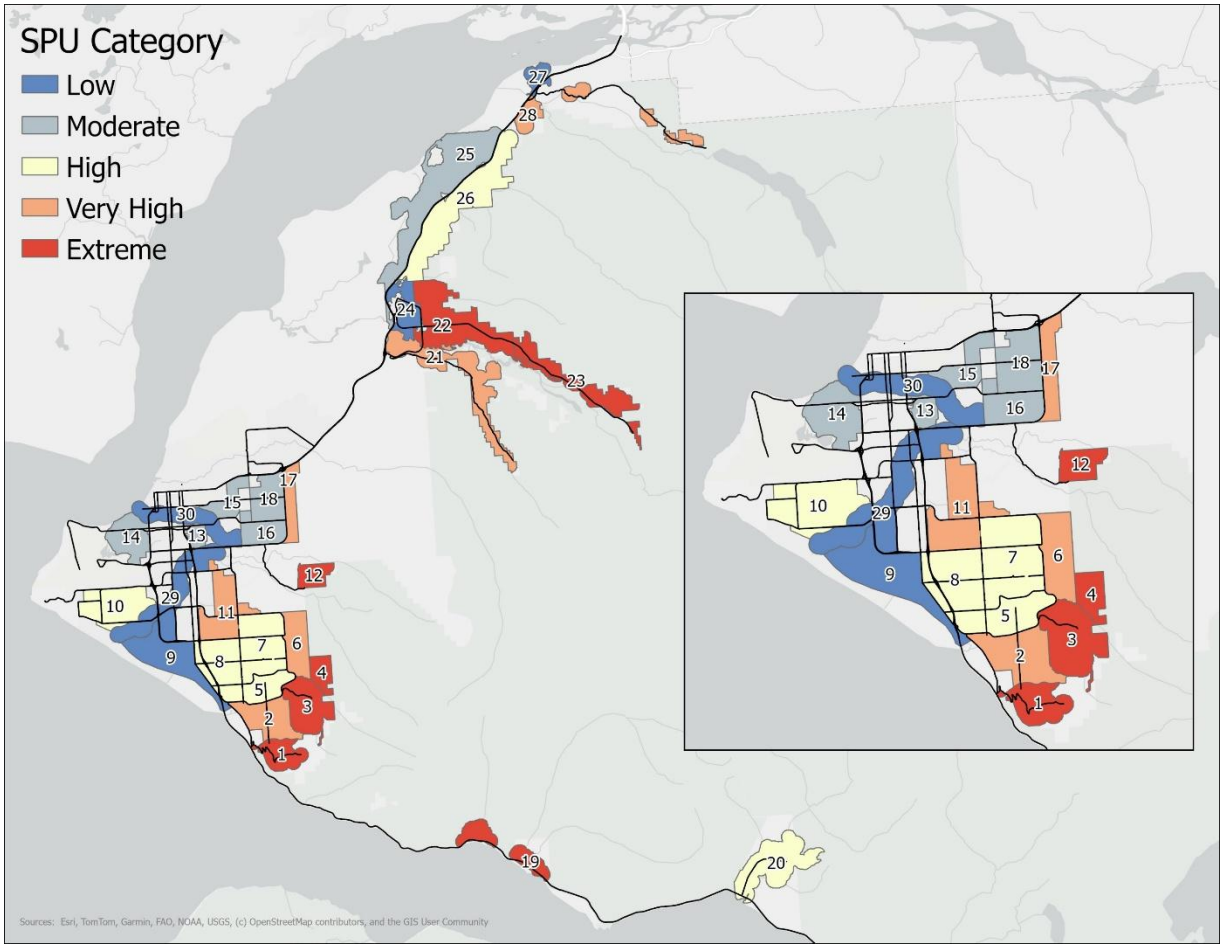



**Figure 16 – SPU Map and Hazard Rating Table**

| SPU No. | Name | Rating |
|---|---|---|
| 1 | Potter Heights | Extreme |
| 2 | South Rabbit Creek | Very High |
| 3 | Bear Valley | Extreme |
| 4 | Glen Alps | Extreme |
| 5 | DeArmoun | High |
| 6 | Upper Hillside | Very High |
| 7 | Birch | High |
| 8 | Lower Hillside | High |
| 9 | Oceanview | Low |
| 10 | Kincaid | High |
| 11 | Abbott/Elmore | Very High |
| 12 | Stuckagain | Extreme |
| 13 | Lake Otis | Moderate |
| 14 | Turnagain | Moderate |
| 15 | Merrill | Moderate |

| SPU No. | Name | Rating |
|---|---|---|
| 16 | Baxter | Moderate |
| 17 | East Muldoon | Very High |
| 18 | West Muldoon | Moderate |
| 19 | Rainbow | Extreme |
| 20 | Girdwood | High |
| 21 | Hiland | Very High |
| 22 | Lower Eagle River | Extreme |
| 23 | Upper Eagle River | Extreme |
| 24 | Eagle River Loop | Low |
| 25 | West Chugiak | Moderate |
| 26 | East Chugiak | High |
| 27 | Eklutna Village | Low |
| 28 | Eklutna Lake | Very High |
| 29 | Campbell Creek | Low |
| 30 | Chester Creek | Low |

More maps and visual representations of the rating factors used in the analysis are presented in Appendices A & C to further visualize the impact of each factor on the overall ratings.

## Summary

Fire history, the IFTDSS LBP analysis, and in-person expert assessment demonstrate that a high potential for wildfire will continue to threaten SPUs in the Municipality of Anchorage. That said, the analysis also points to a concentration of risk that can be significantly reduced through collaborative mitigation efforts by residents and MOA agencies.

# Areas of Special Interest

ASIs are non-residential areas that have a material effect on life safety, residential property preservation, and cultural significance. Three ASIs were created for the MOA: JBER, TSAIA/Kincaid, and Portage.

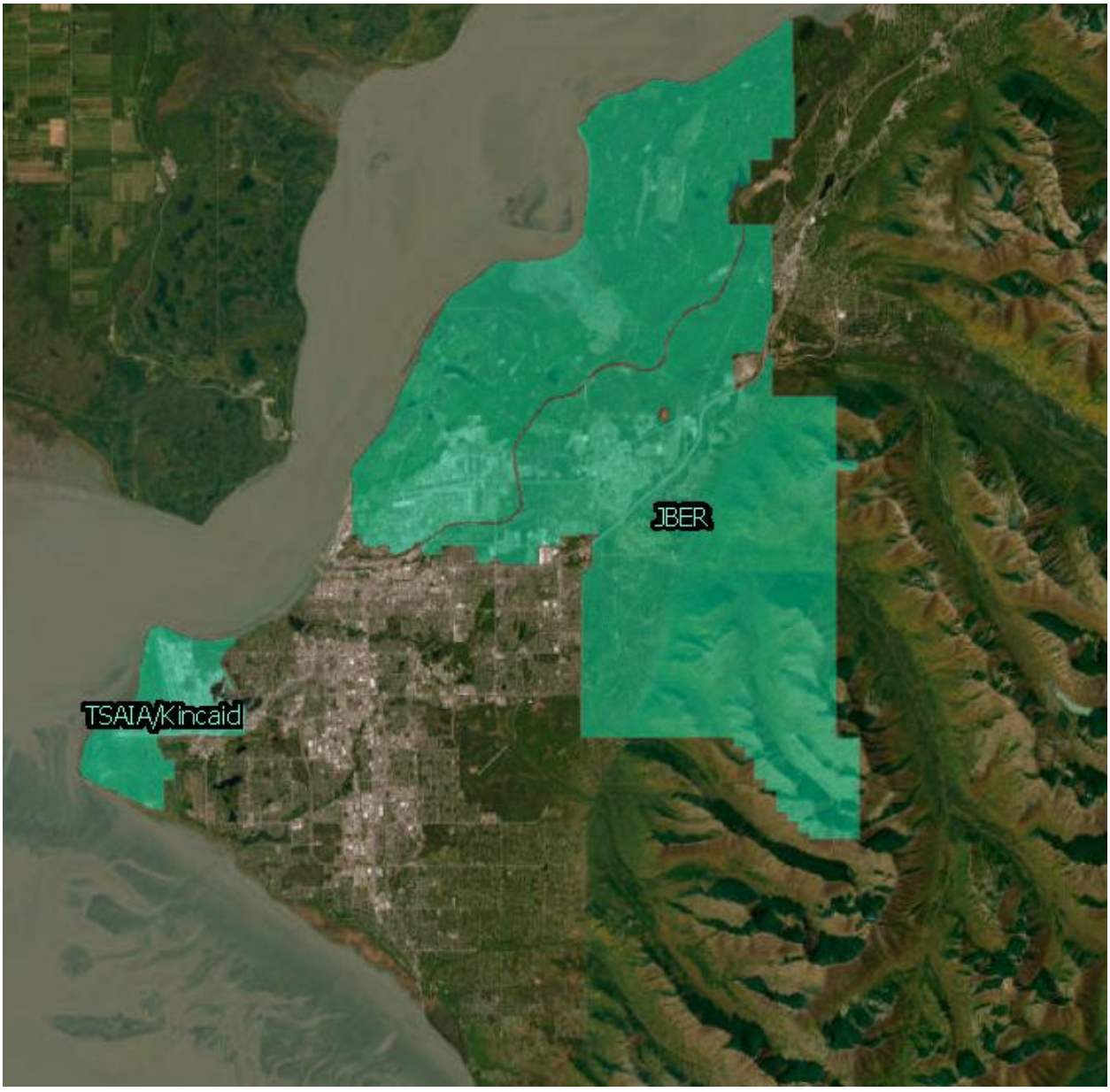



**Figure 17 – Areas of Special Interest, JBER and TSAIA/Kincaid[71]**

## JBER

[71] https://experience.arcgis.com/experience/1170079e0aac464c87a0a5eb280cd6a4

Joint Base Elmendorf-Richardson (JBER) is a joint US Air Force and US Army installation comprising of 73,041 acres within the Municipality of Anchorage, responsible for providing expeditionary combat support and training to nearly 12,000 deployable Soldiers and Airmen. The installation has approximately 39,000 acres of connected forested land with live-fire ranges throughout the Richardson Training Areas, and a concentration of live-fire ranges in the Small Arms Complex. mission-related human-caused fires are the primary source of unplanned ignitions; however, JBER executes a robust Wildland Fire Management Plan for prevention and suppression to minimize the risk of major wildfires.[72]

JBER has been identified as an ASI due to its location within the MOA and because it is a source of fire starts year-round that could impact adjacent SPUs. There are also prescribed burning activities that happen on JBER property. The MOA does not have the ability to make recommendations or complete projects on JBER property, but activities occurring there can have a profound impact on adjacent SPUs.

## TSAIA/Kincaid

Managed by Anchorage Parks and Recreation, Kincaid Park encompasses over 1,500 acres of rolling, forested terrain and supports a wide range of wildlife and year-round recreation. While it is a single contiguous park, it includes multiple driven access points, including the main entrance at the end of Raspberry Road, the Raspberry Trailhead, the Little Campbell Lake access, and the Jodhpur Trailhead off Dimond Boulevard. The Jodhpur entrance also features a motocross track that is heavily used during the summer months and draws significant visitor traffic. Kincaid Park connects with the 191-acre Point Woronzof Park at its northwest corner, creating one of the largest continuous greenbelt areas within the Municipality. Despite these multiple access points, the park's internal road network and limited through-access create evacuation and traffic management challenges, particularly during major sporting events or emergencies involving large crowds. [73]

Ted Stevens Anchorage International Airport (TSAIA) is a cornerstone of Alaska's transportation and economic infrastructure. It connects the state to the Lower 48 and provides essential access to hundreds of remote communities that rely on aviation for goods, travel, and emergency services.

At the state level, TSAIA drives Alaska's economy by supporting thousands of jobs and ensuring the steady movement of freight, fuel, and passengers that sustain communities across the state. Globally, Anchorage's strategic location positions the airport as one of the world's most

72 https://www.jber.jb.mil/Portals/144/Services-Resources/environmental/public-Docs/%28U%29%20JBER%20Integrated%20Natural%20Resources%20Management%20Plan%20%28INRMP%29%2021%20January%202021.pdf
73 https://www.muni.org/Departments/parks/Pages/Kincaid.aspx

important cargo hubs, handling not only passenger traffic but also serving as North America's second busiest cargo airport and fifth busiest in the world. [74]

Lake Hood is the world's largest and busiest seaplane base and is part of TSAIA and a vital link to Alaska's statewide aviation network. For nearly a century, it has connected remote communities to Anchorage and supported the movement of people, goods, and services across the state. Operating year-round, Lake Hood remains central to both commercial and recreational aviation, fueling Anchorage's economy, sustaining Alaska's aviation heritage, and fostering the independence and connectivity that define life in the Last Frontier. Adjacent to Lake Hood is Earthquake Park, a 134-acre natural area situated along the coastal bluffs overlooking Cook Inlet. The park is characterized by black spruce stands interspersed with light, flashy grass fuels, creating a landscape with elevated seasonal fire potential. Together, these areas represent a unique intersection of aviation infrastructure and wildland-urban interface[75]

The TSAIA/Kincaid ASI was identified due to its potential impacts on life safety locally and across Alaska. A wildfire or smoke event that disrupts airport operations could prove catastrophic for residents who rely on air travel to reach Anchorage for standard or emergency medical care. For Alaskans living away from the road system, the airport serves as the critical link to urban hospitals and specialized treatment. Fires occurring in Kincaid Park would also impact the dense wildlife population and create risk for the adjacent Kincaid SPU.

[74] https://dot.alaska.gov/anc/passengers-about.shtml
[75] https://dot.alaska.gov/aias/assets/AEDC-Lake-Hood-Seaplane-Base-Impacts-Report.pdf


**Figure 18 – Areas of Special Interest, Portage Valley[76]**

## Portage Valley

Portage Valley is the only connection for the railroad and road system to Whittier. It also sees many recreators and visitors with campfires. From an economic and geographic standpoint, Whittier represents the Alaska Railroad's only viable freight interchange point for its barge service connecting Alaska with the lower 48 states and Canada. Seward and Anchorage are not

[76] https://experience.arcgis.com/experience/1170079e0aac464c87a0a5eb280cd6a4

viable port alternatives for barge interline service. Anchorage is not free of ice year-round, and Seward requires traveling over a mountain pass at a 3% grade. Whittier is a year-round, ice-free, deep-water port. It is located only 50 miles from Anchorage and has slight grades for trains and engines. For these reasons, all the Alaska Railroad's railcars, locomotives, and rail-borne freight must enter and depart via Whittier.[77]

Should the Don Young Port of Anchorage be negatively impacted by natural or other disasters, Whittier is the nearest alternative year-round port to receive food and other necessities. The 2018 earthquake reduced the port of Anchorage's capacity due to damage it sustained, and Anchorage depended on Whitter for supplies.

Historically, Whittier has served as a critical transportation hub for marine freight, ferry service, and rail transport. This infrastructure, coupled with the influx of recreational boaters and cruise ship passengers, results in significant traffic and tourism. Annually, Whittier welcomes over 250,000 cruise ship passengers, 20,000 ferry passengers, 75,000 rail passengers, and sees over 240,000 vehicles passing through the tunnel, including 12,000 boat launches from the Small Boat Harbor. Approximately 596,000 tons of goods were imported and 56,000 tons of outbound freight passed through Whittier in 2019. [78] This activity highlights the need for effective waterfront management and hazard protection of the railroad and highway in Portage Valley connecting Anchorage to Whittier.

## Commercial/Industrial Properties and Critical Infrastructure

When defined in reference to a wildfire event, critical infrastructure refers to the essential systems whose damage or destruction by fire, heat, or smoke would severely impede the emergency response, evacuation, public safety, or post-disaster recovery of the affected community. Protection of critical infrastructure focuses on immediate community survival and stability during and after the disaster.

Anchorage's infrastructure and public services form the backbone of its capacity to prepare for, respond to, and recover from wildfire events. The municipality contains an extensive network of transportation corridors, utilities, and emergency service facilities that connect residents across a large and diverse geographic area. These systems are essential to community function, and their location within or adjacent to wildland areas makes them vulnerable to wildfire impacts.

Anchorage's transportation system includes the Glenn Highway, Seward Highway, and Alaska Railroad, which link neighborhoods to the broader state and provide critical evacuation routes. Roadways range from high-capacity arterials to narrow, winding, and unmaintained routes that pose challenges for evacuation and emergency access. The Don Young Port of Alaska and Ted

[77] FAQs, Whittier Tunnel, Transportation & Public Facilities, State of Alaska
[78] https://www.alaskarailroad.com/sites/default/files/Communications/WTMP_Draft_Master_Plan.pdf

Stevens Anchorage International Airport serve as statewide transportation hubs, and both are adjacent to areas of dense fuels.

The municipality's utility infrastructure is extensive, with power transmission lines, natural gas distribution systems, and water supply networks serving both urban and rural communities. Overhead electrical lines cross forested areas and may be susceptible to damage or ignition during high wind events, while natural gas infrastructure requires careful monitoring to prevent cascading hazards during wildfire incidents. Anchorage Water and Wastewater Utility (AWWU) provides municipal water service across much of Anchorage including hydrant coverage that enhances suppression capacity in high-density areas.[79] However, rural and hillside neighborhoods often lack hydrant systems and rely on private wells, placing them at greater risk during wildfire emergencies when suppression resources may be strained.

Emergency response services in Anchorage are led by the Anchorage Fire Department (AFD), supported by Chugiak Volunteer Fire & Rescue Department (CVFRD) and Girdwood Fire and Rescue Department (GFRD), as well as coordination with Joint Base Elmendorf–Richardson (JBER) fire units. The Department currently staffs thirteen fire stations, a communications center, fire prevention office, regional training center, maintenance facility, and administrative offices. Newest to AFD is the Wildfire Division, which has strengthened community resilience and fire department readiness.

Hospitals and clinics in Anchorage are among Alaska's most critical infrastructure. Major facilities, including Providence Alaska Medical Center, Alaska Regional Hospital, and the Alaska Native Medical Center, are concentrated in central Anchorage, creating statewide reliance on these hospitals for advanced emergency, trauma, and specialty care. Many rural communities lack hospital access and depend entirely on-air transport for medical emergencies.

Providence Alaska Medical Center is a Level II Adult and Pediatric Trauma Center and the largest hospital in Alaska. Alaska Regional Hospital provides comprehensive emergency and surgical care and maintains its own airstrip, allowing direct air ambulance access. The Alaska Native Medical Center serves as both a tertiary referral hospital and trauma center for Alaska Native and American Indian patients, receiving hundreds of transfers each year from regional and village facilities.

Because Anchorage hospitals act as both receiving and referral centers, wildfire events can create dual challenges: evacuating local patients while simultaneously receiving an influx from affected areas. Reliable air access is critical for trauma, cardiac, and stroke patients, yet dense smoke, reduced visibility, and airspace restrictions can ground medevac flights, delay transfers, and strain ground transport routes.

Maintaining hospital operations, protecting infrastructure, and ensuring clear air and ground access corridors are essential components of wildfire preparedness and response. These

[79] https://www.awwu.biz/about-us/awwu-overview

measures support both Anchorage's medical resilience and Alaska's statewide emergency care network.

Communication infrastructure, including cell towers and radio networks, provide broad coverage but may be vulnerable to fire or wind damage. Together, these systems form an interconnected web of resources that enable Anchorage to function during normal conditions but also represent critical points of vulnerability during multi-hazard events. Adjacent to Campbell Park, where many fire starts occur each year, is the only radio tower that feeds the network for the Anchorage Police Department dispatch center. During the larger fires (MLK, Piper, Elmore), this tower was threatened, which would have hampered communications until APD dispatch could relocate to the Emergency Operations Center. The drive time between locations is approximately 15 minutes. This does not account for circumstances that may hamper travel, such as traffic from evacuating vehicles, road closures, and multiple firefighting resources, the drive time between locations

**Table 4 - Infrastructure and Service Vulnerabilities**

| System | Strengths | Vulnerabilities in Wildfire Context |
|---|---|---|
| Transportation | Glenn & Seward Highways connect communities statewide | Narrow and single access roads limit evacuation and suppression access |
| Water Supply | AWWU hydrant coverage in Anchorage Bowl, Eagle River, and part of Girdwood | Hillside, Chugiak, Turnagain Arm, Eklutna, and Girdwood rely on wells/tanks |
| Power & Gas | Extensive network with redundancy | Overhead lines and substations in forested areas |
| Health Care | Multiple hospitals and clinics | Anchorage hospitals depend on air and ground access and stable utilities; wildfire smoke or power loss could delay patient transfers and disrupt statewide emergency care. |
| Communications | Broad cell and radio coverage | Towers in remote areas are vulnerable to fire. There are also significant dead zones for cell coverage. |

**Glenn and Seward Highways**: The Seward Highway is the only link from Anchorage to Whittier and the Kenai Peninsula. Similarly, the Glenn Highway is the only roadway that connects Anchorage with the rapidly growing Matanuska-Susitna Valley. Closure of either of these highways has imposed significant economic and safety impacts. Hazard fuel mitigation to protect these corridors is critical.

**Alaska Railroad**: Anchorage is the central hub of the Alaska Railroad main line, which runs from Seward in the south to Fairbanks in the north. It serves as a major transportation corridor for

both freight and tourism, carrying more than 540,000 passengers and approximately 3.5 million tons of freight each year. As a key military logistics route, the railroad is essential to Department of Defense operations, supporting the movement of materials for Joint Base Elmendorf–Richardson as well as northern installations including Fort Wainwright, Eielson Air Force Base, and Clear Space Force Station. While critical to Alaska's economy and defense infrastructure, the railways within Anchorage can also be a source of wildfire ignitions, particularly during periods of high fire danger.

**Eklutna Lake**: As the primary water source for the Municipality of Anchorage, the Eklutna Water Treatment Facility and Eklutna Lake Road corridor are critical assets. Implementing hazard fuel reduction and defensible space treatments in these areas will help protect essential infrastructure, reduce potential wildfire damage, and improve access and effectiveness for suppression operations.


**Figure 19 – University Medical District**

**University Medical (U-Med) District:** [80] The UMED District features many critical sites, including Alaska Public Media, Alaska Native Tribal Health Consortium, Alaska Pacific University, Alaska Psychiatric Institute , Anchorage School District, McLaughlin Youth Center, Providence Alaska

80 https://www.google.com/maps/d/u/0/viewer?mid=1P9I0P5IGX3T9DngunRXMXbahzwQt9XzK&femb=1&ll=61.187423972246386%2C-149.79711363696774&z=14

Medical Center, Southcentral Foundation, and the University of Alaska Anchorage (UAA).[81] While split between multiple SPUs, the UMED area is bordered by densely forested lands on both its north and south sides, placing it near significant wildland fuels.

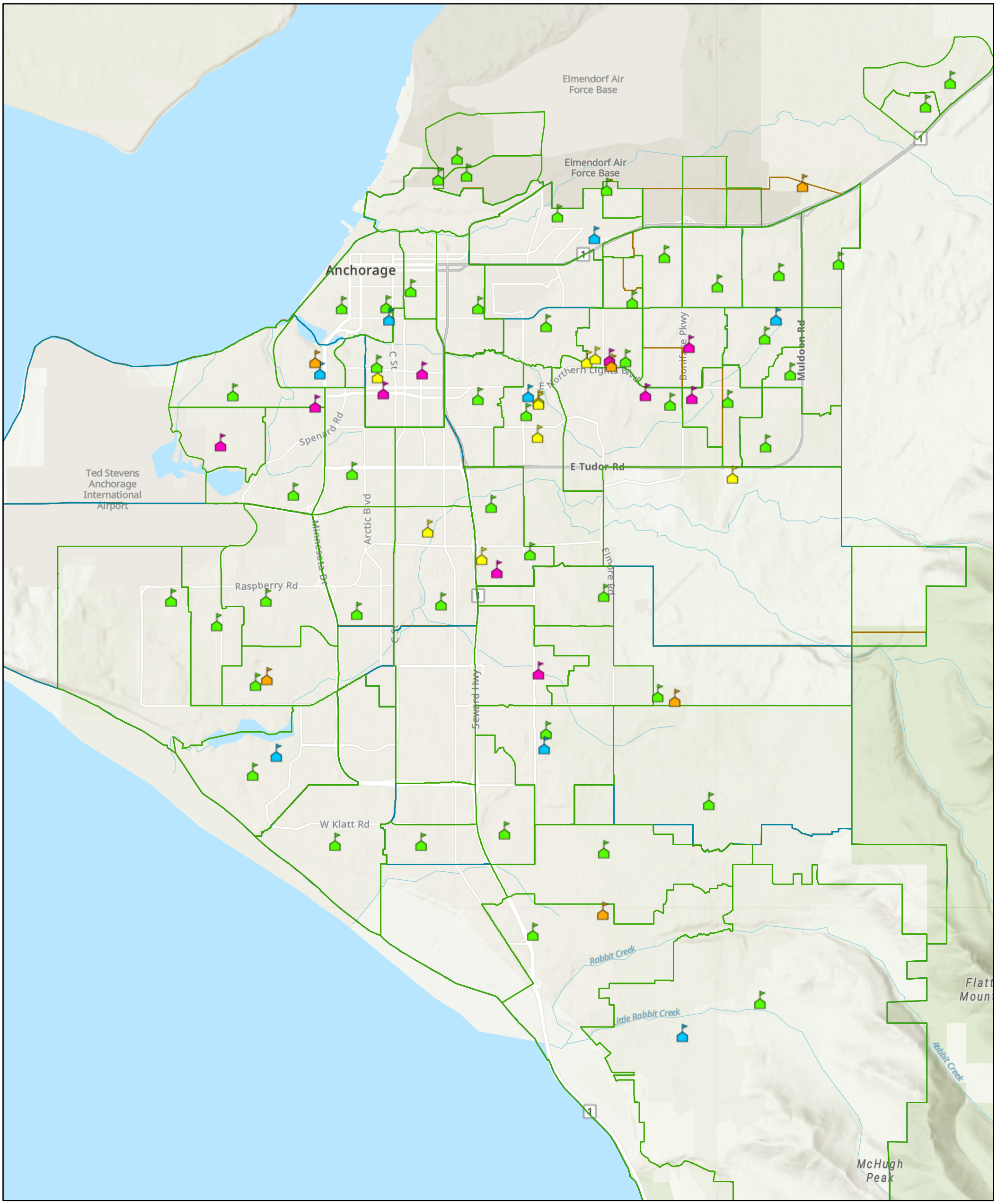
The entire state relies on the hospitals within Anchorage, and two of the three Anchorage hospitals are in this area. Smoke from nearby wildfires can hamper the ability for helicopters to safely land on the hospitals', delaying emergency care.

Other important structures and services include:

- Nursing homes
- Schools
- Fire stations
- Community centers
- Regional airports

[81] https://www.muni.org/Departments/OCPD/Planning/Publications/Documents/UMED%20District%20Plan%20Update-2016/UMED%20Plan%201-Exec%20Sum.pdf

# Figure 20 - ASD Schools - Anchorage Bowl

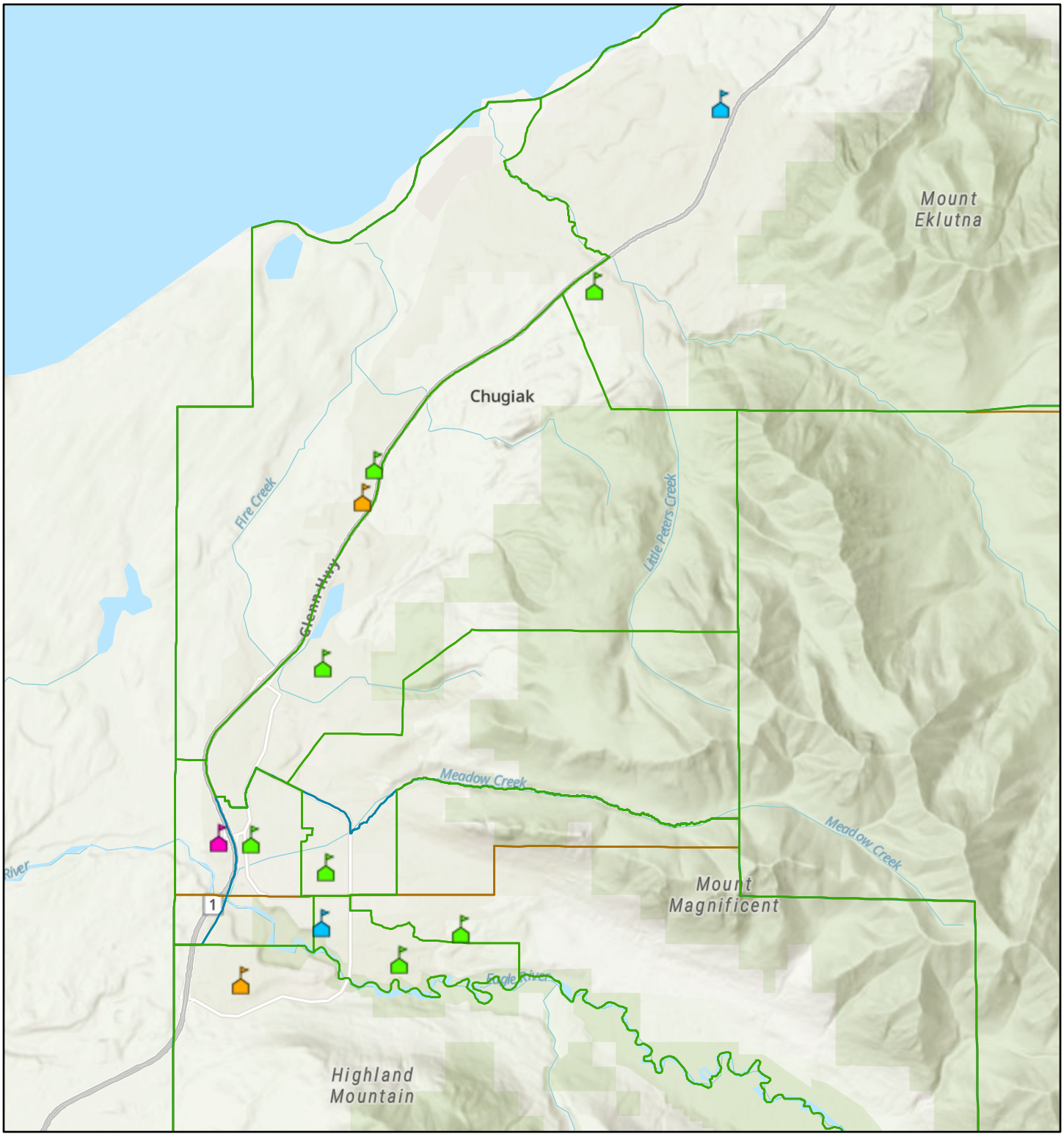



ASD Schools

- Elementary
- Middle
- High
- Charter
- Alternative
- ASD Elementary School Attendance Areas
- ASD Middle School Attendance Areas
- ASD High School Attendance Areas
- World_Hillshade

https://services2.arcgis.com/Ce3DhLRthdwbHlfF/arcgis/rest/services/AnchorageSchoolDistrict_Hosted/FeatureServer

# Figure 21 - ASD Schools - Anchorage Bowl




ASD Schools

- Elementary
- Middle
- High
- Charter
- ASD Elementary School Attendance Areas
- ASD Middle School Attendance Areas
- ASD High School Attendance Areas
- World_Hillshade

https://services2.arcgis.com/Ce3DhLRthdwbHlfF/arcgis/rest/services/AnchorageSchoolDistrict_Hosted/FeatureServer

# BLM AK Administered Lands

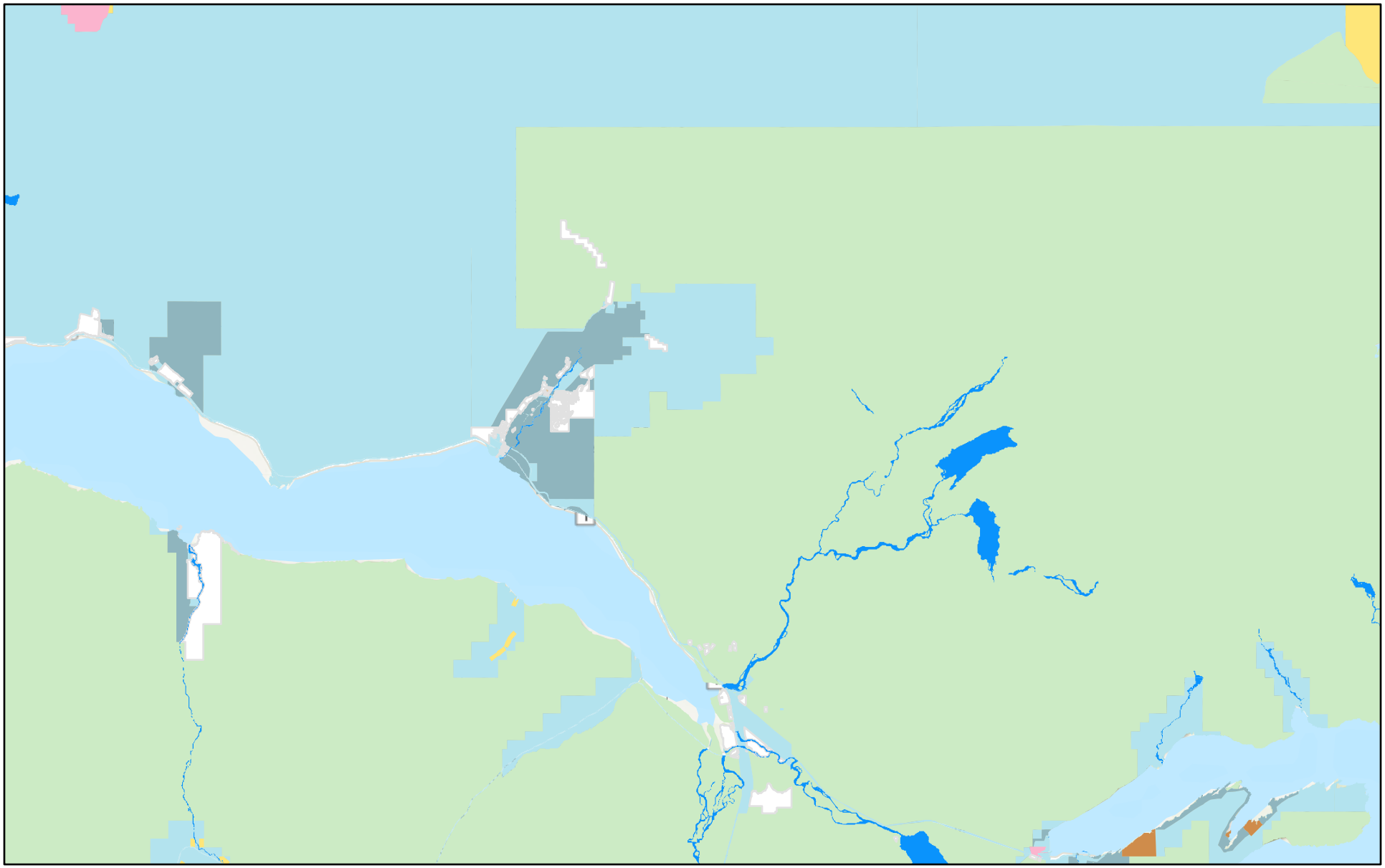



Figure 6 - BLM AK Administered Lands, Southern Communities

https://www.arcgis.com/apps/mapviewer/index.html?url=https://gis.blm.gov/akarcgis/rest/services/Land_Management/BLM_AK_Administered_Lands_SMA/FeatureServer/0&source=sd

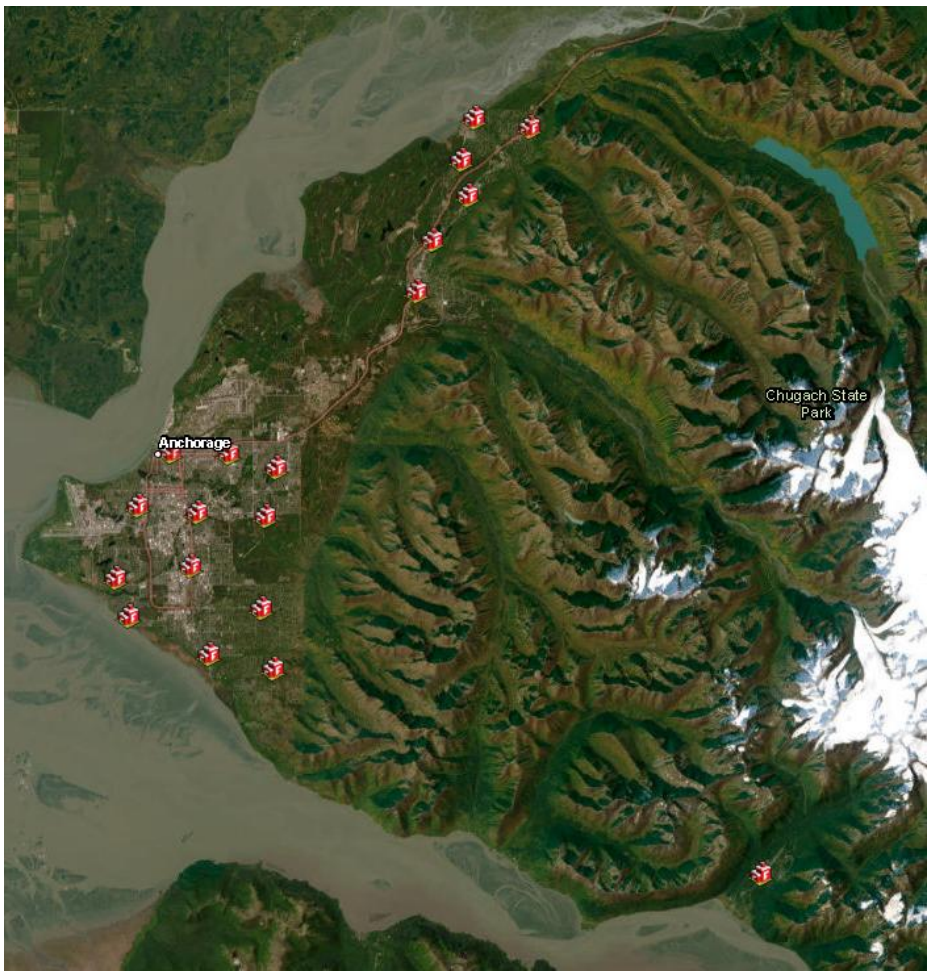



**Figure 23 - Fire stations**[85]

[85] https://experience.arcgis.com/experience/1170079e0aac464c87a0a5eb280cd6a4

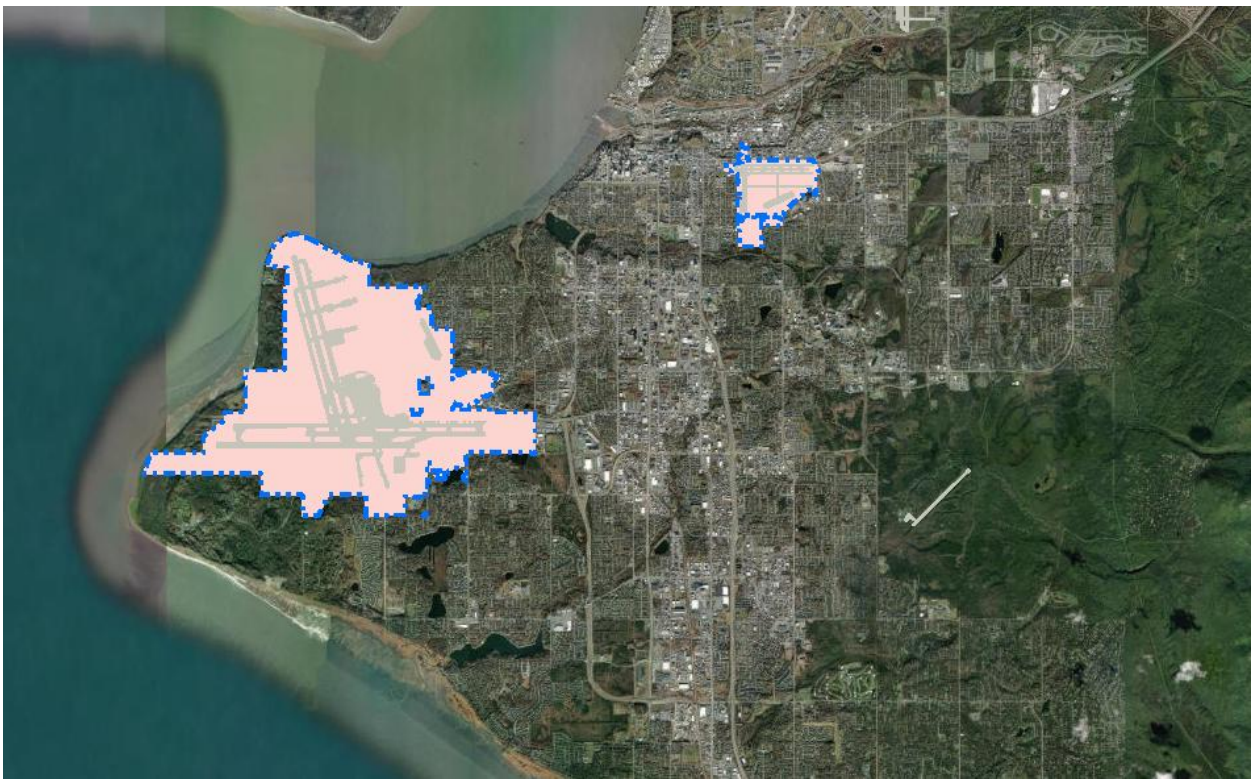


**Figure 24 - MOA Airport Boundaries, Anchorage Bowl[86]**

[86] https://experience.arcgis.com/experience/1170079e0aac464c87a0a5eb280cd6a4

**Figure 25 – MOA Airport Boundaries, Northern Communities[87]**

**Figure 26 – MOA Airport Boundaries, Southern Communities[88]**

[87] https://experience.arcgis.com/experience/1170079e0aac464c87a0a5eb280cd6a4
[88] https://experience.arcgis.com/experience/1170079e0aac464c87a0a5eb280cd6a4

Anchorage's infrastructure and public services provide a strong foundation for community safety. Identifying where vulnerabilities overlap with wildfire risk is central to their protection. protecting both critical systems and the residents who depend on them.[89] All infrastructure should be evaluated as potential sites for hazard fuels mitigation, defensible space creation, and structure hardening.

[89] Data sources: Anchorage Fire Department (2023), Municipality of Anchorage Office of Emergency Management, Anchorage Water and Wastewater Utility, Chugiak and Girdwood Volunteer Fire Departments.

# Firefighting Capabilities and Water Supplies

Anchorage is served by the Anchorage Fire Department, Chugiak Volunteer Fire and Rescue Department, Girdwood Fire and Rescue Department, and Alaska Division of Forestry & Fire Protection. These agencies maintain automatic and mutual-aid agreements to ensure coordinated coverage and resource sharing for all emergencies within the Municipality of Anchorage (MOA).

**Figure 27 – Fire Service Areas, Anchorage Bowl, AFD Service Area (green)[90]**

[90] https://experience.arcgis.com/experience/1170079e0aac464c87a0a5eb280cd6a4

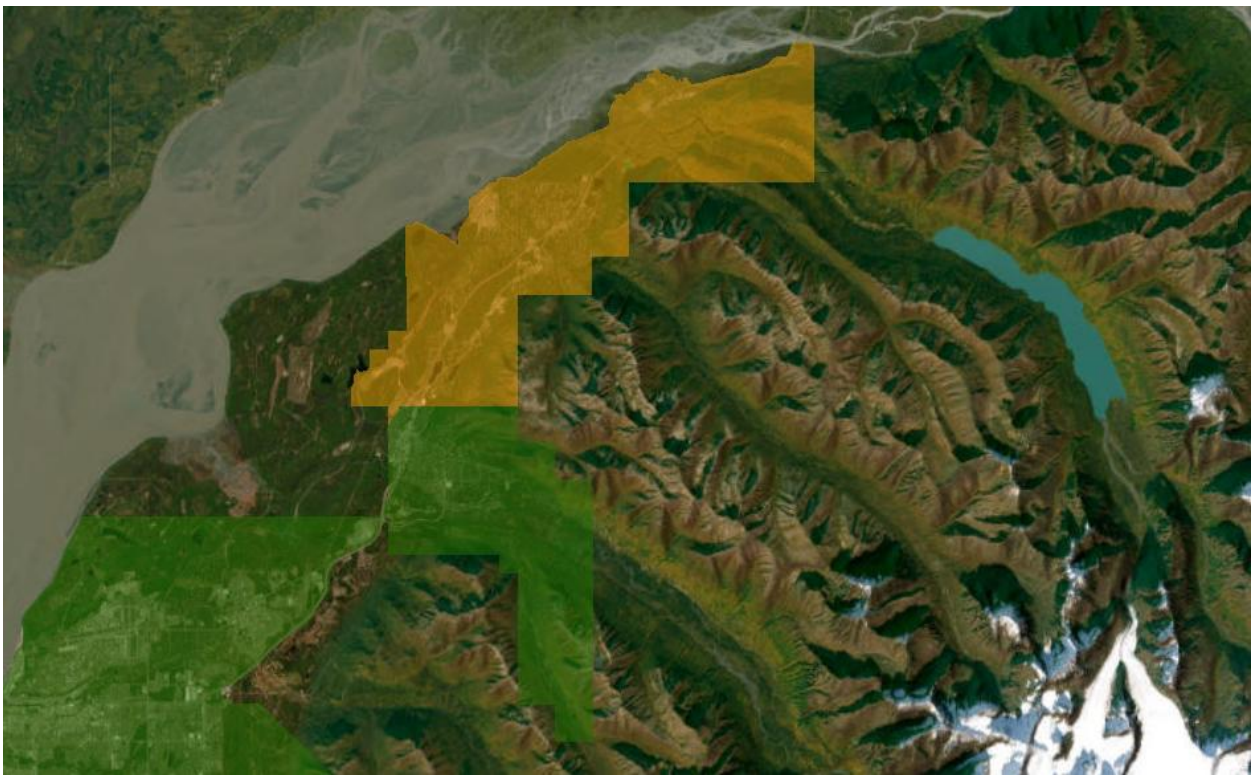


**Figure 28 – Fire Service Areas, Northen Communities, AFD Service Area (green) & CVFRD (yellow)[91]**

[91] https://experience.arcgis.com/experience/1170079e0aac464c87a0a5eb280cd6a4

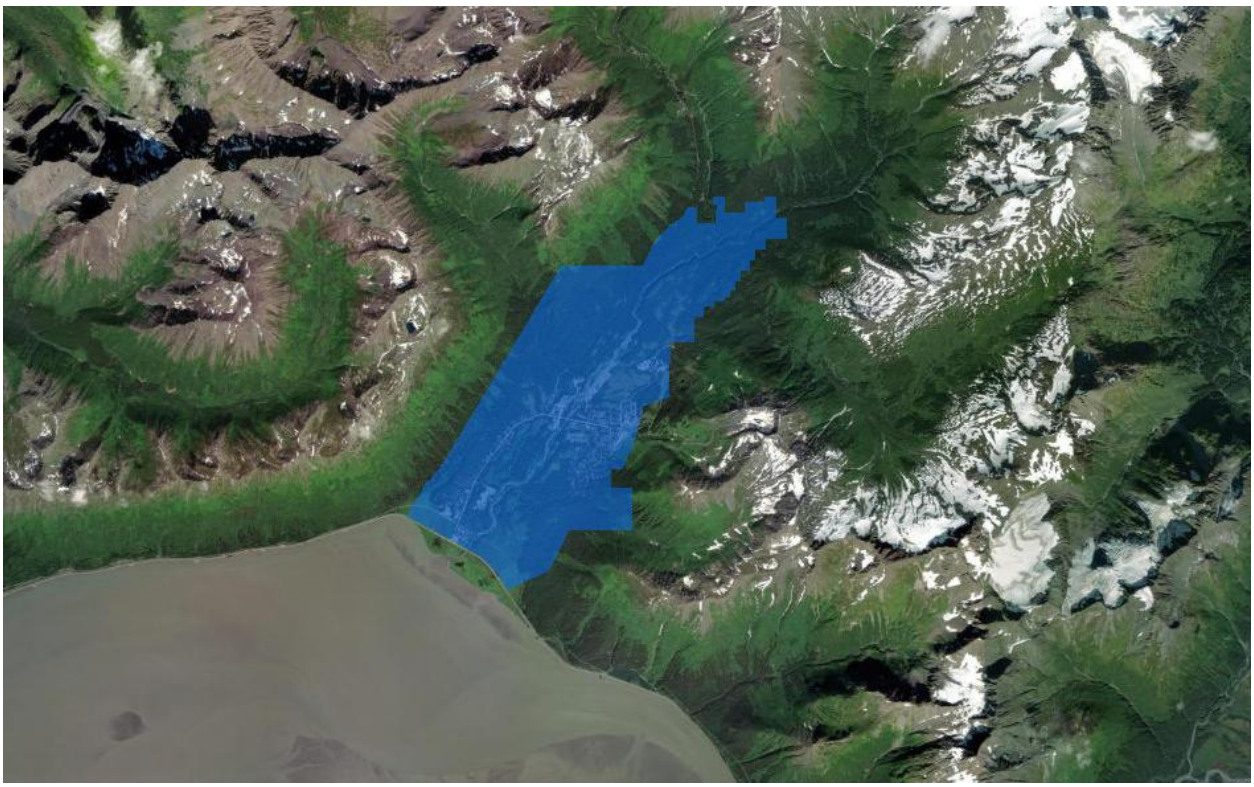


**Figure 29 - Fire Service Areas, Southern Communities, GFRD Service Area (blue)[92]**

**Firefighting capabilities and water supply systems:**

- **AFD** covers approximately 166 square miles of the Anchorage core area, with region-wide EMS coverage extending to nearly 1,961 square miles. Fire protection in hydranted areas is supported by the Anchorage Water & Wastewater Utility (AWWU) hydrant network, while non-hydranted areas rely on mobile water supply operations, including tenders, portable tanks, and drafting from natural water sources.
- **CVFRD** serves roughly 47 square miles of suburban and rural communities north of Anchorage with five stations and provides both structural and wildland fire response under mutual-aid agreements with AFD and DOF.
- **GFRD** operates under contract with the MOA to provide fire, rescue, and EMS services for the Girdwood Valley and Turnagain Arm area, using apparatus suited for remote terrain and limited-access environments.
- **Alaska Division of Forestry & Fire Protection (DOF)** holds primary suppression jurisdiction for wildland fires across the entirety of the Municipality, including areas outside of local fire service boundaries. DOF leads wildfire response in coordination with AFD, CVFRD, and GFRD to ensure unified command and efficient resource deployment.

[92] https://experience.arcgis.com/experience/1170079e0aac464c87a0a5eb280cd6a4

The Alaska State Fire Marshal's Office further supports community fire safety through enforcement (Life Safety Inspection Bureau), engineering (Plan Review Bureau), and education (Bureau of Fire Accreditation, Standards, and Training).

Together, this system of agencies, mutual-aid agreements, and coordinated water supply strategies provides comprehensive fire protection and emergency response across Anchorage's diverse urban, rural, and wildland environments.

## Fire Suppression Needs

**Limited Advanced Training:** While structural fire response is well-practiced, there is a lack of advanced wildland fire training within the departments. This limits the ability of firefighters to effectively respond to the unique challenges posed by WUI fires. To meet current and future wildland fire response requirements, it is recommended that all responders within the MOA meet or exceed Federal Emergency Management Agency (FEMA) and National Wildfire Coordinating Group (NWCG) standards appropriate to their roles.

By 2030, AFD operations personnel should achieve and maintain the following NWCG qualification levels:

| Position | NWCG Qualification Level | Timeline |
|---|---|---|
| Battalion Chief | Incident Commander Type 4 / Task Force Leader | 2030 |
| Captain | Incident Commander Type 5 / Engine Boss | 2030 |
| Engineer | Firefighter Type 1 / Engine Operator | 2030 |
| Senior Firefighter | Firefighter Type 1 / Faller 2 | 2030 |
| Firefighter | Firefighter Type 2 | 2030 |

AFD's ability to meet and sustain these qualifications depends on stable funding for training, staffing, and certification management. Without a permanent local investment, each funding lapse resets progress, delays qualification renewals, and erodes institutional knowledge.

Establishing a Public Training Provider (PTP) agreement with the Alaska Wildland Fire Coordinating Group (AWFCG) will allow AFD to deliver NWCG-certified courses internally, up to the 300 level. Partnering with the Alaska Division of Forestry & Fire Protection, Department of Homeland Security & Emergency Management, and BLM Alaska Fire Service will expand FEMA and NWCG certification access for all municipal responders. A collaboration with the University

of Alaska Anchorage (UAA) to offer college credit for these courses will further enhance recruitment and professional development.

Training and certification funding should follow a shared model, supported by municipal, state, and federal sources, but anchored by a consistent local base to ensure year-to-year continuity.

**Limited Wildland Response Resources:** While Anchorage Fire Department (AFD) has made significant progress in wildfire planning, and mitigation, the department's wildland response fleet remains limited compared to the growing wildfire threat across the Municipality. Existing apparatus are heavily utilized and lack the capacity to support extended or large-scale incidents, or simultaneous responses across the municipality.

To meet current and future operational demands, it is recommended that AFD invest in a modernized fleet of wildland apparatus and equipment to ensure reliable and effective wildfire response capability within the Municipality, including Chugiak and Girdwood.

Recommended Additions:

- 3 new Brush Trucks: To expand initial attack and tactical suppression capacity across the entire MOA.
- 3 new Slip-In Units: To enhance flexibility and allow for conversion of existing utility and support vehicles into Type 7 engine configurations during peak fire activity. Current slip-in units are more than 25 years old and are failing.
- 2 new Tactical Tenders: To provide mobile water supply in remote areas and sustain operations where hydrant access is limited or unavailable.
- 4 new UTVs with Slip-In Units: To improve mobility and firefighter access in areas with limited road infrastructure, including trail systems, parks, and greenbelts.

Operational Distribution:
These resources will be strategically distributed throughout Anchorage's service area and extended to Chugiak and Girdwood fire service areas to strengthen regional coverage, improve mutual aid readiness, and enhance overall suppression capability.

By building a balanced and distributed wildfire fleet, AFD will enhance its ability to respond rapidly to multiple incidents, sustain operations during high-fire periods, and provide equitable protection across both urban and outlying areas. This investment represents a critical step toward long-term wildfire readiness, reducing reliance on limited state and federal assets, extending the service life of existing equipment, lowering maintenance costs, and improving overall safety and efficiency during wildfire and all-hazard operations.

## Water Supply for Fire Suppression

The locations of hydrants within the municipality are available via a map maintained by AWWU, which is available to the public and fire suppression agencies.

The following SPUs, divided by region, have been identified as having insufficient or no hydrants.

Northern Communities:

- Eklutna Village
- Upper Eagle River
- Hiland
- Lower Eagle River
- West Chugiak
- East Chugiak

Anchorage Bowl:

- Potter Heights
- South Rabbit Creek
- Bear Valley
- Glen Alps
- DeArmoun
- Upper Hillside
- Birch
- Lower Hillside
- Stuckagain

Southern Communities:

- Rainbow
- Girdwood

Outside of hydranted areas, the Alaska Division of Forestry & Fire Protection (DOF) and local fire agencies have identified numerous lakes, reservoirs, and other draftable water sources that can be used to shuttle water to fire scenes. These locations are identified on shared mapping applications used by responding agencies; however, they must be regularly updated and maintained to ensure accuracy and reliability, particularly for operations in Girdwood, Chugiak, and other non-hydranted zones.

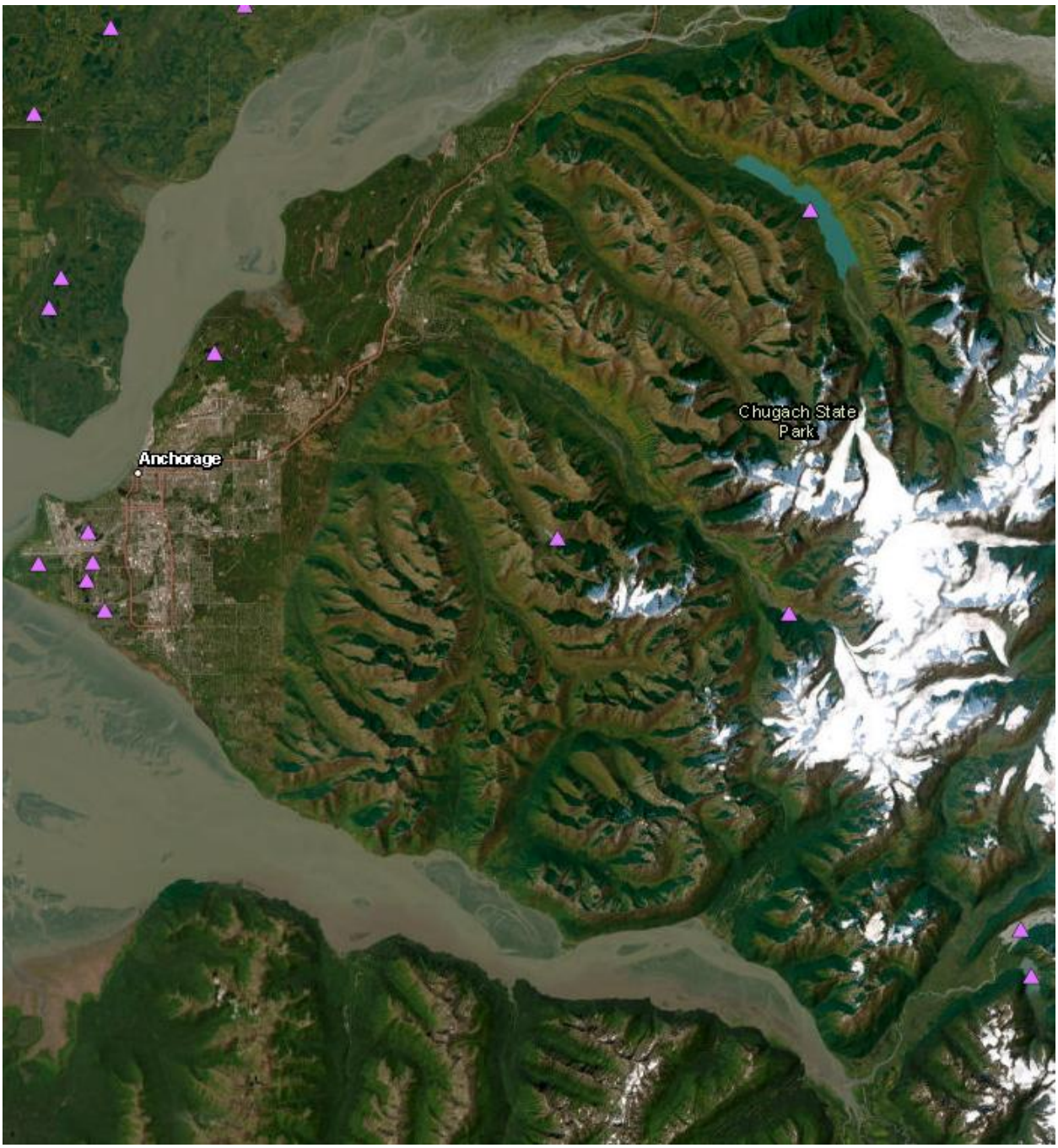



**Figure 30 - Water Supplies**[93]

## Water Recommendations

Establishing and maintaining reliable water sources and infrastructure is a shared practice among all response partners in Anchorage. This includes identifying and maintaining dip and draft locations throughout each service area. Engineered water supplies should be clearly

[93] https://fire.ak.blm.gov/arcgis/rest/services/MapAndFeatureServices/WaterSources/FeatureServer/0

documented according to their intended use—such as retention ponds designated for wildfire operations versus hydrant systems designed for structure fire suppression—with delivery capacities recorded.

All fire department connections, whether installed on man-made systems (e.g., tanks or cisterns) or natural draft sources (e.g., dry hydrants), should be tested annually and serviced as needed. Up-to-date maps of all water sources should be maintained and made accessible to responding agencies.

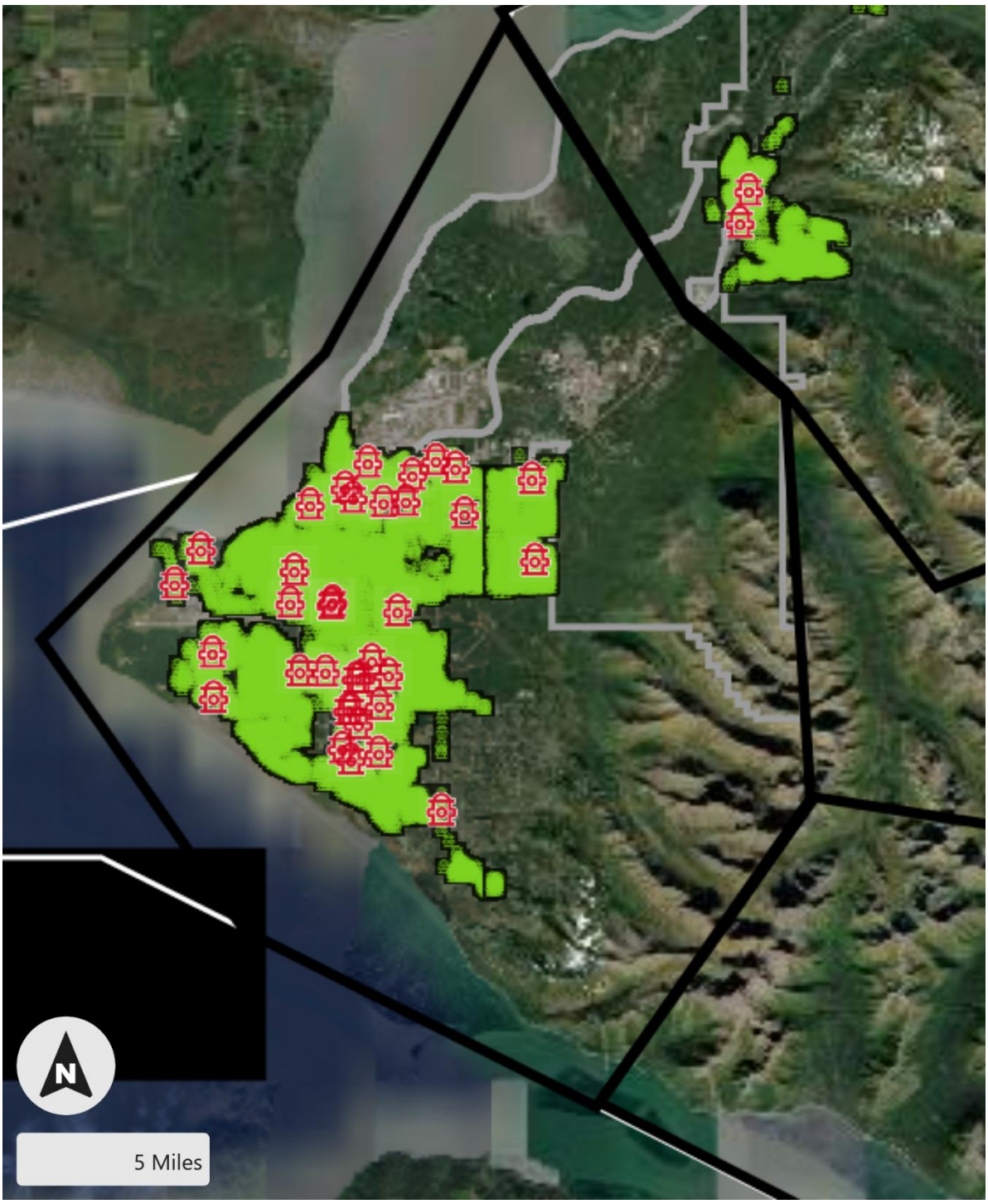



**Figure 31 – MOA Fire Hydrants, Anchorage Bowl, hydrants (green) & redtop hydrants (red)[94]**

94 https://www.arcgis.com/apps/mapviewer/index.html?url=https://agsportal.awwu.biz/arcgis/rest/services/Portal/External_Hydrant/MapServer

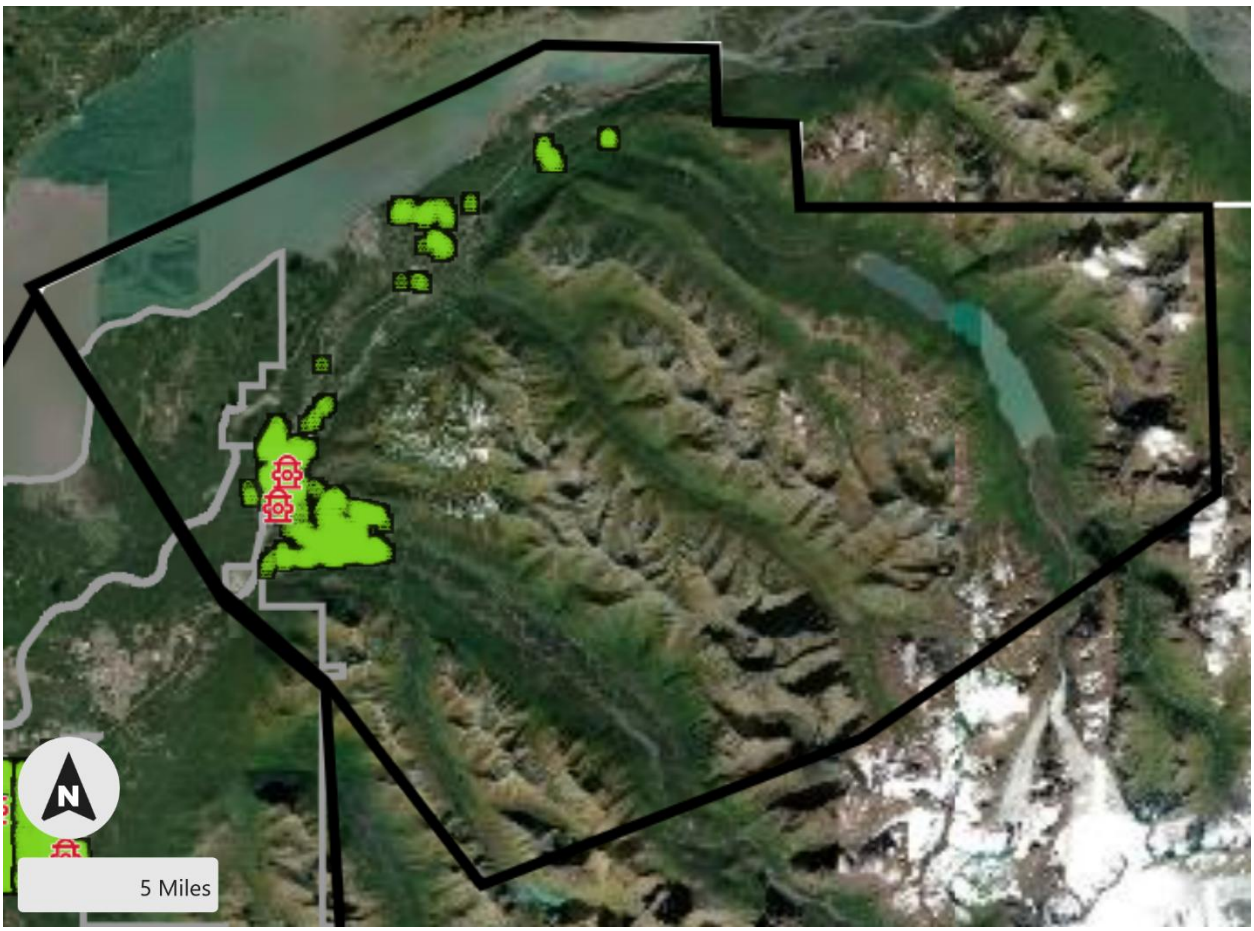



**Figure 32 – MOA Fire Hydrants, Northern Communities, hydrants (green) & redtop hydrants (red)[95]**

95 https://www.arcgis.com/apps/mapviewer/index.html?url=https://agsportal.awwu.biz/arcgis/rest/services/Portal/External_Hydrant/MapServer

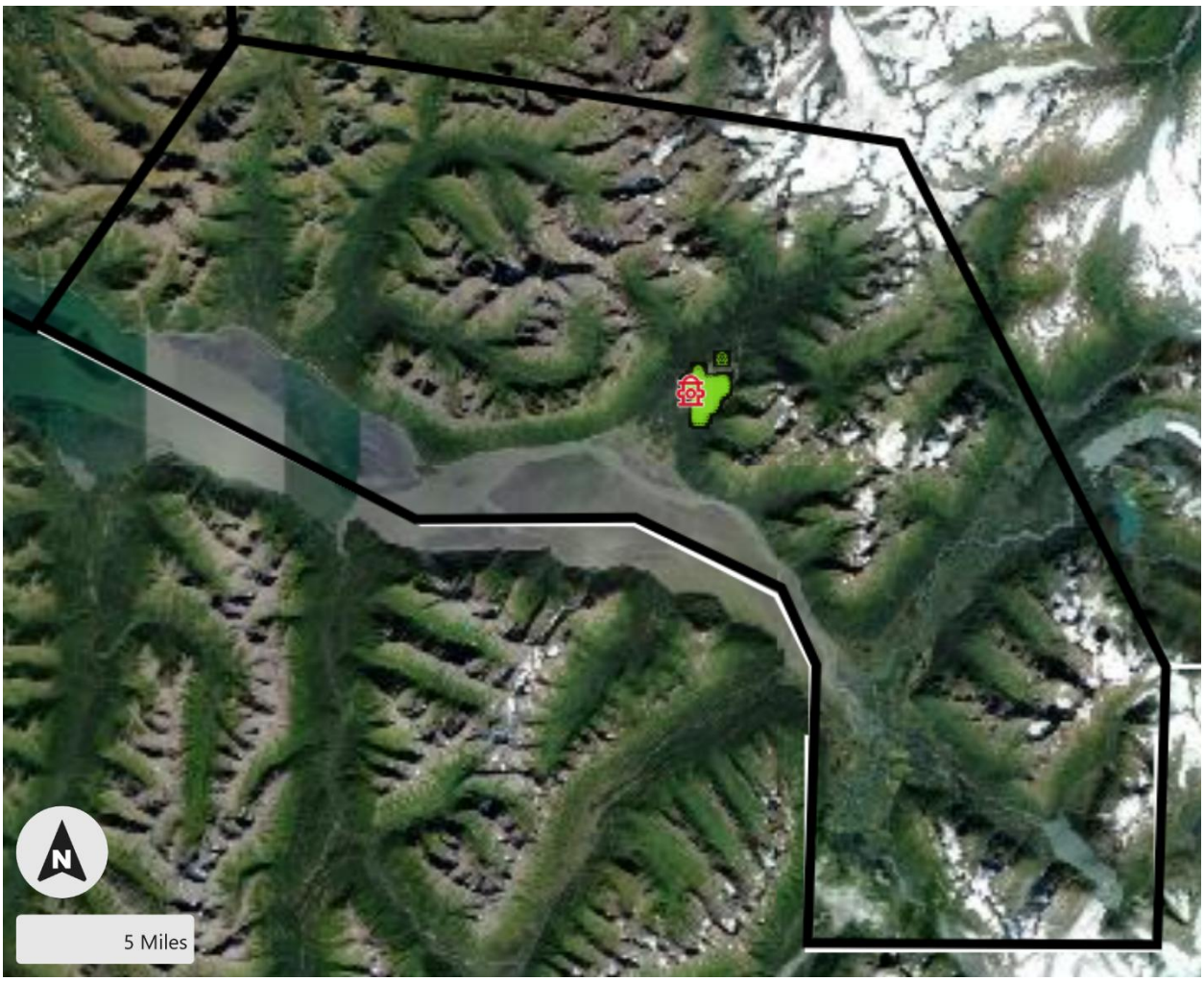



**Figure 33 – MOA Fire Hydrants, Anchorage Bowl, hydrants (green) & redtop hydrants (red)[96]**

96 https://www.arcgis.com/apps/mapviewer/index.html?url=https://agsportal.awwu.biz/arcgis/rest/services/Portal/External_Hydrant/MapServer

## Develop a robust Wildfire Division

Given the elevated wildfire risk within the MOA, it is recommended that a Wildfire Division be permanently established and municipally funded. This program will serve as a dedicated operational unit responsible for protecting lives, property, and infrastructure while preserving natural and cultural resources.

The Division's work extends far beyond suppression; it is responsible for mitigation, planning, training, public outreach, and interagency coordination. A stable municipal investment ensures continuity across these focus areas, allowing AFD to maintain a year-round presence rather than rebuilding capacity each fire season.

This program should be comprised of the following components:

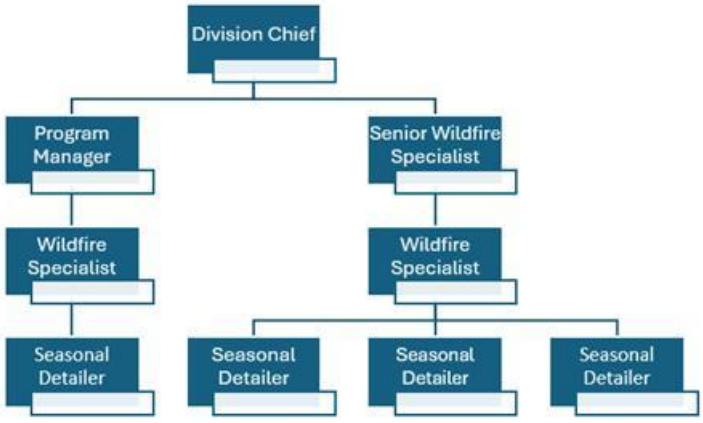
- Community Assistance – Mitigation/prevention, education, and outreach programs that build local wildfire readiness.
- Fire Planning – Apply science-based management strategies to guide suppression operations safely and effectively.
- Fuels Management – Implement vegetation treatments and fuel breaks along critical egress corridors, protecting communities and supporting local contractors.
- Safety – Integrate safety as a core principle across all planning and field operations.
- Training – Maintain ongoing and recommended professional development and NWCG certification for all staff.
- Wildland Fire Operations – Provide direct suppression response, suppression, predictive services, and incident qualifications management.

The team will identify and collaborate to source funding opportunities for wildfire mitigation and recovery programs or projects within the MOA. Efforts will also include local training and outreach opportunities to increase awareness of wildfire mitigation and intended risk reduction outcomes. The team will respond to all wildland fires alongside the AFD, CVFRD, and GFRD to operate in unified command to provide personnel and equipment as necessary and manage or support the incident.

Responsibilities of this team will also include:

- Home ignition zone (HIZ) and defensible space assessments
- Building inspections for wildfire defensibility
- Supporting the Neighborhood Ambassador Program
- Coordination of community chipper and fuels reduction projects
- Oversight of public education campaigns and community engagement events
- Participation in Complex Incident Management Team (CIMT) deployments
- Representation in AWFCG working groups, state and national training events

## Roles and Responsibilities




**Wildfire Division Chief**

Provides overall leadership and strategic direction for the Wildfire Division. Oversees suppression readiness, hazardous fuels mitigation, and community resilience programs. Serves as the primary liaison to municipal leadership, the Mayor's Office, OEM, and external partners including the State of Alaska Division of Forestry & Fire Protection, BLM Alaska Fire Service, and AWFCG. Manages budgets, personnel, and interagency coordination to align local wildfire preparedness with national standards.

**Wildfire Division Program Manager**

Provides leadership and support in program development, administrative operations, and grant management. Oversees grant writing, compliance, and fiscal tracking for all wildfire funding streams. Coordinates updates to the CWPP, facilitates public outreach and interagency engagement, and contributes to strategic planning and program growth. Works closely with community councils, partner agencies, and local organizations to advance Anchorage's wildfire resilience initiatives.

**Senior Wildfire Specialist**

Leads the Division's training program and maintains firefighter qualification records in the Incident Qualification System (IQS) and ensures compliance with NWCG. Manages fuels mitigation projects, contractor coordination, and environmental standards. Provides operational leadership on wildfire incidents and works closely with the Alaska Division of Forestry & Fire Protection to support safety initiatives, mutual aid coordination, and field-based training activities.

**Wildfire Specialists**

Two permanently funded positions provide direct support to AFD through specialized qualifications for wildfire response within the Municipality of Anchorage and on out-of-area deployments. One specialist manages the Division's Unmanned Aerial Systems (UAS) Program, supporting detection, mapping, and situational awareness during wildfire incidents. Both specialists assist with equipment management, GIS data collection, fuels project tracking, and community education. In addition, they serve as instructors for NWCG courses taught during the off-season, enhancing the department's internal training capacity and workforce readiness.

**Detailers**

Four AFD personnel of varying ranks will be temporarily assigned to the Division each May–September. These seasonal assignments enhance brush apparatus staffing, expand Firewise outreach, and provide hands-on wildfire experience for operations personnel. This approach strengthens department-wide wildfire capability and succession planning without adding permanent positions, while also creating opportunities for focused wildfire training and qualifications within the department during the height of wildfire season. This ensures that targeted personnel can obtain advanced NWCG qualifications and gain the operational experience needed for future leadership roles.

# Access/Egress & Evacuation

## Ready-Set-Go

Along with the remainder of Alaska, the municipality employs the Ready-Set-Go program for wildfire events.[97]

### Ready: Be Prepared

**Long before the emergency of a wildfire, prepare yourself and your property.**

- Create defensible space around your home
- Harden your house, using/retrofitting with fire-safe materials
- Assemble emergency supplies and create a "go kit"
- Plan primary and secondary escape routes from your home and neighborhood
- Create an emergency action plan and make sure your family and guests know what to do
- Sign up for Smart 911, the Municipality's emergency notification system

### Set: Be Alert

**A wildfire has been announced. Now is the time to be vigilant.**

- Review your emergency action plan
- Monitor the latest news on the fire: akfireinfo.com, social media (AFD, AK-DOF)
- Grab your "go kit" and load up
- Consider relocating to a shelter outside the affected area
- If there is time, shut off ignition sources such as propane and natural gas
- Turn exterior lights on and close all windows and doors
- Park your car outside, facing the road

### Go: Act Now

**Evacuate NOW.**

- Execute your emergency action plan
- Leave early to prevent becoming a hazard to responders
- Continue to monitor the latest news: akfireinfo.com, social media (AFD, AK-DOF)

## Access and Egress Analysis

The map below was used during the SPUHR analysis to identify areas across the Municipality with limited access and egress—critical factors influencing wildfire response and evacuation safety. As shown, most single-access and dead-end roads are located directly adjacent to forested lands, where dense vegetation and steep terrain heighten wildfire risk. SPUs with

[97] https://www.muni.org/Departments/Fire/Wildfire/Pages/ReadySetGo.aspx

these conditions are addressed in the analysis, with mitigation strategies outlined in *Appendix D: Mitigation Recommendations*.

Across Anchorage, neighborhoods and recreation areas with only one way in or out face the greatest vulnerability during wildfire events, as restricted routes can delay evacuation and hinder emergency access. Common contributing factors include narrow or winding roads, vegetation encroachment, and high visitor use in parks and trailhead areas. Addressing these limitations through fuel reduction, roadway maintenance, and strategic access improvements is essential to strengthen public safety and operational effectiveness during emergencies.

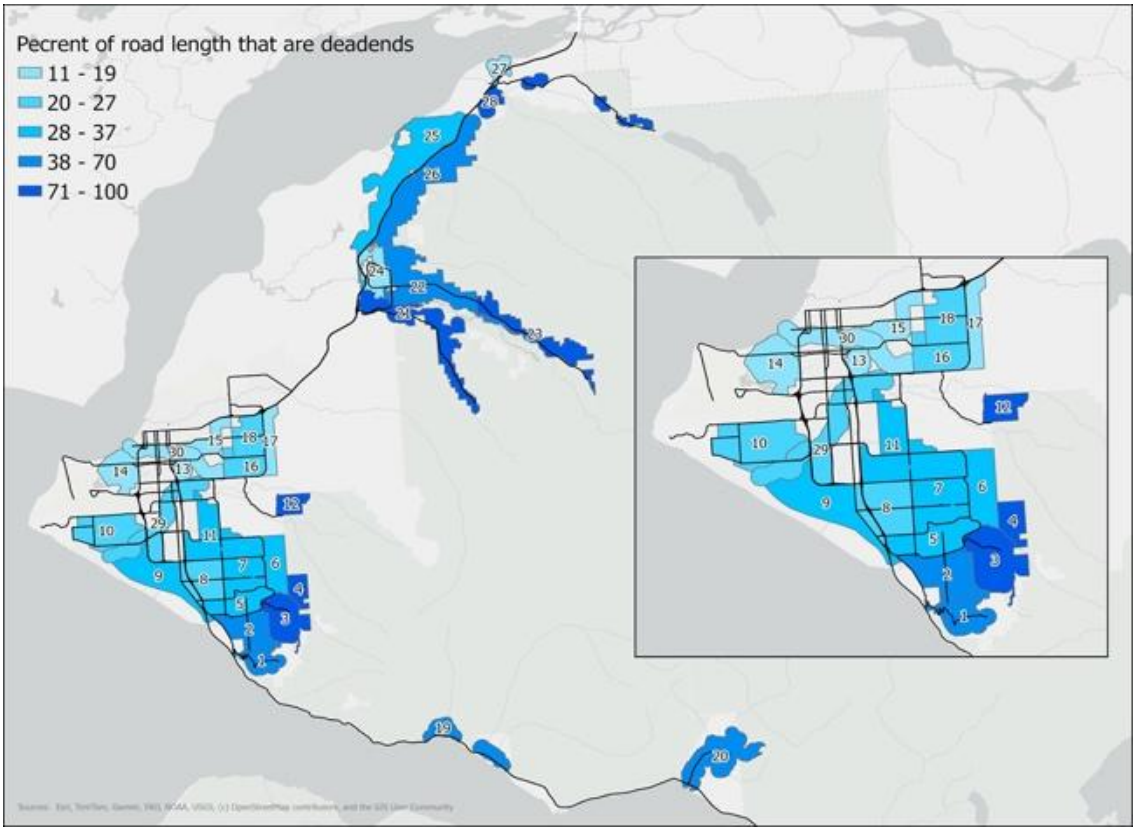



**Figure 34 – Percentage of Dead-End Roads in SPU**

## Emergency Operations and Evacuation

The MOA's Office of Emergency management manages the Comprehensive Emergency Operations Plan (CEOP). The excerpt below is from the CEOP's Wildfire Plan, found in Section 3, Plan Designation LL. The lead cooperating agencies are the AFD and the AK-DOF.

## MOA Community Wildfire Protection Plan

The plan notes that while wildfires are a disaster emergency, they can also create secondary hazards, such as hazardous material incidents, dangerous air quality conditions, and utility outages.

An effective response to a wildfire is supported by early identification of an imminent threat, successful evacuation of threatened individuals, coordination with the Anchorage National Weather Service (NWS) Weather Forecast Office, and timely restoration of impacted lifelines and critical facilities.

## MOA OEM Comprehensive Emergency Operations Plan

See the excerpt below from the Municipality of Anchorage Office of Emergency Management Comprehensive Emergency Operations Plan 2022.[98]

*Incident Objectives*

*In the MOA, the response and activation for a wildfire will be dictated and driven by the scope and location of an event. Most wildfires occur in backcountry environments that do not pose a major threat to large populations or infrastructure. The MOA's wildfire response strategy is based on the following objectives:*

- *Ensure the safety of the public and response personnel.*
- *Manage a coordinated response effort.*
- *Protect environmentally sensitive areas.*
- *Minimize economic impacts.*
- *Reestablish essential services.*
- *Keep the public informed of response activities.*

*Critical Tasks*

*In a wildfire response, critical tasks may include the following:*

- *Engage subject matter experts to understand the scope and severity of the threat.*
- *Provide timely, verified, and actionable information to the public and manage rumors and misinformation.*
- *Evacuate individuals at risk from wildfire.*
- *Establish perimeters around areas of high risk and enact road closures on threatened or impacted roadways.*

[98] https://www.muni.org/Departments/OEM/Plans/Documents/MOA%20CEOP%20All%20Sections%20Combined%20-%20Signed%2016%20May%202023.pdf

- *Locate individuals who have been affected by the wildfires; rescue and transport as able without risking the safety of first responders.*
- *Restore function of lifelines and critical facilities promptly.*

*Impacts*

*Wildfires can cause the following impacts on public safety in the MOA:*

- *Injury and loss of life*
- *Infrastructure damage*
- *Disruptions to government and privately provided services*
- *Environmental damage, including destroyed ground cover, that can lead to future landslide activity*
- *Impacts on local industry and commerce*
- *Excessive costs associated with wildfire-fighting services, clean-up operations, and repairs to damaged structures*
- *Reduction in ability to fight day-to-day fires due to overextended fire, EMS and police response*

*Citizens should report fires to 911; AFD will then notify the Office of Emergency Management (OEM) about situational awareness during normal business hours or the OEM duty officer after hours. AFD will relay any support needs to OEM, and the EOC will be activated as necessary.*

Evacuation Notification

The Municipality of Anchorage uses multiple alerting systems to notify residents of evacuation warnings and orders. Emergency messages may be delivered through television, radio, wireless alerts to mobile phones, and opt-in text and telephone notifications. These tools help ensure residents receive timely information during fast-moving wildfire events. Staying informed and signing up for local emergency alerts is a critical part of being prepared. *(See **Appendix B: Resident Handbook** for full alerting system details and registration information.)*

## Challenges

There are driveways and some community access roads with no signage throughout the study area. Missing or inadequate address markers can be an issue. Many homes do not have an address marker visible from the street, and some are of all types with no standard for size or position and effectiveness during a fire. Although mapping applications have made it easier for responders to locate specific addresses, reflective address markers visible from the street are still desirable. There is no cell service in some parts of the study area for mapping applications and radio communications are difficult throughout. All applications relying on GPS technology

have some difficulty pinpointing addresses from time to time and it is important to remember that technology does fail.

While some residents may consider reflective address signage to be unattractive, it is essential for quick and effective response. The value to responders, especially at night under difficult conditions, cannot be overstated. This is especially true during large wildland fires where poor marking creates challenges for outside responders who do not have training and experience regarding local access.

Due to MOAs status as a popular tourist destination and as a starting point for many of the tourists traveling through to other destinations in Alaska, evacuations in an emergency can be much more complex. Wildfire and Evacuation education events allow MOA to educate its residents on alert systems and evacuation procedures, reaching the high volume of tourists that visit during fire season can provide a difficult challenge.

## Access and Egress Route Fuels Mitigation

Roadside treatments are designed to dramatically reduce fuels and promote survivable conditions along roadways during wildfires that allow for safer evacuation and firefighter response. Prescriptions for shaded fuel breaks and complete removal of trees are sometimes appropriate at evacuation or operational pinch points and should follow ecological and stand-level restoration principles. The Alaska Department of Transportation and Public Facilities (DOT&PF) manages a program that aims to remove enough fire fuel to reduce the severity of wildfires and increase controllability. Many roads within the wildland have variable terrain and almost all are heavily encroached by light, flashy fuels. The width of an effective roadway fuel treatment is dependent on slope, vegetation density and the arrangement of fuels. Treatments should extend 150 to 250 feet on the downhill side and 100 to 150 feet on the uphill side.

Road maintenance in Anchorage is shared among several entities, creating varied responsibilities for roadside vegetation management and other actions that support access and egress. The Municipality of Anchorage Street Maintenance Section oversees most municipal roads, while the DOT&PF manages state-owned highways and major arterials. In outlying areas such as Chugiak/Birchwood/Eagle River, Girdwood, and the Anchorage Hillside, road maintenance falls under Rural Road Service Areas (RRSAs) or Limited Road Service Areas (LRSAs), which operate through local boards and contracted providers. Because fuel conditions and maintenance authority differ between jurisdictions, coordination among agencies is essential to ensure roadside treatments are consistent, effective, and support safe evacuation and fire response.

## Recommendations

- All common driveways and private access roads should be marked with reflective signage showing the addresses accessed at every junction.
- For driveways and dead-end access roads longer than 150 feet, a cleared turnaround for

fire apparatus should be provided. Turnarounds may consist of a "cul-de-sac" with a minimum 45-foot radius, a 60-foot “Y”, or a 120-foot "Hammerhead" with a road width of at least 20 feet for dead end roads and driveways 151 feet to 500 feet in length and a minimum road width of 26 feet for dead-end roads and driveways longer than 500 feet.

- Where recommended by fire agency officials, roadway turnouts should be at least 12 feet wide and 30 feet long with a minimum 25-foot taper on each end. Roadways should be at least 20 feet wide, wherever possible. This is to accommodate Type 1 fire engines that may be up to 102 inches, or 8.5 feet, in width exclusive of mirrors, fixed steps or suppressant devices.[99]
- Conduct interagency annual pre-incident wildfire training with the purpose of enhancing collective understanding of interagency communication, clarification of roles and responsibilities, strengthening the coordinated response to a sustained wildfire emergency within the MOA.
- Community Councils should collaborate with their designated representatives in the Wildland Urban Interface Citizens Advisory Team (WUI-CAT) to plan and conduct community-led evacuation drills. Regular coordination between Community Councils and their WUI-CAT representatives will strengthen local preparedness and ensure alignment with municipal wildfire response strategies. The Anchorage Fire Department Wildfire Division participates in WUI-CAT meetings and can assist with basic coordination between community organizers and local fire stations to support these exercises.

# National Wildland Strategy

While wildfire resilience involves contributions from all levels of government to provide the proper level of resources and support to prevent, suppress, and recover from wildfire events, it critically relies on homeowner mitigation. The National Cohesive Wildland Fire Management Strategy[100] provides an approach to living with wildfire combining landscape-scale fuel treatments, homeowner mitigation, fire science, safety and evacuation, and suppression. Programs like Firewise USA and Fire Adapted Communities (FAC) complement this strategy.

99 https://www.fama.org/wp-content/uploads/2018/01/TC009-Em-Veh-Weight-Reg-FAMA-IAFC-111122.pdf

100 https://www.forestsandrangelands.gov/strategy/thestrategy.shtml#alignment

The goal of this project is to present mitigation projects and recommendations that are consistent with state and federal strategy, initiatives and funding programs. This serves to help agencies in the municipality increase communication, collaboration and funding for wildfire mitigation, fuel reduction, and community engagement. These general objectives focus on creating the infrastructure and support that will accelerate the completion of local projects. Specific recommendations and treatments are described further in the following section and maps, and in *Appendix D: Mitigation Recommendations*.

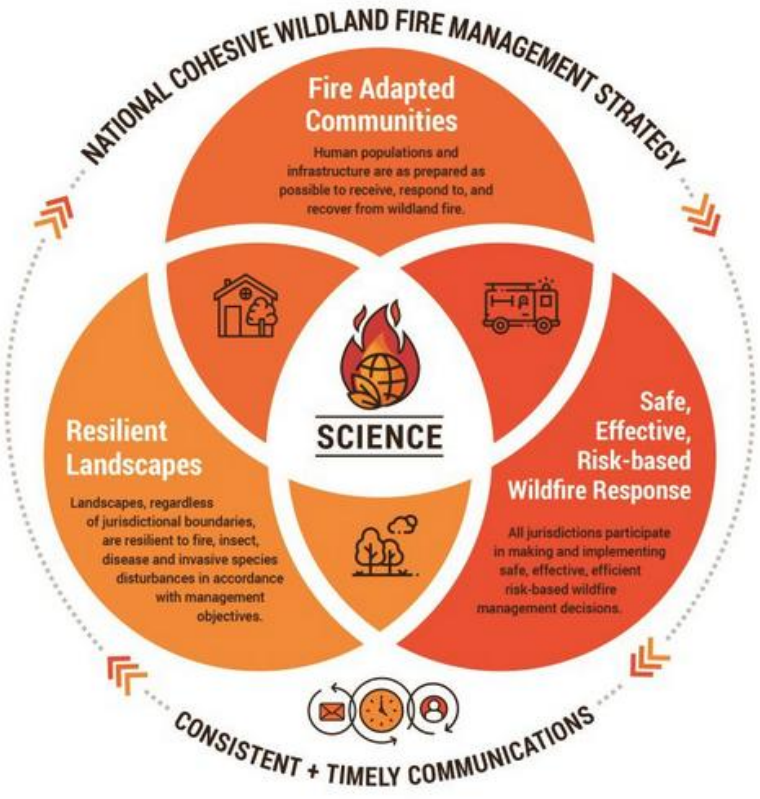



Figure 35 - National Cohesive Wildland Fire Management Strategy

**Critical Implementation Recommendation:** Support and increase staff of AFD Wildfire Division to support homeowner assessments and drive implementation of the CWPP. All the objectives and recommendations in this plan need a champion and AFD has a great start that is already operating.

# Fuel Management and Wildfire Mitigation

Wildfire mitigation actions are on the ground treatments implemented to reduce the chance of a wildfire causing damage. As more people build homes, operate businesses, and recreate in areas where natural vegetation meets human improvements, wildfire threats to life and property increase in the Wildland Urban interface (WUI). The municipality is host to a range of diverse ecosystems that include dense forests, grasslands, parks, wildlife refuges, and military bases that extend right up to unmanaged wildland fuels. For this plan, the common conceptual definition of WUI is the geographical area where human development, including structures and other infrastructure, meets or intermixes with undeveloped wildlands.

Fire resilience requires the proper level of resources and support to prevent, suppress and recover from wildfire events. The reduction of wildfire risk through mitigation falls generally into two categories: first, homeowner mitigation through home hardening and defensible space, and second, stand-level fuel treatments through agency and interagency projects.

## Homeowner Mitigation – Home Hardening and Defensible Space

The importance of homeowners completing hardening measures immediately surrounding the home and property cannot be overstated. Recent studies show the importance of converting to or using non-combustible materials in existing and new building construction; however, many of these products are expensive and retrofitting an entire property can be daunting. Annual maintenance can be difficult and tedious in some areas depending on the structure's construction type and location relative to adjacent fuels; however, recent fires like those on the Island of Maui (2023) and Los Angeles (2025) have proven its importance. Fire regimes are quickly shifting, making homes and buildings the driest, most receptive fuel available in a fire path. Urban conflagrations transmit fire from house to house and are impossible to model at this time. Home assessments that properly document fuels and landcover within the home ignition zone (HIZ) are needed but are costly and time consuming to complete. Additionally, homeowner participation and personal privacy limitations vary widely between differing areas and populations.

A complete discussion of HIZ recommendations for homeowners is provided in *Appendix B: Resident Handbook*. There are also great resources available from the AK-DOF website, the Insurance Institute for Business & Home Safety (IBHS), and local fire districts and departments. The discussion below focuses on Stand-Level Treatments that are expensive and require interagency and landowner collaboration. Descriptions of the different types/methods of mitigation are provided in the next section.

## Stand-Level Fuel Treatments

Fuel reduction treatments are intended to create heterogeneous landscapes and decrease the density of trees, brush, and grasses while increasing age, size, and species diversity. Fuel treatments are most effective when multiple strategies are combined, and when multiple agencies and/or land managers coordinate adjacent projects. The goals of these projects are to modify fire behavior, improve access/safety for suppression teams, and improve forest health - preferably a combination of all three.

Strategic fuel treatments across larger landscapes can significantly reduce wildfire intensity and spread, create opportunities for successful fire suppression, and reduce threats to communities. The complexity of land ownership and access in Municipality of Anchorage requires fuel treatments to be strategically located to maximize effectiveness for community protection. Coordination among landowners and agencies is essential to create effective treatment networks that cross ownership boundaries and support ecological restoration objectives.

Research, and AFD's own experience, demonstrate that proximity to state-funded fire mitigation projects correlates positively with increased private spending by homeowners on their own properties (Mitchell D., Smidt M., 2019), amplifying the effectiveness of public investments through community engagement.

## Mitigation Treatment Types

### Road Infrastructure

These recommendations are intended to increase access/egress during fire response that is either in, or has the potential to spread into, WUI areas. Road infrastructure improvements include but are not limited to the installation of new roads, road-widening, installation of additional lanes, limiting lanes/parking to fire/emergency access vehicles, etc. Projects range from increasing traffic load/hour during peak travel times, to the installation of designated/restricted emergency-only access lanes. Mitigation along road easements can also be included in these projects.

### All-Emergency Evacuation Safety

These recommendations aim to update and/or repair road signage conditions that have deteriorated under normal conditions and intend to increase visibility and the safety of responders during evacuations. Activities include but are not limited to the installation/maintenance/repair of roadside markers and guardrails, evacuation route signage, reflective road signs and street markers, and clear/visible driveway and house markers. These visual indicators are utilized by responders in route to an emergency, and by the public during high-traffic or all-emergency evacuation events.

### Forest Health and Wildfire Mitigation

These projects, in whole or in part, include on-the-ground treatments implemented with the objective of reducing the risk of wildfire causing damage while improving forest health. These recommendations can include, but are not limited to, hazardous fuels reduction, pre- & non-commercial thinning, and Rx (prescribed fire) burns. Successful implementation of wildfire mitigation objectives depends on a shared responsibility where local governments, residents, and emergency services work hand in hand to create safer, more resilient communities better equipped to prevent and recover from wildfires.

### Ecological Reclamation

Restoration activities are coordinated through multiple agencies to ensure treatments simultaneously support biodiversity conservation, habitat connectivity, and water quality protection across the municipality's complex ownership patterns.

## Urban and Community Forestry

These projects are funded in coordination with municipal and parks departments and aim to preserve native plants and manage forests for public benefit and quality of life. These include urban canopy assessments and work within greenbelts and urban corridors. While there is certainly some risk related to wildfire in these forests, they are generally handled by municipalities.

## Prescribed (Rx) Burns

Prescribed burning (Rx burns) in the wildland-urban interface (WUI) requires careful planning, community education, and coordination among multiple agencies to address community concerns about smoke, safety, and ecological impacts. Locally, Rx burns take the form of pile burning, wetland maintenance, and ecological restoration.

**Figure 36 - Prescribed (Rx) Burn**

## Tree and Shrub Planting

These projects aim to rehabilitate and/or reclaim an area by increasing tree or shrub cover or promoting specific species. These projects can be recommended with the intention of re-introducing native species to reduce fire risk, or re-seeding previously logged/fire affected areas.

## Invasive Species Management

These projects manage invasive species to reduce, remove, or otherwise influence their impact on the forest and surrounding ecosystems. Agencies manage vegetation on their properties throughout the municipality through mowing, spraying, and Rx fire in limited areas. These recommendations are intended to reduce ladder fuels and restore historic forest conditions.

## Firebreaks

A firebreak is an area where vegetation and surface organic material are reduced or removed to limit the spread and intensity of wildfire. In Anchorage's forested environments, firebreaks are typically designed to reduce flame lengths, slow the rate of spread, and transition canopy fires back to the ground, where suppression crews can safely engage. These features may also serve as control lines during active fire operations and, where feasible, should be designed to improve access for suppression resources to otherwise difficult or inaccessible areas.

While firebreaks provide clear benefits by reducing fuel buildup and enhancing operational access, they can also alter local wind behavior, potentially increasing wind speeds and the risk of wind throw or ember transport. Therefore, the tradeoffs must be carefully evaluated and

planned by experienced professionals to ensure that fuel management and access improvements are achieved without creating unintended impacts.

### Workforce Development and Training

Training events, budgeting, equipment acquisition, and staffing recommendations are focused on maintaining or promoting forest health, resilience, and protection. These projects include cross-training firefighter and other emergency personnel in both structural and wildland firefighting methods and tactics.

## Mitigation Methods and Techniques

The projects recommended in this plan, whether homeowner or stand-level may use any combination of the following methods. The design of a project and the methods used are a critical contribution of the AK-DOF staff, experienced contractors, and other agencies with expertise in this domain.

### Hand-Thinning

Hand-thinning involves hand crews with chainsaws manually cutting and removing vegetation, including trees, shrubs, and grasses. This method is particularly useful for precision work near sensitive areas such as residential zones, campgrounds, and wildlife habitats. Work done by hand is time and labor intensive, yet effective in steep, rough terrain where heavy equipment cannot operate. It is generally the most expensive.

### Selective Removal/Shaded Fuel Break/Limbing/Pruning

Aesthetic and commonly used by parks, a shaded fuel break involves modifying above-surface fire fuel to limit wildfire's ability to spread rapidly. In areas where precise work is required, hand-thinning is used to selectively remove material while limiting destruction in the area and preserving native plants that provide ecological benefits. This type of treatment can be used to clear vegetation within **30 to 100 feet** of structures and should be accompanied by limbing and pruning to reduce ladder fuels and potential fire pathways.

In dense fuel stands, hand-thinning operations could fail to achieve fire mitigation objectives if fuels created by harvest activities (also known as slash) are not removed (Agee and Skinner, 2005). See Slash Management discussion for options to mitigate surface fuel loads created by fuel management. This method of fuel reduction is labor-intensive and time consuming and requires continuous treatment for long-term effectiveness.

### Mechanized Methods

The optimal approach to vegetation management is determined by steepness of terrain, transportation access, and land ownership. These are large scale treatments commonly used in areas of commercial harvesting. Mechanized removal with heavy equipment is suitable for large firebreaks, treatments that range in size from 30 feet to thousands of acres. This technique

uses the efficiencies of production logging and is used for understory thinning, mastication, and slash management. The effectiveness of treatments often necessitates the integration of multiple mechanical approaches to achieve comprehensive fuel reduction objectives. Sequential forestry operations, combining initial mechanical treatments followed up with prescribed fire or slash management protocols can address fuel accumulation and fire behavior, while supporting broader ecological and industry goals.

## Slash Management

Non-marketable material created by logging, forestry, and fuel reduction operations: slash, represents a fundamental component to the successful completion of fuel reduction projects. Post harvest debris can dramatically alter fire behavior and potentially negate intended risk reduction benefits. Large scale firebreak treatments create large volumes of wood residue that cannot otherwise be diverted or utilized. To create a market for downstream value-add products like wood vinegar, syngas, and biochar, biomass reclamation and utilization processes should be investigated as well as diversion programs through solid waste management.

Slash created by homeowner mitigation should be removed via chipping and/or haul removal supported by municipality programs where possible. Additional larger scale slash management techniques include lop and scatter, mastication, crushing, chipping, haul and removal, and broadcast prescribed burns. MOA has an Open burning ordinance (15.30.080) that restricts wildfire mitigation efforts, including the prohibition of pile burning. Burn permits have not been issued since 2017, and open burning of woody debris, including Spruce Beetle-killed trees, is not allowed. While disposal options like the Solid Waste Service's transfer site and seasonal wood lots are available, they are often inconvenient for homeowners, with wood lots open only a few months in summer. These restrictions significantly limit the homeowners' ability to effectively remove hazardous fuels.

## Mastication

Mastication is a highly effective method for creating and maintaining firebreaks in Alaska’s dense, mixed-fuel environments. It reduces fuel continuity by grinding shrubs, small trees, and ladder fuels into mulch, which lowers flame lengths and slows fire spread. Unlike shear blading or piling, mastication produces a uniform layer of chipped material, minimizing concentrated “jackpots” of fuel and promoting a more consistent surface condition. This technique is cost-efficient for treating large areas and particularly well-suited to Alaska’s black spruce, alder, and mixed hardwood stands, where it enhances firefighter access and long-term fuel manageability while maintaining soil stability and natural aesthetics.

## Roadway Treatments


**Figure 37 - Roadside Mowing Treatment**

Roadside treatments are designed to dramatically reduce fuels and create possible survivable conditions along roadways during wildfires providing for safer evacuation and firefighter response. Prescriptions for shaded firebreaks and complete removal of trees are sometimes appropriate at evacuation or operational pinch points. Many roads through WUI areas have variable terrain and can be heavily encroached by light, flashy fuels in the understory with dense and overgrown trees. In areas such as these where flame lengths (FL) and Fireline Intensity (FLI) could create conditions that are not survivable, it is recommended that 30-foot mow lines are reinforced with mosaic vegetation clearing, shaded firebreaks, and selective thinning/hazard tree removal. The width of an effective roadway fuel treatment is dependent on slope, vegetation density, and the arrangement of fuels. Treatments should extend 150 to 250 feet on the downhill side and 100 to 150 feet on the uphill side. Effective treatments include but are not limited to:

- Clear all limbs overhanging the road to create at least 13.5 feet of vertical clearance to facilitate engine access.
- Remove trees within 20 feet of the road to maintain access for type-1 fire apparatus.
- Create crown spacing by clumping groups of trees and clearing 30 feet of horizontal distance.
- Remove all dead or dying trees that could fall across the road and block traffic.
- Remove ladder fuels.
- Mow tall grasses adjacent to the road.

## Power Line Corridor Fuels Treatments

Wildfires ignited by power system infrastructure tend to cause more damage than other ignition sources because they occur during high wind events when fire can spread rapidly. Between 2016 and 2020, electrical power networks caused 19% of the wildfires that occurred during that period (Western Fire Chiefs Association).

A vegetation management program should include clearances and removal of dead, dying diseased vegetation that could impact lines. Right-of-way (ROW) clearing should be conducted seasonally. Most ROW easements are 50-feet wide and generally clear all brush, vegetation, and trees from ground-to-sky within that area. Hazardous trees outside the 50-foot area that present the likelihood of falling onto distribution lines are removed as well.

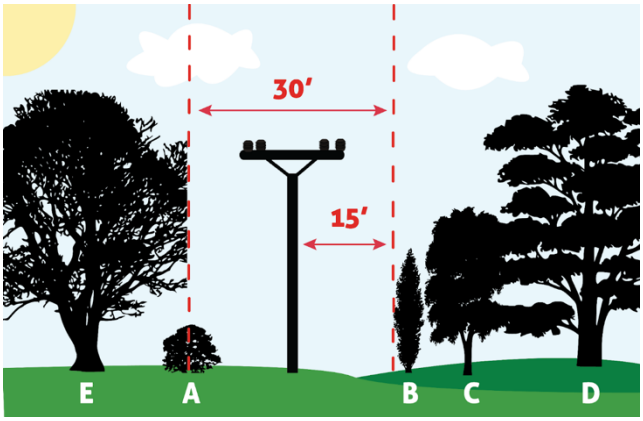



**Figure 38 - Powerline Clearance**

Electric lines that lead to a residence or building are called “house-drops” and are the responsibility of the individual homeowner. A 15-foot-wide clearing from ground to sky is required.

## Public Safety Power Shutoff Areas

Public Safety Power Shutoff (PSPS) areas are areas where overhead powerlines could become a wildfire ignition hazard during high wind and red flag warning events. PSPS is implemented when the risk of wildfire from a line-strike is heightened and is intended to prevent wildfire ignitions from downed energized lines. This also means that during PSPS implementation these areas are without grid power, creating additional challenges for fire suppression crews and communications during evacuations.

## Summary

Landscape scale treatments are generally the responsibility of the government agencies and utilities working closely with large landowners. The USFS, BLM and AK-DOF are the experts on these types and methods and should be consulted for any treatment on all projects outside of the homeowner’s property.

**Specific Treatment Project recommendations are provided in *Appendix D: Mitigation Recommendations.***

# Recommendations

The recommendations which follow are grouped by General, Homeowner, and Mitigation Projects. To avoid duplication and confusion, only the top priorities for the Municipality of Anchorage AOI are discussed below. The complete list is in Appendix D with maps.

## General Recommendations

The general recommendations below are intended to complement and benefit all areas by increasing communication, coordination, and funding for wildfire mitigation, fuel reduction, or community engagement projects. These recommendations focus on creating the infrastructure and support to implement the CWPP mitigation actions and increase the success of local-level projects.

### Identify Priority Fuels-Treatment Areas

The BLM and AK-DOF plan and complete landscape-scale fuel reduction projects around the state, including within the Municipality of Anchorage area of influence (AOI). The Municipality has made significant progress in developing and maintaining mapping products that identify proposed and completed treatment areas across local, state, and federal jurisdictions. Continuing this work is essential to support strategic coordination, resource alignment, and project connectivity across boundaries. The BLM and AK-DOF are encouraged to coordinate closely with the Municipality of Anchorage, which has strong community engagement networks and established local partnerships that can help prioritize, support, and accelerate large-scale implementation of these critical fuel mitigation projects.

### Support a Community Wildfire Committee

Given the increasing complexity of wildfire risk across the Municipality, there is a clear need for a Municipal Wildfire Planning Committee to provide coordinated leadership and strategic direction. The Wildfire Division Chief could serve as the lead for this committee, guiding interagency collaboration and prioritization of wildfire mitigation and preparedness efforts. Membership should include representatives from local fire agencies, municipal departments, and state partners, ensuring consistent communication and joint planning. The committee's primary purpose would be to strengthen wildfire education, community outreach, and coordination of mitigation initiatives, fostering a unified and proactive approach to reducing wildfire risk across the Municipality of Anchorage.

### Mitigation Project Management and Updates

A single point of contact for information regarding all mitigation projects, but especially property owner mitigation projects, should be identified. The point of contact could be part of the committee discussed above or another individual at the Municipality. Updates on planned mitigation projects and accomplishments should be publicized via MOA website, meetings, social media channels, etc. This should include public notice of projects (even when completely

on private land) and guidance as to the approval and planning steps that must be taken. The collective efforts of government and private landowners will provide the maximum benefit for everyone. Given the amount of work to be completed, staffing a mitigation crew for annual maintenance with use of outside firms for initial work and catch-up is recommended.

## Implement Forestry and Ecology School Programs

Several MOA plans reference the need for standing up an MOA Urban Forestry Program. Urban Forestry involves the planning for and management of the trees, forests, parklands and natural areas in and around the areas where we live, work and play. These trees and forests are valuable community infrastructure and convey critical economic, environmental and social benefits, and are a vital component of the identity and way of life in the Municipality. Historically in the MOA, tree management and fuels mitigation projects have often been completed independently of each other, however, vegetation management and fuels mitigations planning should incorporate a Municipal-wide perspective. While most urban forest management activities are not specifically focused on fuels mitigation, the coordination between the urban forestry program and wildfire programs can provide an integrated vegetation management strategy to efficiently and effectively manage vegetation in the MOA to mitigate risks to the community.

## Adopt IWUIC Code

The International Wildland-Urban Interface Code (IWUIC) is one of the adopted series of the International Code Council's set of model building codes. The code sets requirements for vegetation management and ignition resistant construction within the Wildland Urban Interface (WUI) boundary.[101] The IWUIC contains provisions addressing fire spread, accessibility, defensible space, water supply and more for buildings constructed near wildland areas.

The 2024 IWUIC®:

- Establishes regulations to safeguard life and property from the intrusion of wildland fire and to prevent structure fires from spreading to wildland fuels.
- Regulates defensible space and provides ignition-resistant construction requirements to protect against fire exposure and resist ignition by embers.
- Provides standards for emergency access, water supply and fire protection.
- Provides requirements for automatic fire suppression and safe storage practices.
- Is fully compatible with all of ICC's International Codes®.
- Is founded on data collected from tests and fire incidents, technical reports and mitigation strategies from around the world.[102]

[101] https://www.tetoncountywy.gov/FAQ.aspx?QID=168
[102] https://codes.iccsafe.org/content/IWUIC2024V1.0

The International Fire Code (IFC) contains regulations to safeguard life and property from fires and explosion hazards. Topics include general precautions, emergency planning and preparedness, fire department access and water supplies, automatic sprinkler systems, fire alarm systems, special hazards, and the storage and use of hazardous materials.[103]

The MOA has adopted the 2018 IFC with amendments and is currently in the process of adopting the 2024 IFC. While the IWUIC has not been adopted in its entirety, it is adopted by reference. MOA should adopt the entirety of the IWUIC.

## Update Hazardous Vegetation Map

During the evaluation of SPUHR, including fire behavior modeling, it was determined that sections of the municipality require revisions to the hazardous vegetation map. For example, in Girdwood, the presence of hazardous fuels was not accurately represented with respect to their density or the moderating influence of rainfall, resulting in projections that suggested fire behavior like the Anchorage Bowl. According to the Alaska Climate Research Center, Girdwood receives four times more rainfall than the Anchorage Hillside, a factor not currently reflected in the mapping. In Bear Valley, mapping indicated grass fuels as more dominant that black spruce in certain areas, which did not reflect actual field conditions.

To complete accurate analysis of wildfire risk in future efforts, it is recommended to refine the hazardous vegetation and fuel layers to more accurately represent conditions across the municipality. Updates should consider fuel type, density and site-specific influences such as rainfall. Improved mapping will enhance the accuracy of fire behavior modeling and better inform mitigation strategies.

[103] https://codes.iccsafe.org/content/IFC2018P6

## Homeowner Recommendations

Given the large area of the Municipality of Anchorage AOI, the quality of the Home Ignition Zone (HIZ) will be the primary factor in determining home survivability. The HIZ includes the ignitibility of the structure itself and the quality of the defensible space surrounding it.

**The two most important HIZ-level recommendations in this report are:**

1. **Incorporating defensible space techniques and ignition resistant construction in future development plans, and**
2. **Fire hardening of existing structures to the greatest extent practical.**

Detailed information on achieving these goals is presented *in Appendix B: Resident Handbook*

The following general homeowner measures should be practiced throughout the study area.

1. Always be aware of the current and expected fire danger. In times of high fire danger, pack go-bags and create a household plan to speed your exit should evacuation become necessary.
2. Clean roofs and gutters to remove pine needles and other flammable litter from the roof year-round.
3. Do not store firewood or other combustibles under decks, stairs, or wooden projections, or within 30 feet of a home/habitable structure.
4. Maintain and clean spark arresters on any chimneys.
5. See the Access/Egress Routes and Evacuation Recommendations section above and recommendations regarding maintaining driveways and turnarounds at homes to provide a safe evacuation route for residents and access for firefighters.
6. Develop and maintain defensible space as described in *Appendix B: Resident Handbook*. Debris and cuttings should be removed entirely from the area and never dumped into adjacent wildlands or vacant lots.

It is essential to remember that fire mitigation is not a one-time task. Defensible space should be maintained year-round, and reducing structural ignitibility is an ongoing process. **For more information, see** *Appendix B: Resident Handbook***.**

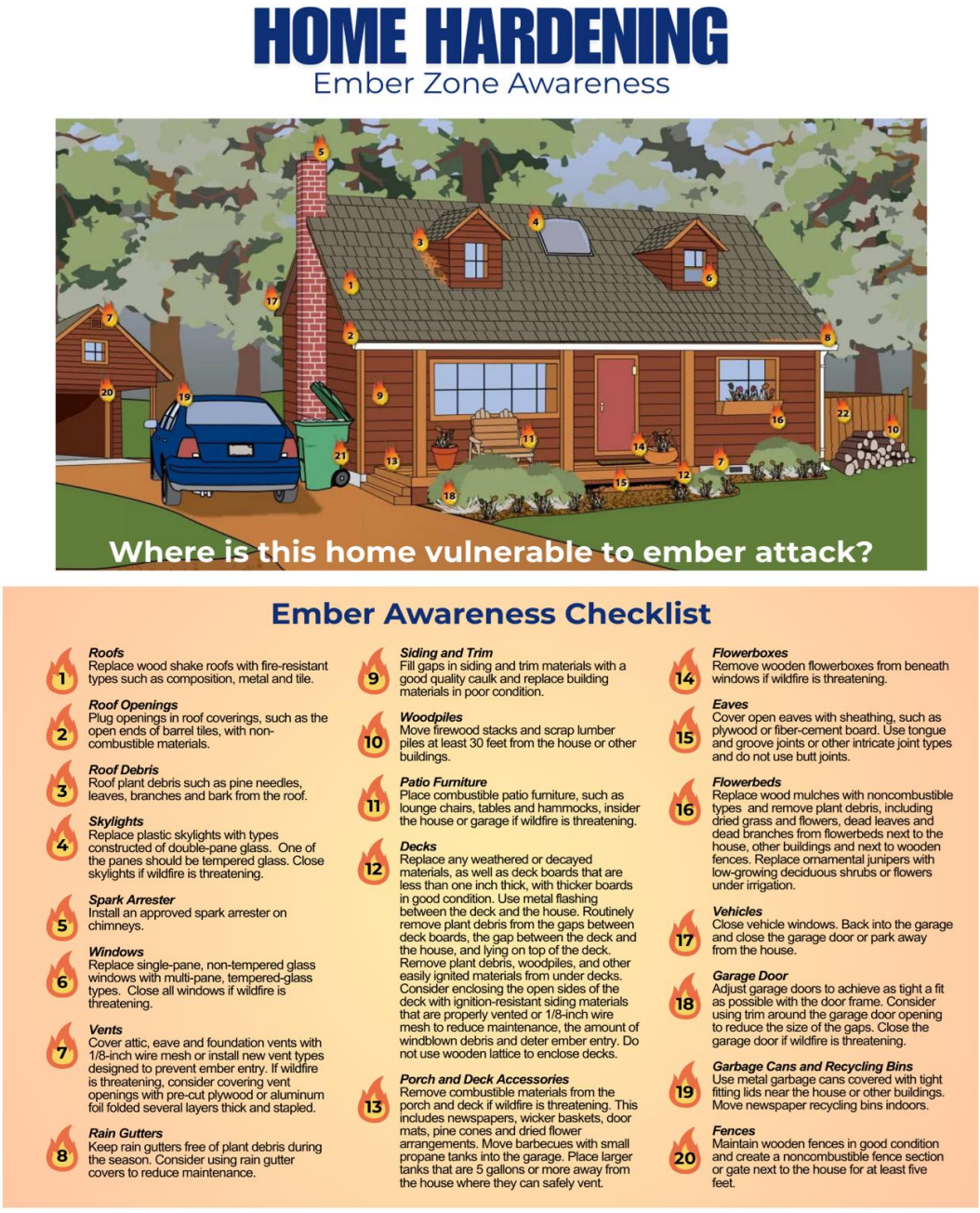



**Figure 39 - Home Hardening Graphic**

## Mitigation Projects

The mitigation project recommendations for Municipality of Anchorage are included in *Appendix D: Mitigation Recommendations.*

Appendix D contains a table of all mitigation project recommendations community members, community groups, land managers, and local, municipality, state, and federal agencies to accomplish immediately or in the mid or long term.

**These are proposed mitigation treatments, and each project must be approved by the respective landowners and respective jurisdictions before any work can be initiated.**

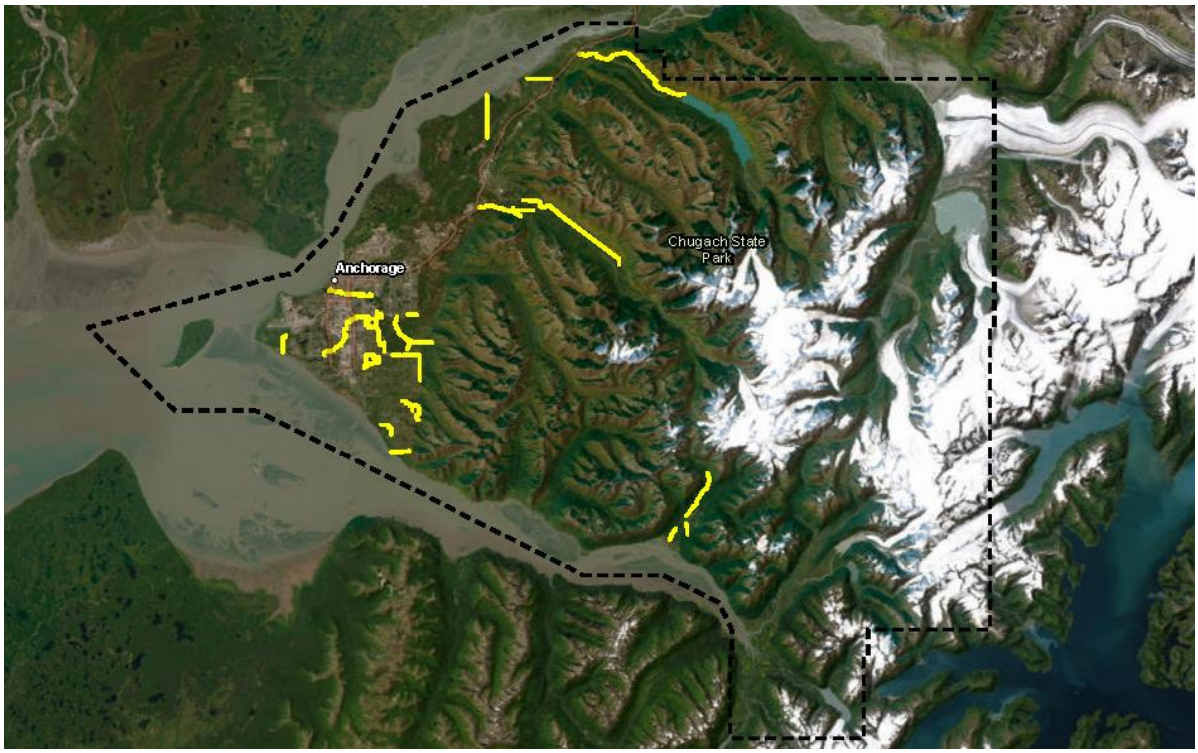



**Figure 40 – Recommended Treatments Map[104]**

[104] https://experience.arcgis.com/experience/1170079e0aac464c87a0a5eb280cd6a4

Note that when considering priorities, certain activities involve minimal financial expense but demand a significant shift in attitudes and behaviors to emphasize wildfire risk mitigation. Other measures are more extensive, calling for community-wide commitment and collaboration to pool resources, apply for grants, and make gradual progress toward impactful change. Many of these recommendations are ambitious and will require increased capacity and funding, as well as patience and dedication from community members and leaders to achieve lasting improvements.

# Municipality of Anchorage CWPP Top Priorities

The analysis completed during this plan's development makes one conclusion unmistakably clear: the single most impactful and preventable action the Municipality can take to safeguard its residents from a catastrophic wildfire is to establish and permanently fund a dedicated Wildfire Division within the Anchorage Fire Department. For too long, Anchorage's wildfire readiness has depended on short-term grants that expire, programs that dissolve, and expertise that is lost between funding cycles. A stable, municipally funded division would end this pattern—providing year-round capacity, sustained community engagement, and the professional foundation needed to protect Anchorage's people, property, and future.

**Context and Justification for Permanent Municipal Funding**

Anchorage faces a steadily increasing wildfire threat, driven by longer, warmer, and drier fire seasons and continued development across the wildland–urban interface (WUI). Despite this growing risk, the Municipality of Anchorage (MOA) has historically relied almost exclusively on temporary state and federal grants to fund wildfire mitigation, preparedness, and outreach activities.

This grant-dependent model has created a cycle of instability; each time funding expired, the program effectively shut down. After the Anchorage Fire Department (AFD) Wildfire Mitigation Office was first established in the late 1990s, the program gradually declined throughout the 2000s as external funding diminished and dedicated staffing was lost. By the early 2010s, it had gone completely dormant, remaining inactive for more than 12 years until being reestablished in 2024. During that period, despite an ever-increasing wildfire risk, mitigation projects halted, public education programs lapsed, and interagency coordination weakened. The absence of a sustained wildfire program left the municipality behind in planning for community wildfire safety and exposed residents to increasing risk.

Through the development of this Community Wildfire Protection Plan (CWPP) and extensive outreach with residents, community councils, and partner agencies, it has become abundantly clear that establishing and maintaining a permanently funded Wildfire Division within AFD is an overwhelming community and operational need. Since the program's reinstatement in late 2024, stakeholders have consistently expressed concern about the municipality's vulnerability and their support of the creation of a stable, locally funded wildfire management structure.

It is therefore recommended that the Municipality of Anchorage fully fund a robust and dedicated Wildfire Division. Permanent municipal investment will provide stability, continuity, and accountability, ensuring wildfire preparedness no longer rises and falls with the availability of outside grants. Baseline funding for personnel and operations will allow AFD to maintain trained staff, sustain mitigation programs, and coordinate long-term projects, while still leveraging state and federal grants for new hazard reduction projects.

A fully funded Wildfire Division represents a necessary shift from reactive, grant-dependent cycles to a proactive, professional program that protects lives, property, and the landscape for generations to come.

**Wildfire Division Organizational Overview**

The Wildfire Division operates under the leadership of the Division Chief, who provides strategic direction, oversees operations, and coordinates with municipal, state, and federal partners. Supporting this role, the Program Manager manages grants, funding compliance, outreach, and program development, while the Senior Wildfire Specialist leads training, qualifications, and interagency coordination with the Alaska Division of Forestry & Fire Protection. Two Wildfire Specialists deliver operational, technical, and UAS program support, assist with fuels mitigation and GIS tracking, and serve as NWCG instructors during the off-season. Each summer, four Seasonal Detailers from AFD augment the division, bolstering brush staffing, outreach, and field experience while advancing department-wide wildfire qualifications and readiness.

**Rationale for Municipal Funding**

1. **Eliminates Program Volatility:**
   The prior grant-only model left Anchorage without a functioning wildfire division for more than a decade. Core funding will end the cycle of hiring, disbanding, and rebuilding staff capacity.
2. **Improves Public Safety and Readiness:**
   Permanent positions ensure consistent planning, suppression readiness, and

community engagement, vital as Anchorage faces earlier fire seasons (the 2025 season began March 15, the earliest on record).

3. **Enhances Leverage of Grants:**
   With baseline staff funded locally, AFD can use state and federal grants for project expansion rather than survival. This positions the Municipality to match funds and manage larger, multi-year mitigation initiatives.
4. **Builds Institutional Knowledge:**
   Year-round staff continuity preserves technical expertise, relationships, and community trust that are otherwise lost between grant cycles.
5. **Aligns with Federal and State Standards:**
   Permanent staffing ensures compliance with FEMA, NWCG, and AWFCG standards, strengthening AFD's interoperability and eligibility for reimbursement and federal assistance.

**Summary – Wildland Fire Management Program**

This investment establishes a permanent Wildland Fire Management Program to protect Anchorage's residents and resources from escalating wildfire threats. Funding will sustain a core team of wildfire professionals responsible for mitigation, training, fuels management, suppression readiness, and community engagement.

By providing consistent municipal support and leveraging external grants strategically, this program will stabilize Anchorage's wildfire capacity, reduce risk to life and property, and eliminate the operational uncertainty that has hindered progress for more than a decade. The result will be a safer, more resilient, and fire-adapted Anchorage community.

For a list of detailed mitigation recommendations, see *Appendix D: Mitigation Recommendations.*

# Grant Resources

One of the biggest obstacles in implementing CWPP recommendations and wildfire mitigation projects is securing funding. An adopted CWPP opens the door to many funding opportunities that support the actions outlined in the plan. Federal, state, and municipal programs can often be leveraged to initiate treatment and outreach projects. The list below is not exhaustive but highlights the most commonly available funding and support sources.

## Federal Emergency Management Agency (FEMA) Grants

**Assistance to Firefighters Grant (AFG) Program**

The AFG program is FEMA's primary funding mechanism supporting fire departments and emergency response organizations nationwide. The program's portfolio includes three distinct but related grants – AFG, SAFER, and FP&S – each designed to strengthen local fire service capability, improve firefighter safety, and enhance community resilience.

**Assistance to Firefighters Grant (AFG)**
Purpose: to improve firefighting operations and safety through the funding of essential equipment, protective gear, emergency vehicles, training, and wellness programs.
https://www.fema.gov/grants/preparedness/firefighters

**SAFER: Staffing for Adequate Fire and Emergency Response (SAFER)**

Purpose: to provide funding to help fire departments and volunteer firefighter organizations increase the number of trained, front-line firefighters needed to meet staffing, response and operational standards established by NFPA and OSHA.
https://www.fema.gov/staffing-adequate-fire-emergency-response-grants

**Fire Prevention and Safety Grants (FP&S)**

Purpose: to fund projects that enhance the safety of the public and firefighters from fire and related hazards through prevention, risk reduction, research, and public education programs.
https://www.fema.gov/fire-prevention-safety-grants

**Hazard Mitigation Grant Program (HMGP)**

Purpose: to provide funding to implement long-term hazard mitigation measures after a Presidential disaster declaration. The State of Alaska is the primary applicant; local governments may apply as sub-applicants. Projects must align with an approved hazard mitigation plan and support reducing future disaster losses.
https://www.fema.gov/grants/mitigation/hazard-mitigation

## Other Federal Grants

Purpose: help at-risk and low-income communities, local governments, Tribes, non-profits, State forestry agencies, and Alaska Native Corporations plan and take action to reduce wildfire risk.

https://forestry.alaska.gov/fire/cwdgrants

## AK-DOF Grants

The Alaska Department of Forestry & Fire Protection helps community groups, nonprofits, landowners and others secure grants and assistance for projects that promote healthy forests and wildfire mitigation in Alaska.

https://forestry.alaska.gov/grants

**Western Wildland Urban Interface**

Purpose: provides funding to reduce wildfire risk through hazard fuel reduction, information education, planning, and community action. Applications are submitted through the AK-DOF, which manages and forwards proposals to the Council of Western State Foresters.

https://forestry.alaska.gov/fire/wuigrants

**Community Wildfire Defense Grants**

**Forest Stewardship**

Purpose: assist Alaskan landowners with 7 or more forested acres, as well as Alaska Native Corporations, in managing their land. Regional stewardship foresters develop customized Forest Stewardship Plans based on landowner goals, which include on-site visits and expert guidance.

https://forestry.alaska.gov/stewardship/index

## Other Resources

**Firewise Communities**

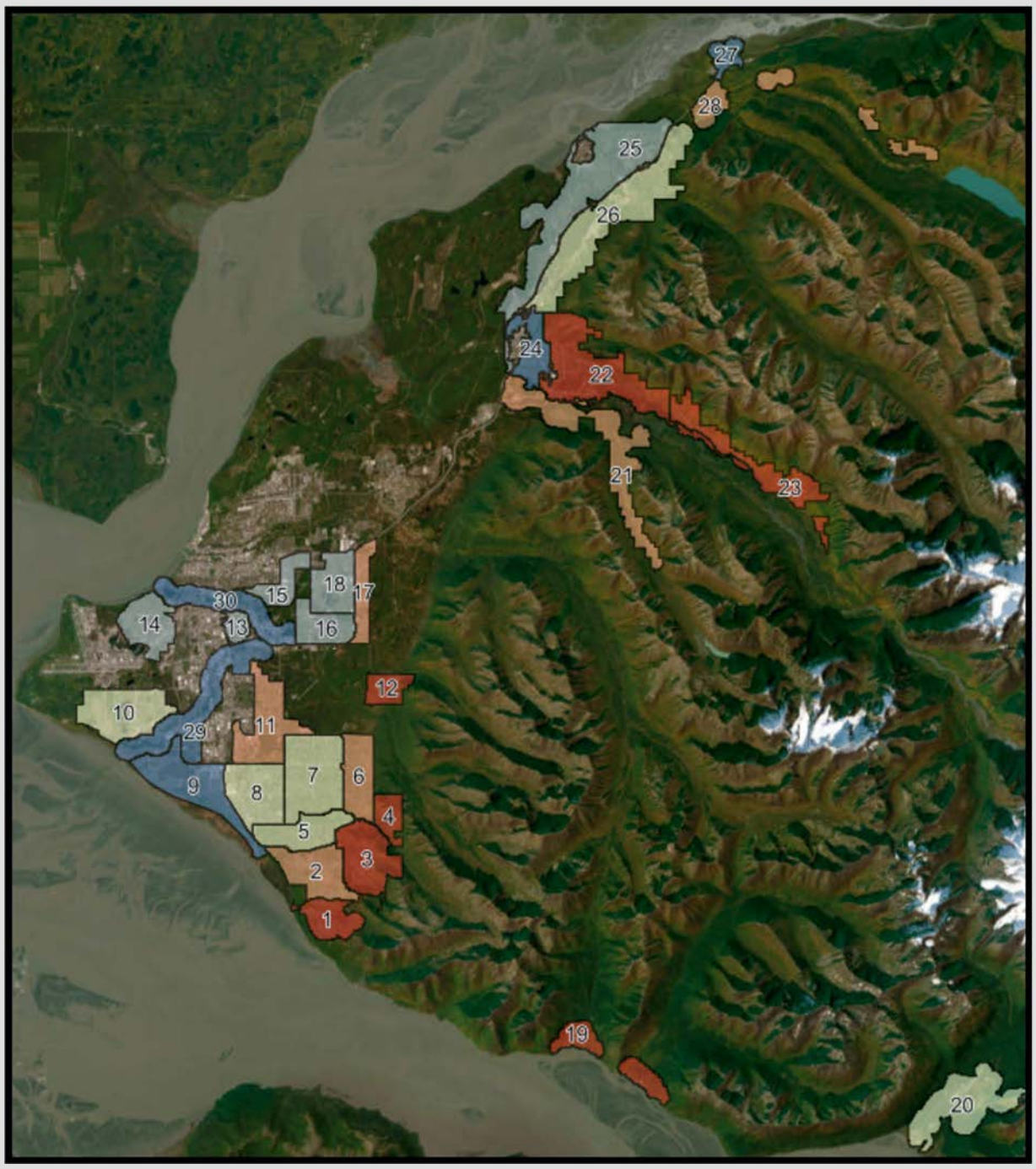
Purpose: a multi-agency organization designed to increase education of homeowners, community leaders, developers, and others regarding the Wildland-Urban Interface and the actions they can take to reduce fire risk to protect lives, property, and ecosystems.
http://www.firewise.org

**National Volunteer Fire Council**

Purpose: to support volunteer fire protection districts. Includes both federal and non-federal funding options and grant writing help.
http://www.nvfc.org/

Community WIldfire Protection Plan

# Municipality of Anchorage




## Appendix A: Suppression Planning Units

# Appendix A – SPU Ignitability Analysis

## Suppression Planning Units

# Appendix A – SPU Ignitability Analysis

## SUPPRESSION PLANNING UNITS

### Introduction

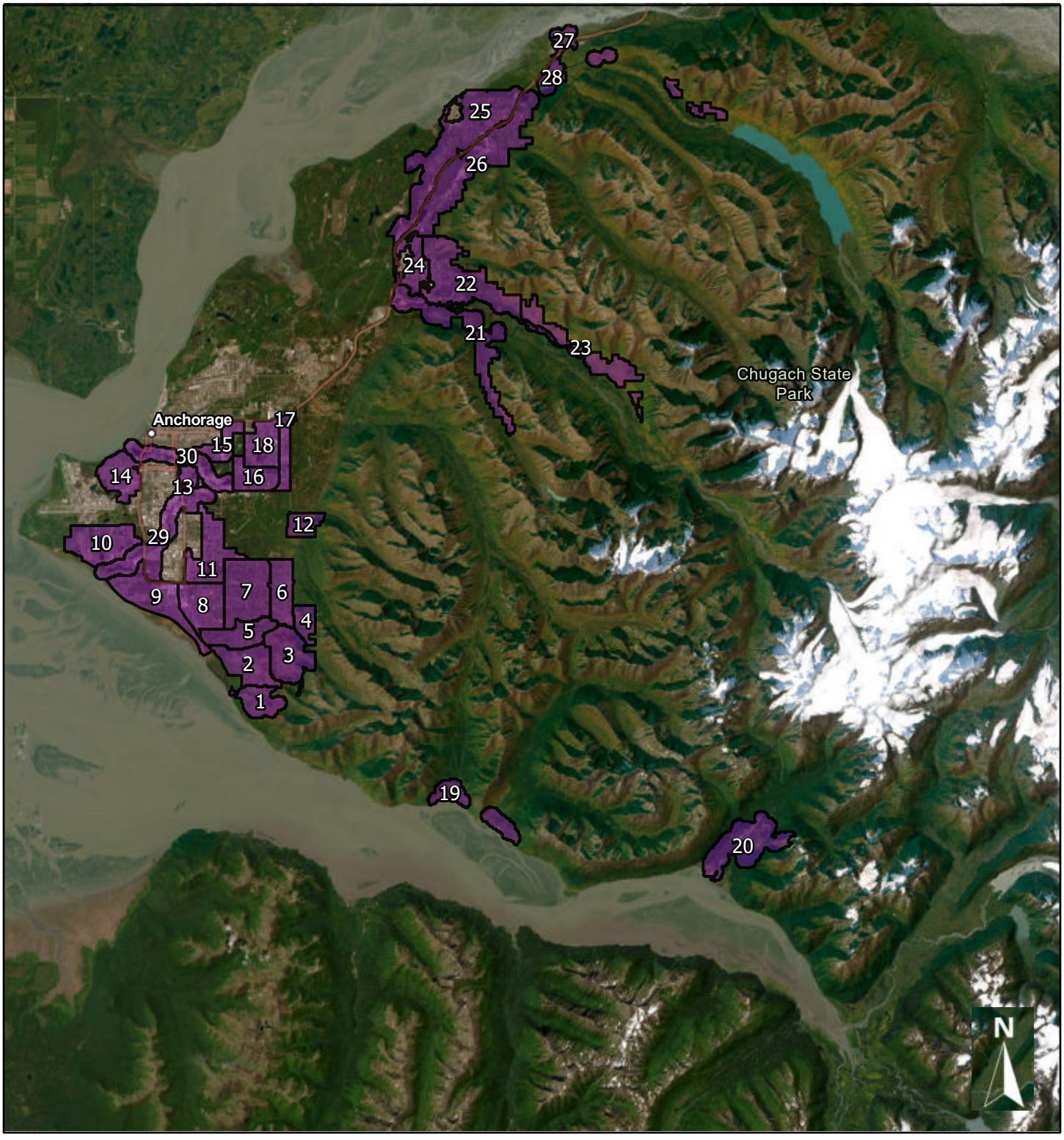
The municipality has been divided into thirty Suppression Planning Units (SPUs). The purpose of establishing SPUs is to group the most heavily populated residential areas of the Wildland-Urban Interface (WUI) into hazard categories. These hazard categories provide a data-driven method that support the multiple variables that affect prioritization of mitigation recommendations. Not every property within the WUI falls within the boundaries of the SPUs. This does not diminish the importance of those properties to the Municipality or the value of continued wildfire mitigation efforts in those areas.

SPU Hazard Rating (SPUHR) scores have been used to sort the SPUs into five adjective rating categories: Low, Moderate, High, Very High, and Extreme. The SPU boundaries and ratings are shown in Figure 2Figure 1 and Table 1.


Dr. Jen Schmidt of the UAA Institute of Social and Economic Research collaborated closely with the Anchorage Fire Department (AFD) Wildfire Division, AK-DOF, Bintel, and multiple interagency partners to co-develop the rating methodology explained in Appendix C. The Anchorage Fire Department Wildfire Division reviewed and approved the hazard ratings found within this document and should be consulted if there are questions. For a more detailed discussion of the methodology behind these ratings, see Appendix C - Methodology.

The following SPU descriptions provide an overview of the general characteristics of each area. They focus on factors influencing structural ignitability and HIZ hazards (both natural and human caused) based on field observations, fire behavior modeling, and GIS-based zonal analysis. These summaries are not intended to describe every individual property or street but rather to reflect the average or typical conditions within each SPU.

# Anchorage Suppression Planning Units




1 Potter Heights
2 South Rabbit Creek
3 Bear Valley
4 Glen Alps
5 DeArmoun
6 Upper Hillside
7 Birch
8 Lower Hillside
9 Oceanview
10 Kincaid
11 Abbott/Elmore
12 Stuckagain
13 Lake Otis
14 Turnagain
15 Merrill
16 Baxter
17 East Muldoon
18 West Muldoon
19 Rainbow
20 Girdwood
21 Hiland
22 Lower Eagle River
23 Upper Eagle River
24 Eagle River Loop
25 West Chugiak
26 East Chugiak
27 Eklutna Village
28 Eklutna Lake
29 Campbell Creek
30 Chester Creek

# Appendix A – SPU Ignitability Analysis

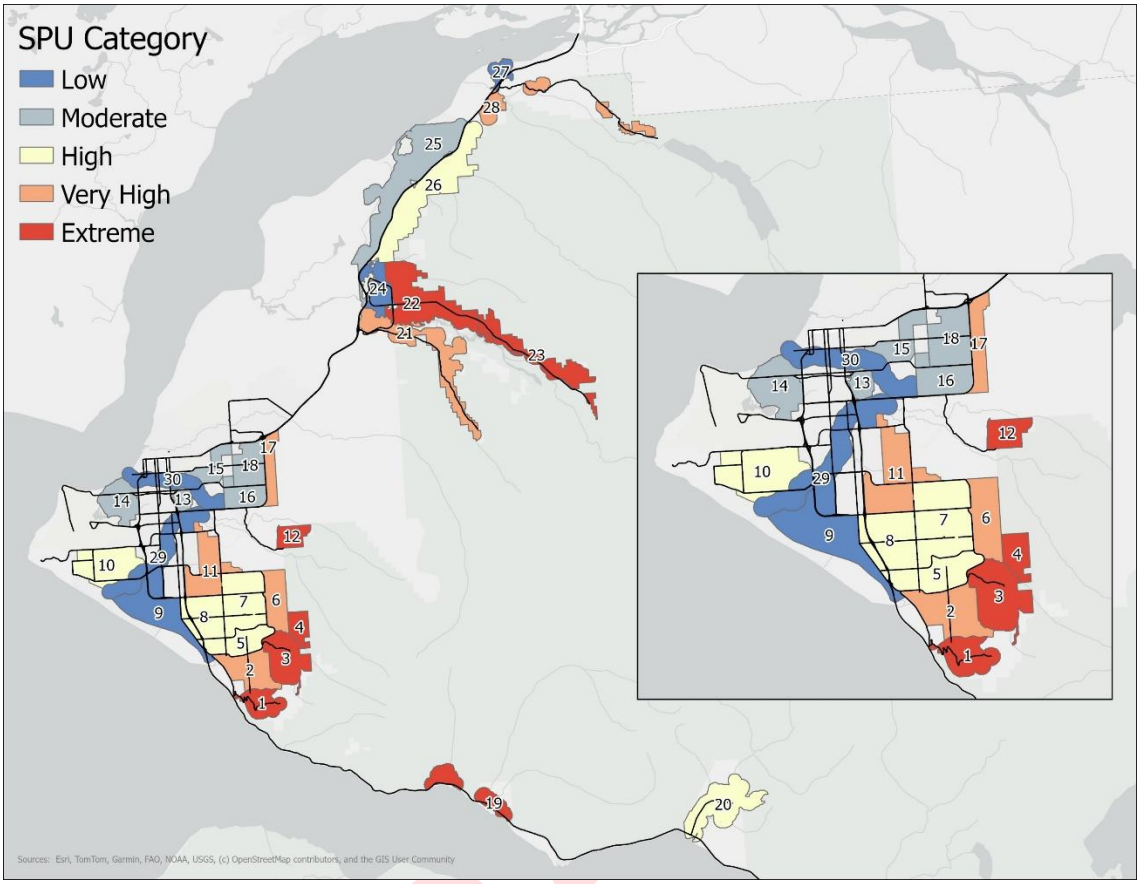
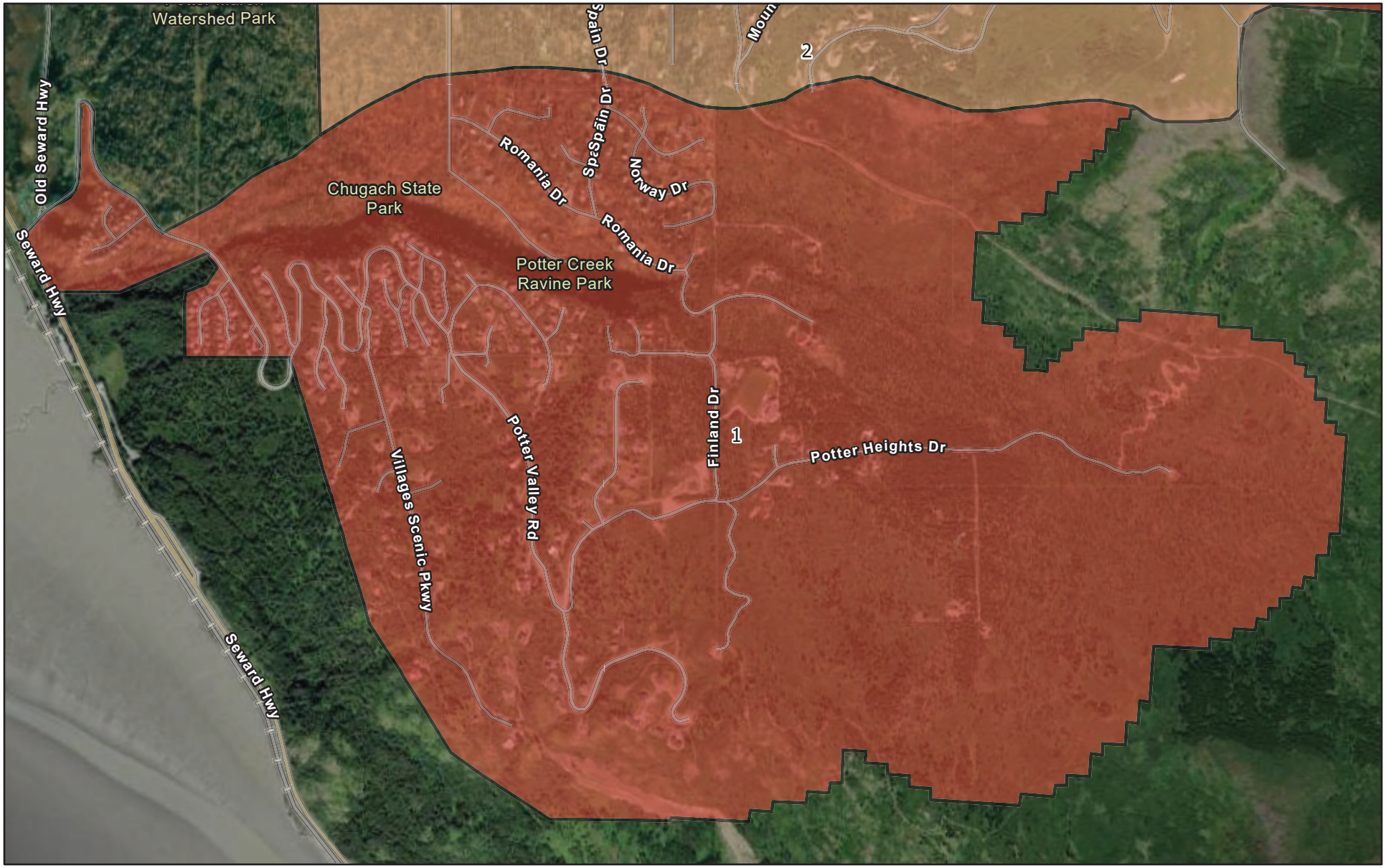



**Figure 2 – Municipality of Anchorage SPU Hazard Ratings Map**

**Table 1 – SPU Hazard Ratings**

| SPU No. | Name | Rating | SPU No. | Name | Rating |
|---|---|---|---|---|---|
| 1 | Potter Heights | Extreme | 16 | Baxter | Moderate |
| 2 | South Rabbit Creek | Very High | 17 | East Muldoon | Very High |
| 3 | Bear Valley | Extreme | 18 | West Muldoon | Moderate |
| 4 | Glen Alps | Extreme | 19 | Rainbow | Extreme |
| 5 | DeArmoun | High | 20 | Girdwood | High |
| 6 | Upper Hillside | Very High | 21 | Hiland | Very High |
| 7 | Birch | High | 22 | Lower Eagle River | Extreme |
| 8 | Lower Hillside | High | 23 | Upper Eagle River | Extreme |
| 9 | Oceanview | Low | 24 | Eagle River Loop | Low |
| 10 | Kincaid | High | 25 | West Chugiak | Moderate |
| 11 | Abbott/Elmore | Very High | 26 | East Chugiak | High |
| 12 | Stuckagain | Extreme | 27 | Eklutna Village | Low |
| 13 | Lake Otis | Moderate | 28 | Eklutna Lake | Very High |
| 14 | Turnagain | Moderate | 29 | Campbell Creek | Low |
| 15 | Merrill | Moderate | 30 | Chester Creek | Low |

# SPU 1: Potter Heights



# Appendix A – SPU Ignitability Analysis

## SPU 1: Potter Heights


Potter Heights is the southernmost SPU in the Anchorage Bowl treatment region. It lies mid-slope along the northwest face of McHugh Peak with Potter Creek bisecting residential areas. Topography becomes more complex near the steep Potter Ravine, which otherwise rises through sub-Alpine to Alpine slopes that are greater than 30 degrees in some areas. Local weather patterns are influenced by the Knik and Turnagain Arms which extend northeast and southeast from Cook Inlet, and by several deep mountain drainages that climb roughly 2,500 feet from the water's edge, producing orographic effects.

Primary access to the community is from the Seward Highway via Potter Valley Road. Housing consists of single-family residences built from the 1990s to the present. Building materials vary, but most homes are wood frame with decks, open eaves, and other flammable projections. Most roof materials are ignition resistant; however, some homes have shake roofing. Heating is provided mostly by electricity, natural gas, and wood stoves. Structural separation ranges from 10 feet to greater than 50 feet.

Some properties maintain defensible space, but compliance is limited in some cases due to the presence of hazardous fuels on adjacent parcels under separate ownership. Nonetheless, these individual efforts remain worthwhile, as they reduce structure ignition potential and contribute to overall neighborhood resilience.

Vegetative fuels are composed of dense boreal forest at lower elevations, transitioning to continuous, high-density woody shrub and grass in the upper elevations. Primary access on Potter Valley Road is encroached by vegetation in many areas with less than five feet of clearance from the roadway.

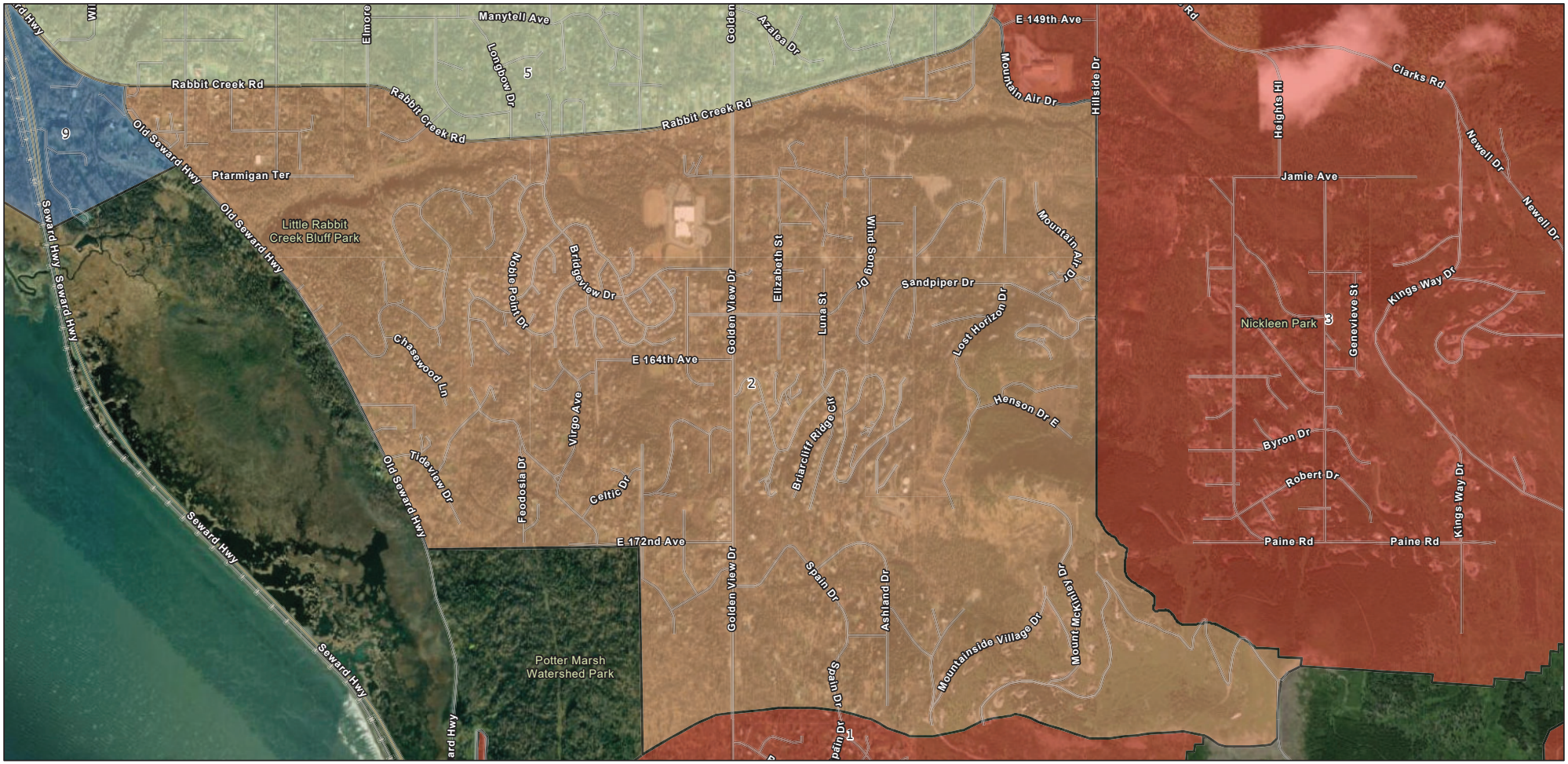
Residences are situated on bluffs above major roadways, within steep creek drainages, and on steep slopes where fuels transition to shrubs and grass. Streets in the lower portion of the SPU are paved, adequately sized, and well-marked; however, some roads are unpaved outside of the Anchorage Fire Service Area. Evacuation may be challenging, as the SPU has only one primary egress route. A secondary route exists, but is mid-slope above a steep ravine, is narrow, and prone to congestion. Several sections of roadway include sharp, narrow turns, posing considerable challenges for fire apparatus access and operations.

Road markers along Potter Valley Road are adequate, but side street and address markers are often overgrown, non-reflective, difficult to see, or missing. Electric utilities are distributed through elevated lines on wooden power poles adjacent to dense fuels, increasing potential ignition risk.

# Appendix A – SPU Ignitability Analysis

In areas without hydrants, water for firefighting will be delivered by water tenders, while another concern in this area is the potential ignition source posed by the train tracks, they are buffered by the Seward Highway.

# SPU 2: South Rabbit Creek



# Appendix A – SPU Ignitability Analysis

## SPU 2: South Rabbit Creek


South Rabbit Creek sits at the base of the northwest slope of McHugh Peak and extends from marshy lowlands to the alpine. Little Rabbit Creek runs along the north boundary of the unit, while several other drainages create fuel-laden greenbelts that connect numerous neighborhoods. Local weather patterns are influenced by the Knik and Turnagain Arms. Multiple deep mountain drainages that rise more than 2,500 feet from the water's edge produce local orographic effects.

The South Rabbit Creek SPU is accessed via the Seward Highway and contains several well-marked routes that support emergency access in different directions; however, many neighborhoods have only a single egress route. The SPU consists of single-family housing, mostly built in the early 2000's with some newer construction. Homes are primarily of wood-frame construction with decks and other flammable projections. Roof materials are mostly ignition resistant. Heating is provided by electricity, natural gas, and wood stoves. Structural separation distances range from 20 feet to more than 50 feet. While some properties maintain defensible space, compliance is limited where hazardous fuels are present on adjacent parcels under separate ownership. Nonetheless, these individual efforts remain worthwhile, as they reduce structure ignition potential and contribute to overall neighborhood resilience.

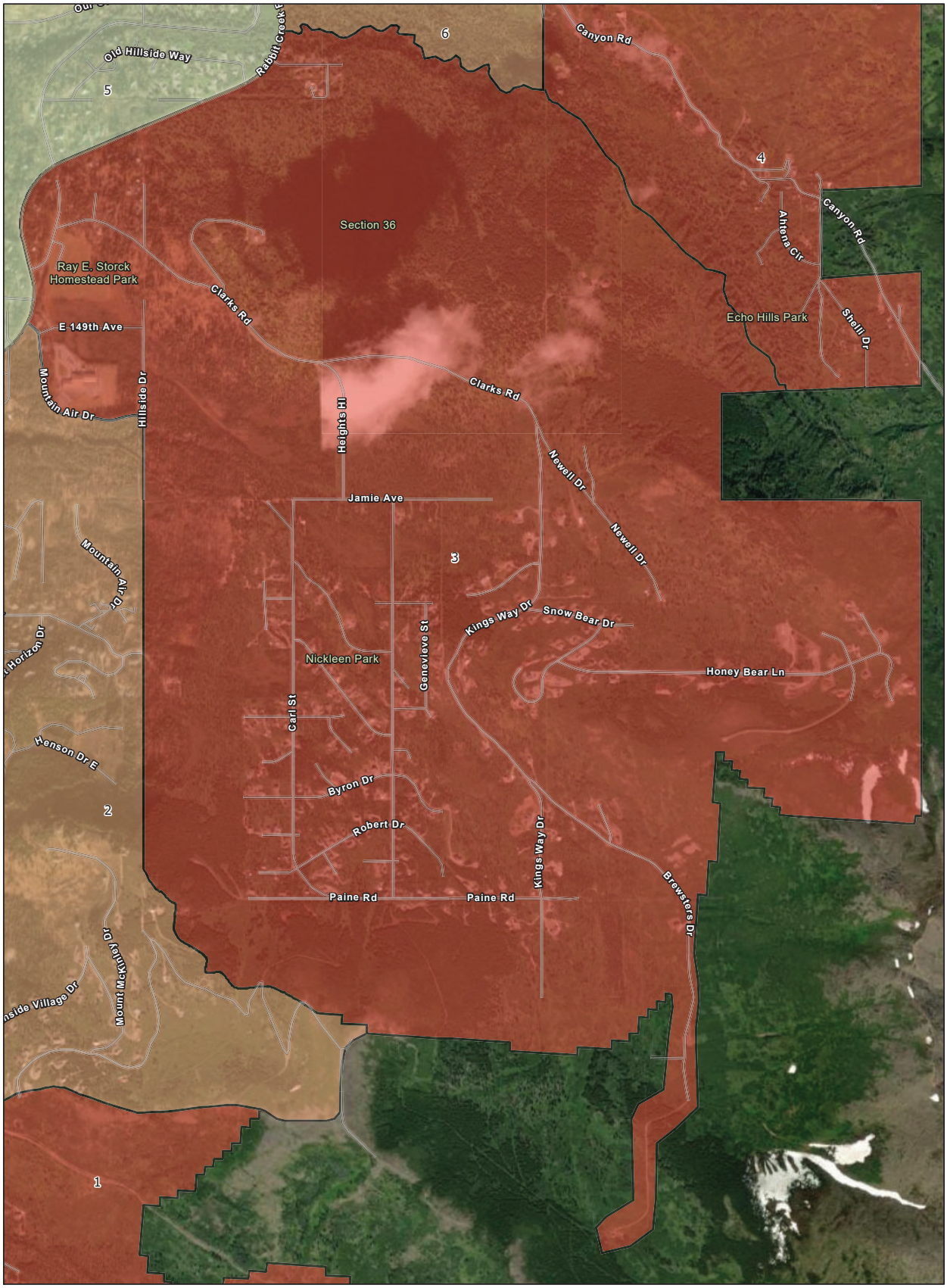
Fuels consist of dense boreal forest at lower elevations, transitioning to continuous high-density shrub and grass fuels upslope. Vegetation encroaches along Rabbit Creek Road, with less than five feet of clearance in many sections, and most residential streets are overgrown.

Homes are situated in the foothills at the base of steep mountain peaks, within steep creek drainages, and on steep slopes as fuels transition to decadent woody shrubs and grasses. Streets in the lower part of the SPU are paved, adequately sized, and well-marked. Some roads transition to unpaved surfaces, and some residences are outside the Anchorage Fire Service Area. Away from main roadways, streets are well defined but may offer limited egress due to winding roads that end in cul-de-sacs or dead ends.

Electric utilities are distributed through elevated lines on wooden power poles adjacent to dense fuels.

The hydrant system serves two neighborhoods and is maintained by Anchorage Water & Wastewater Utility (AWWU). In areas where hydrants are not available, water for fire suppression will be delivered by water tenders.

# SPU 3: Bear Valley



# Appendix A – SPU Ignitability Analysis

## SPU 3: Bear Valley


The Bear Valley SPU occupies a mountain valley on the northwest slope of McHugh Peak, characterized by steep and complex topography where multiple ridges and drainages converge. The headwaters of Little Rabbit Creek run through the middle of the SPU, and dense pockets of boreal forest on north-facing slopes link fuels from lower elevations up to treeline. A few properties are located near the flats where water and muskeg accumulate; however, the majority are in the thick brush, mid-slope on the sidewalls of the valley.

Primary road access to this SPU is via Rabbit Creek Road. While it is adequately marked, it is one way in and out. Housing consists of single-family residences, mostly 1980s–1990s era construction with some newer construction. A large portion of this SPU remains platted for future residential construction, though water and wastewater utilities have not yet extended to most of those parcels. Construction includes a full range of types, with concentrations of wooden homes in various states of maintenance. Heating is provided mostly by electricity, natural gas, and wood stoves.

Spacing is generally greater than 50 feet between residences, though outbuildings and sheds are often situated in between. Only a few properties maintain defensible space, and compliance is limited in some cases due to the presence of hazardous fuels on adjacent parcels under separate ownership. Nonetheless, these individual efforts remain worthwhile, as they reduce structure ignition potential and contribute to overall neighborhood resilience. Yard debris, to include vehicles and equipment in various states of disrepair, were noted in some yards during the field study.

Hazard fuels consist of dense boreal forest at lower elevations transitioning to continuous high-density shrub and grass fuels upslope. Primary access roads are encroached by vegetation in many areas, with less than five feet of clearance. Residential streets are often overgrown with vegetation, and where present, provide minimal clearance.

Homes are situated on steep slopes and in saddles of high-elevation mountain valleys as fuels transition from marshy muskeg to decadent woody shrubs and grasses. Primary access to Bear Valley is paved and well-marked, while residential streets are mostly unpaved, narrow, and with variable signage.

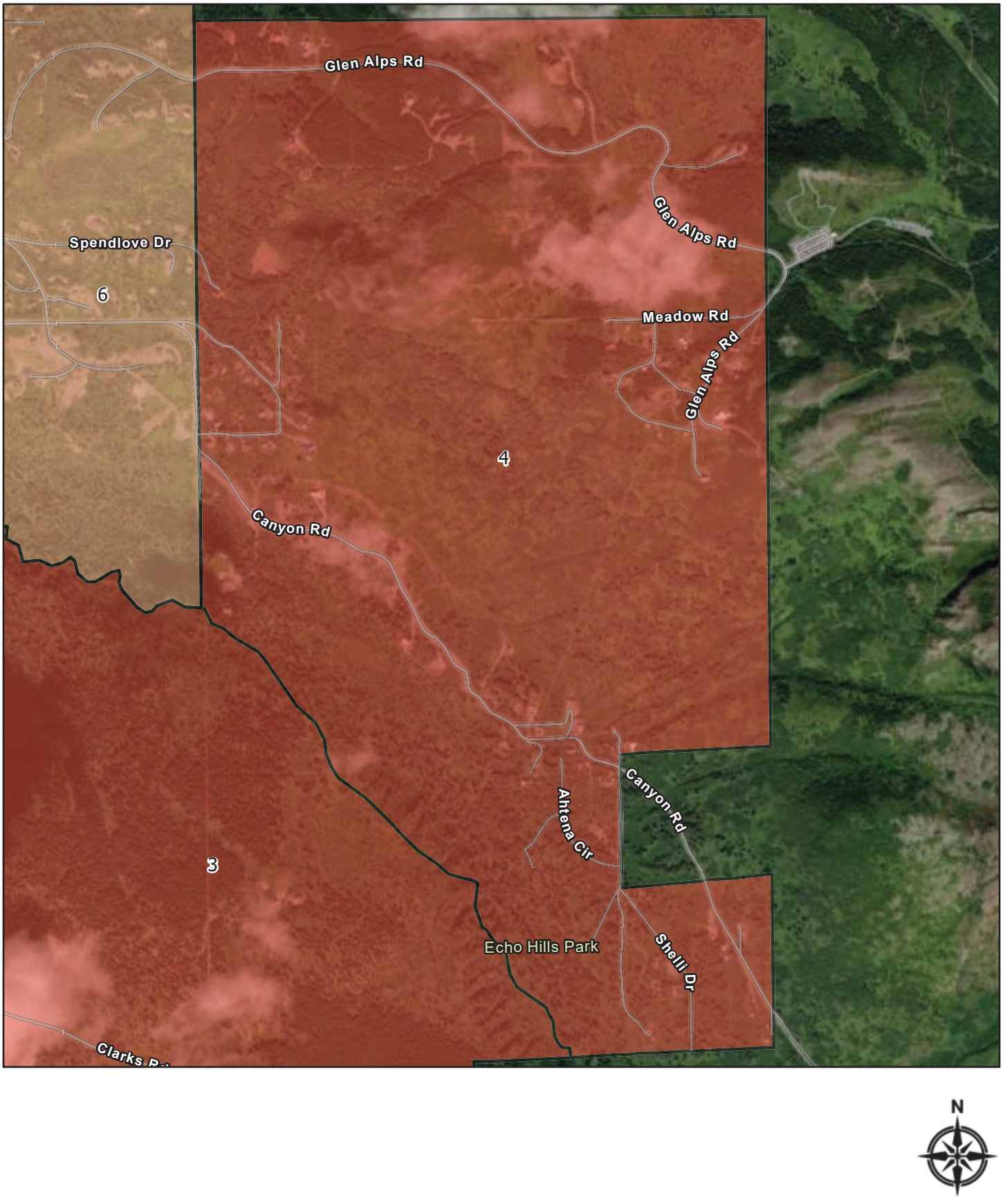
Clarks Road serves as the only route available for access and egress. Critical infrastructure includes AFD Station 10 and Bear Valley Elementary School. Both are surrounded by fuels and may be affected by traffic congestion during an evacuation.

Electric utilities are distributed through elevated lines on wooden power poles adjacent to dense fuels.

# Appendix A – SPU Ignitability Analysis

No fire hydrants are available in Bear Valley. In areas without hydrants, water for firefighting will be delivered by water tenders.

# SPU 4: Glen Alps



# Appendix A – SPU Ignitability Analysis

## SPU 4: Glen Alps


Homes in the Glen Alps SPU are found mid-slope near the valley bottom in stands of deciduous hardwoods with continuous dense grass and woody shrub understory. Residences along the ridgeline face a more northerly aspect and are situated in dense spruce stands. The SPU is entirely outside the Anchorage Fire Service Area, and its most vulnerable homes are surrounded by dense stringers of spruce.

Glen Alps is composed of two main roads that contain clusters of homes. Canyon Road is partially paved and built mid-slope in the valley bottom, while Glen Alps Road is paved and follows the ridgeline at the confluence of multiple large mountain valleys. Both are accessed through the Upper Hillside SPU via Hillside Road. Residential side streets are mostly unpaved and dead end with inadequate turnarounds for apparatus. Road markers along primary access routes are generally adequate; however, address markers are often overgrown, non-reflective, poorly placed, or missing altogether.

Residences here are well built, well maintained, relatively new, with general spacing greater than 50 feet. Most are wood-frame construction with wood siding and ignition resistant roofing. Decks and other flammable projections are common. Heating is provided mostly by electricity, natural gas, and wood stoves.

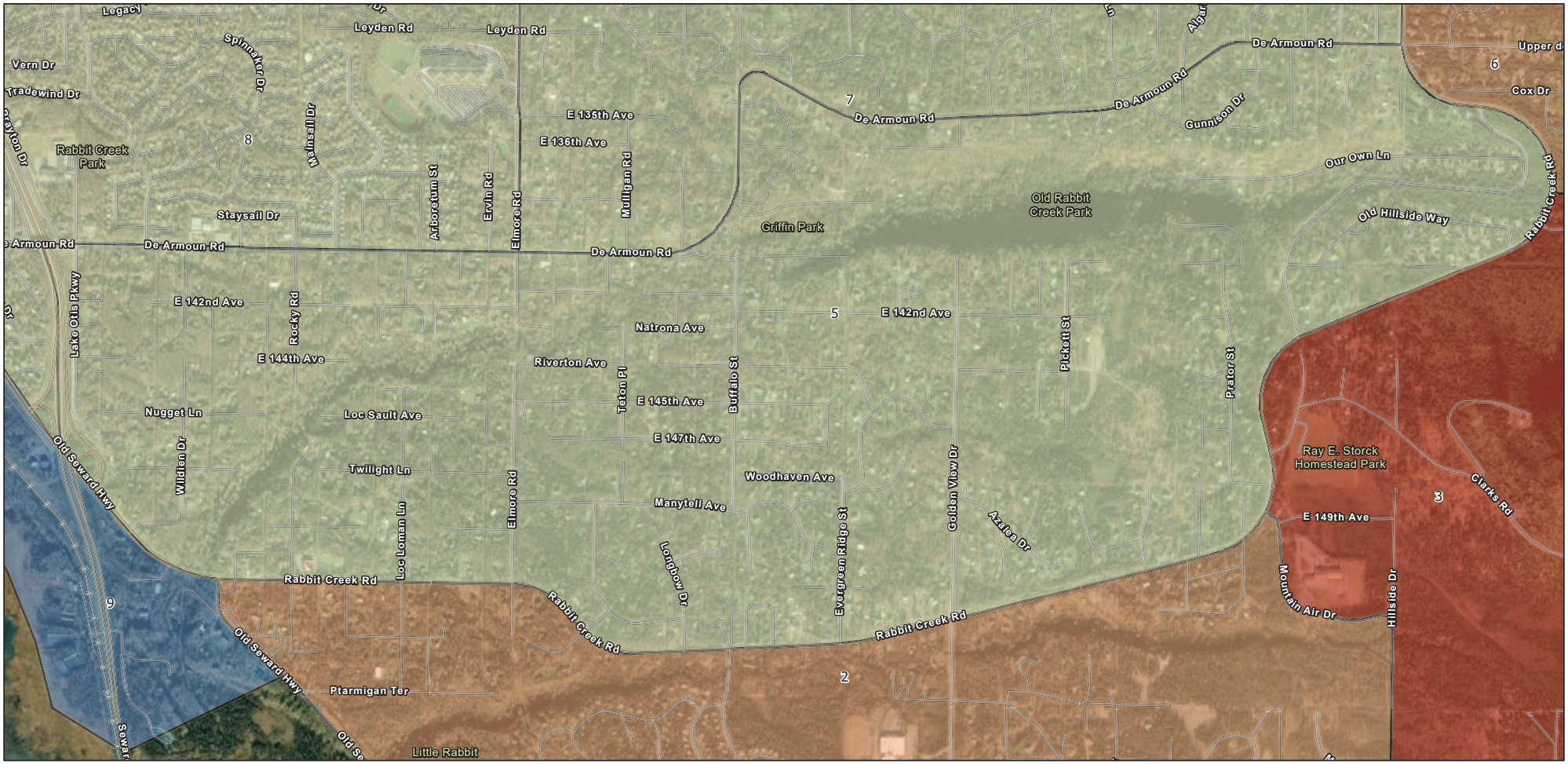
Many properties maintain defensible space, but compliance is limited in some cases due to the presence of hazardous fuels on adjacent parcels under separate ownership. Nonetheless, these individual efforts remain worthwhile, as they reduce structure ignition potential and contribute to overall neighborhood resilience. Yard debris, to include vehicles and equipment in various states of disrepair, were noted in some yards during the field study.

Vegetative fuels include medium-density deciduous forest with continuous woody shrubs in the understory along valley bottoms, transitioning to dense boreal forest on northerly ridgeline slopes. Primary access roads are encroached by vegetation in many areas with less than five feet of clearance from the roadway.

Electric utilities are distributed through elevated lines on wooden power poles adjacent to dense fuels.

In areas without hydrants, water for firefighting will be delivered by water tenders.

# SPU 5: DeArmoun



# Appendix A – SPU Ignitability Analysis

## SPU 5: DeArmoun


DeArmoun features homes spaced greater than 50 feet apart on lots under one acre. Land use is mixed, with residential properties interspersed with schools, businesses, and small industrial sites in varying states of maintenance. The SPU extends from its western boundary of Old Seward Highway and Seward Highway eastward to the foothills in a combination of mixed hardwood canopy and boreal forest. Topography is generally flat to rolling, with steeper banks around creek drainages. Access to and through the area is generally good, though isolated chokepoints around residential intersections exist.

Housing consists of 1990s–early 2000s era construction. Structures are finished with metal, wood, or vinyl siding, and ignition resistant roofing. Many properties have outbuildings or supply caches that are vulnerable to fire, along with decks, stairs, and other flammable projections. Heating is provided by electricity, natural gas, and wood stoves.

While some properties maintain defensible space, compliance is limited where hazardous fuels are present on adjacent parcels under separate ownership. Nonetheless, these individual efforts remain worthwhile, as they reduce structure ignition potential and contribute to overall neighborhood resilience.

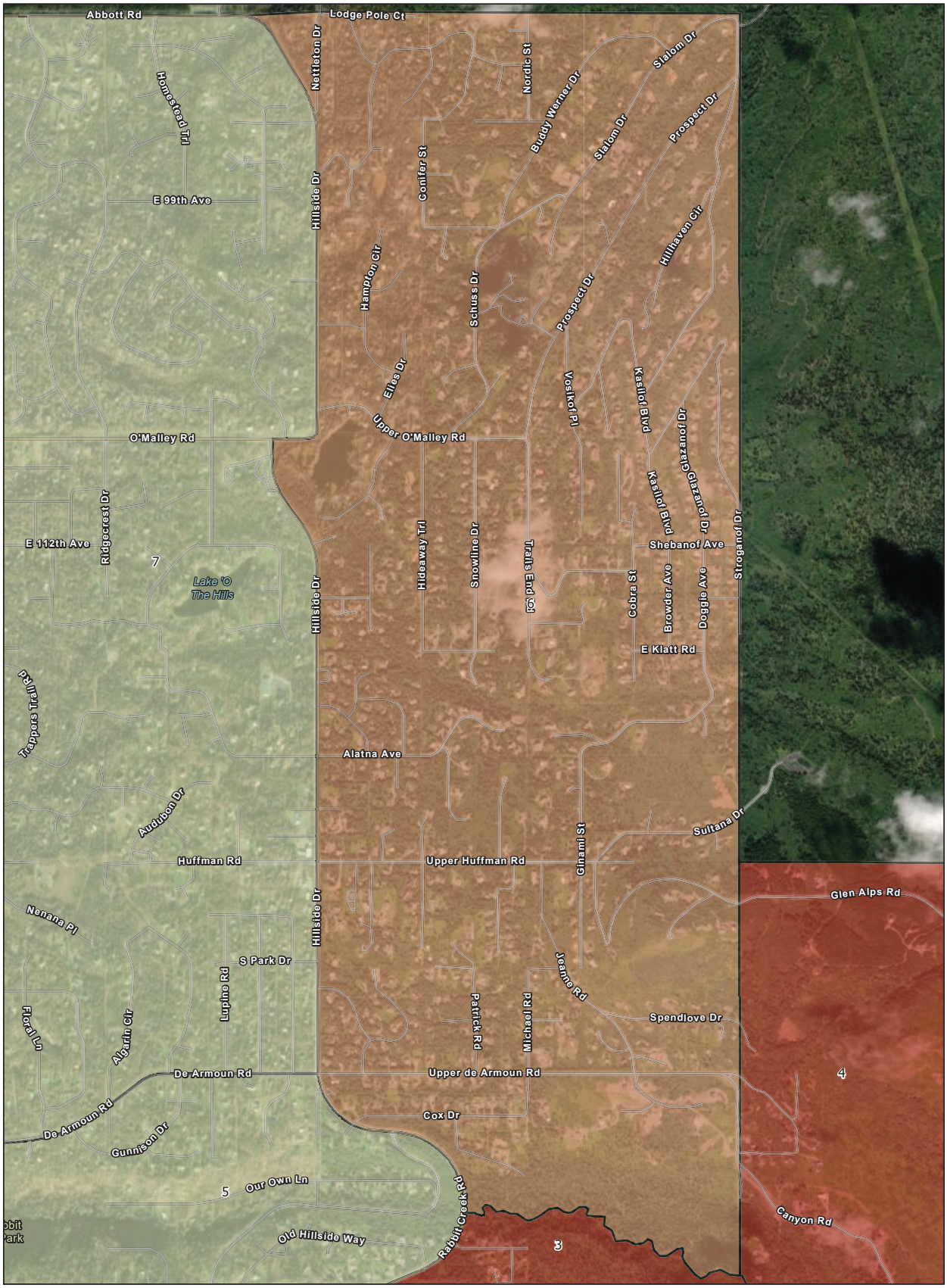
Woody-shrub understory is largely cleared along roadways and appears managed in most treated patches. Dead spruce trees have largely been removed from most main roadways but persist in small, isolated clusters. Fuels are used as sight and sound barriers between neighboring properties, which could potentially provide pathways for wildfire and link several different neighborhoods. Some homes are situated in creek drainages surrounded by dense fuels.

Primary access roads are paved while residential streets are largely unpaved. Many streets dead-end in heavy vegetation and provide limited or no turnarounds for apparatus. Multiple evacuation routes are available and travel in different directions exist in this community.

Road markers are adequately placed and clear of brush in most areas, however no evacuation signage exists on a road system that may be confusing to visitors. Electric utilities are distributed through elevated lines on wooden power poles.

The few hydrants that exist throughout the SPU are operated by AWWU. In areas without hydrants, water for firefighting will be delivered by water tenders.

# SPU 6: Upper Hillside



# Appendix A – SPU Ignitability Analysis

## SPU 6: Upper Hillside


The Upper Hillside SPU extends from Rabbit Creek drainage to the south and Hilltop Ski Area to the north. Homes are moderately sized on midsized lots, interspersed with upscale rental properties and small horse farms. The SPU is bordered by wildland fuels on three sides and spreads across the base of the foothills with varying topographical complexity.

Access to and through the SPU is tedious and runs mid-slope through dense fuels that encroach roadways. The community includes a mix of 1990s–early 2000s era construction. The predominant construction type is metal, wood, or vinyl siding with mostly ignition resistant roof types. Many properties have outbuildings or supply caches that are vulnerable to fire. Many also feature flammable decks, stairs, and other projections.

Spacing is generally greater than 50 feet between residences, with outbuildings and sheds in between. Heating is provided by electricity, natural gas, and wood stoves.

While a variable number of properties maintain defensible space, compliance is limited where hazardous fuels are present on adjacent parcels under separate ownership. Nonetheless, these individual efforts remain worthwhile, as they reduce structure ignition potential and contribute to overall neighborhood resilience.

Concentrations of spruce stringers are present in the SPU with otherwise moderate to heavy loads of woody-shrub understory. Bands of hardwoods are maintained along roadways; however dense patches of black spruce are present.

Homes are situated mid-slope among continuous fuels. Primary access roads stemming from Hillside Road are paved, while residential streets and secondary roads are unpaved. Many streets dead-end in heavy vegetation, providing limited or no turnarounds for apparatus.

Evacuation routes from residential areas are limited, narrow, surrounded by dense fuels, and travel through other neighborhoods. Road markers can be difficult to see because of overgrown vegetation crowding roadways and intersections.

Electric utilities are distributed through elevated lines on wooden power poles. There are no fire hydrants in the SPU, so water for firefighting will be delivered by water tenders.

# SPU 7: Birch


Abbott Rd
Abbott Rd
Abbott Rd
Lodge
Carlson Rd
Jupiter Dr
Barry Ave
Homestead Tl
Nettleton Dr
11
E 97th Ave
E 99th Ave
E 99th Ave
Hillside Dr
Little Campbell Creek Greenbelt
Birch Rd
E 102nd Ave
Pacer Pl
Our Rd
E 104th Ave
Elmore Rd
Alaska Zoo
O'Malley Rd
O'Malley Rd
O'Malley Rd
6
Lipscomb St
Gamache Dr
Totem Rd
E 112th Ave
E 112th Ave
E 112th Ave
E 112th Ave
Ridgecrest Dr
Forsythe Park
Lake 'O The Hills
7
Elmore Rd
Hillside Dr
Jumar Ave
Wilderness Dr
Trappers Trail Rd
Trappers Trail Rd
Alat
Wilderness Rd
Lilac Dr
Audubon Dr
Loraine St
Huffman Rd
Huffman Rd
Huffman Rd
Birch Rd
Nenana Pl
Hillside Dr
Elmore Rd
Atherton Rd
Beverly Dr
Alpine Dr
S Park Dr
Shelburne Rd
Ridgewood Rd
Bainbridge Rd
Bristol Dr
Lupine Rd
Ridgeview Dr
Floral Ln
Algarin Cir
Kutcher Dr
Leyden Rd
De Armoun Rd
De Armoun Rd
Gunnison Dr
E 135th Ave
De Armoun Rd
E 136th Ave
5
Our Own Ln
Ervin Rd
Mulligan Rd
Old Rabbit Creek Park
Old Hillside Way
Elmore Rd
Griffin Park
De Armoun Rd
N

# Appendix A – SPU Ignitability Analysis

## SPU 7: Birch


The Birch SPU consists of a range of suburban and rural neighborhoods bordered by Elmore Road, DeArmoun Road, Hillside Drive, and Abbot Road. This SPU is mostly residential, with a few schools, and areas of industrial businesses and equestrian properties. Home and lot sizes range widely.

Access to and through the SPU is mostly paved and well-marked, however many narrow residential streets dead-end in heavy fuels and continuous spruce stands. The area consists of a mix of older and newer construction. The predominant construction types are metal, wood, or vinyl siding with mostly ignition resistant roofs. Most properties feature flammable decks, stairs, and other projections and some are situated within dense spruce stands. Spacing between homes ranges from 30 to greater than 50 feet. Outbuildings or supply caches are found on many properties.

Heating is provided by electricity, natural gas, and wood stoves.

While some properties maintain defensible space, compliance is limited where hazardous fuels are present on adjacent parcels under separate ownership. Nonetheless, these individual efforts remain worthwhile, as they reduce structure ignition potential and contribute to overall neighborhood resilience. Vegetation within the SPU consists of a large component of black spruce, along with hardwoods, and spruce stands in lowland marsh. These fuels along with topography and wind can pose significant wildfire hazard.

Primary access roads are paved, while some residential streets are unpaved. Many streets dead-end in heavy vegetation, providing limited or no turnarounds for apparatus.

Multiple evacuation routes exist in this SPU. Road markers can be difficult to see due to overgrown vegetation crowding roadways and intersections. Electric utilities are distributed through elevated lines on wooden power poles. Critical infrastructure includes the Anchorage Zoo and AFD Station 8.

There are less than fifteen fire hydrants serviced by AWWU within the boundaries of the SPU; water for firefighting will mostly be delivered by water tenders.

# SPU 8: Lower Hillside


N

# Appendix A – SPU Ignitability Analysis

## SPU 8: Lower Hillside

| Low | Moderate | **High** | Very High | Extreme |
|---|---|---|---|---|

The Lower Hillside SPU is bordered by Old Seward Highway, DeArmoun Road, Elmore Road, and O'Malley Road. West of Seward Highway, a combination of residential and industrial structures is present. The remainder of the SPU consists mostly of residences and a few schools. Homes are small to medium in size on small, uniformly-sized lots.

Access to and through the SPU is mostly paved and well-marked, however residential streets are narrow and tightly packed by cars. Some residential streets dead-end in cul-de-sacs and are illegally used as overflow parking by residents. Housing in the SPU was constructed mostly in the early 2000s to the present.

The predominant construction type is wood with vinyl siding and mostly ignition resistant roofs. Property spacing ranges from 20 to 40 feet, with outbuildings, sheds or supply caches on many properties. Most properties feature flammable decks, stairs, and other projections.

Heating is provided by electricity, natural gas, and wood stoves. While most properties maintain defensible space, compliance is limited where hazardous fuels are present on adjacent parcels under separate ownership. Nonetheless, these individual efforts remain worthwhile, as they reduce structure ignition potential and contribute to overall neighborhood resilience.

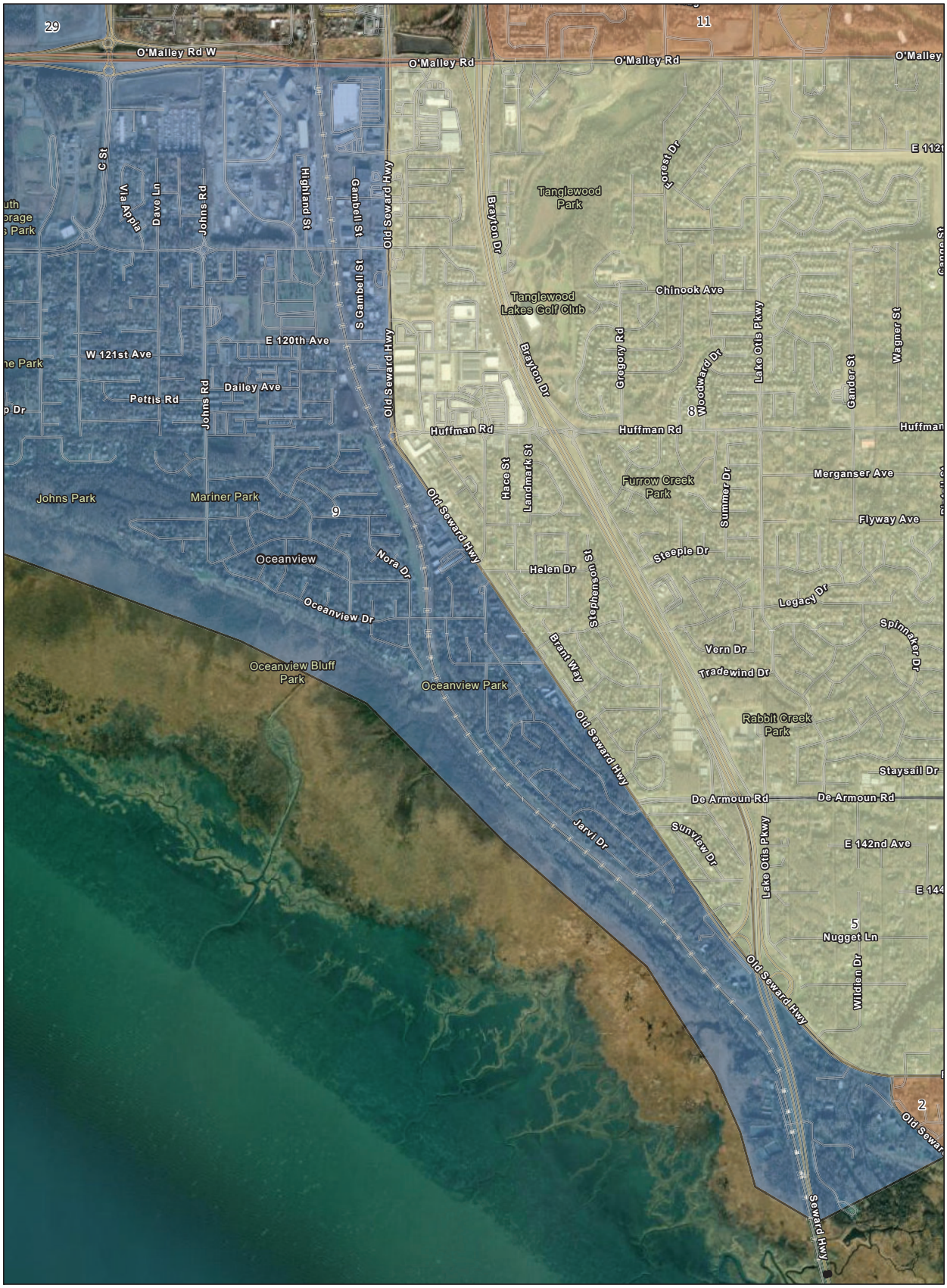
Fuels are a mix of hardwoods and spruce, with stringers and clusters of black spruce intermixed throughout. Homes are situated in continuous fuel beds with heavy components of spruce. Primary access roads and streets are mostly paved; however, roads are encroached by vegetation in many areas with less than five feet of clearance from the roadway. Residential streets are variably overgrown with vegetation.

Multiple evacuation routes traveling in different directions exist in this SPU. Large schools, churches, and sports complexes break up the landscape. Parcels are multiple acres in size and mostly cleared of hazardous brush but are otherwise surrounded by dense fuels.

Road markers are adequate. Electric utilities are distributed through elevated lines on wooden power poles. Hydrants are available for half of the SPU and are in the more recently developed and more dense neighborhoods. In areas without hydrants, water for firefighting will be delivered by water tenders.

# SPU 9: Oceanview Map 1 of 2

# SPU 9: Oceanview Map 2 of 2



# Appendix A – SPU Ignitability Analysis

## SPU 9: Oceanview


The Oceanview SPU is comprised of dense and well-established residential neighborhoods sandwiched between the Turnagain Arm shoreline and industrial corridor adjacent to Old Seward Highway.

Access to and through the SPU is generally paved and well-marked; however, some tertiary streets and alleys between rows of townhomes are narrow, frequently congested with parked vehicles, and form large, non-concentric loops. Many secondary streets terminate in dead-ends or cul-de-sacs adjacent to dense stands of black spruce, limiting egress and increasing potential exposure during a wildfire event. Housing in the SPU was mostly constructed in the early 2000s and newer in well-established neighborhoods.

The predominant construction type is wood with mostly ignition resistant roofs. Many properties feature flammable decks, stairs, and other projections, and share HIZ with neighboring properties. Spacing ranges from less than 10 feet to 30 feet. Heating is provided by electricity and natural gas.

While a moderate number of properties maintain defensible space, compliance is limited where hazardous fuels are present on adjacent parcels under separate ownership. Nonetheless, these individual efforts remain worthwhile, as they reduce structure ignition potential and contribute to overall neighborhood resilience.

Large stands of black spruce exist just beyond bands of hardwoods and landscaping that is maintained along the roadways. Fuels are a mix of hardwoods and lowland marsh with dense stringers of dead black spruce and continuous ladder fuels running between neighborhoods. Dense concentrations of homes are situated in continuous fuel beds with heavy components of spruce.

Within the SPU boundary is the Rabbit Creek Shooting Park. The activities that happen on this property combined with fuels surrounding the ranges create the potential for fire starts.

Primary access roads and streets are 20–40 feet wide, paved, adequately marked, and mostly clear of vegetation five feet from the road. Streets, however, can be narrow through individual neighborhoods, wind through multiple dense neighborhoods in non-concentric loops, and may be confusing to visitors.

Evacuation from this area may be difficult due to the large number of people needing to travel through other neighborhoods that are also aligned with fuel, wind, and topography. Road markers are adequate. Electric utilities are distributed through elevated lines on wooden power poles.

# Appendix A – SPU Ignitability Analysis

Hydrants are available and adequately spaced for the entirety of the SPU. Water is provided by AWWU.

# SPU 10: Kincaid

# Appendix A – SPU Ignitability Analysis

## SPU 10: Kincaid


Kincaid consists primarily of dense, tightly spaced homes on small to midsize lots, with a mix of well-established and newly constructed neighborhoods, businesses, and industrial facilities. Areas of new development are pushing west into dense and unmanaged wildland fuels. This SPU is bordered by the Ted Stevens International Airport to the north, Kincaid Park to the west, Turnagain Arm shoreline to the south, and dense residential/industrial to the east. Kincaid Park borders this SPU and is a popular and highly visited destination for both visitors and locals alike, hosting a network of forested trails, day-use areas, sports fields, and critical infrastructure.

Access to and through the SPU is generally paved and well-marked, although signage for some neighborhoods are overgrown with vegetation and difficult to locate. Primary roads are 20-40 feet wide and bordered by sidewalks in most areas, however secondary streets are narrow, winding, often choked with vehicles, and sometimes dead end without adequate space for firefighting apparatus.

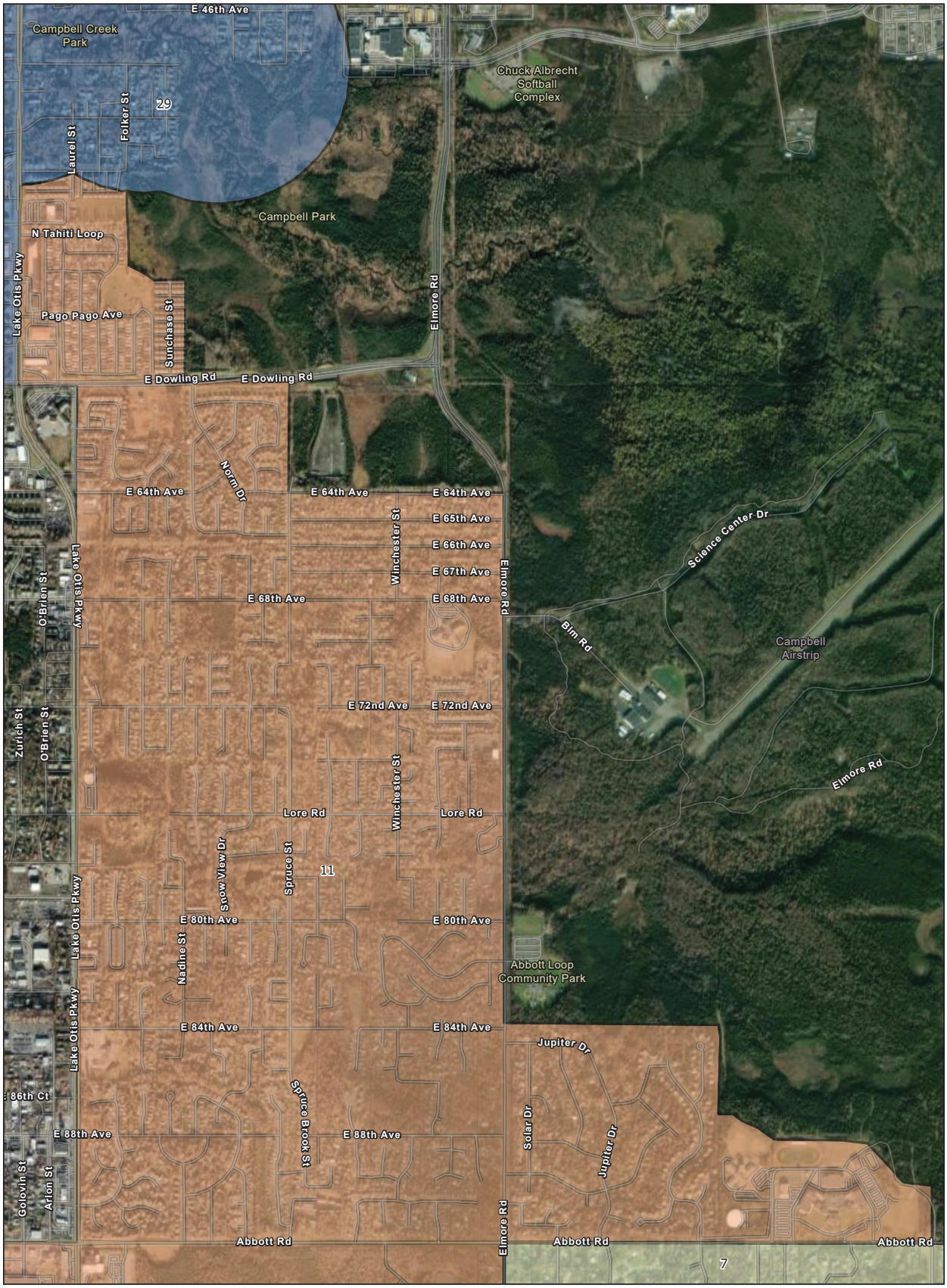
Housing in the SPU was built mostly in the 1990s to early 2000s. The predominant construction type is wood with vinyl siding and mostly ignition resistant roofing materials, with few shake roofs interspersed throughout. Many properties feature flammable decks, stairs, and other projections.

Spacing between homes ranges from less than 10 feet to greater than 50 feet. Heating is provided by electricity, natural gas, and wood stoves. While some properties maintain defensible space, compliance is limited where hazardous fuels are present on adjacent parcels under separate ownership. Nonetheless, these individual efforts remain worthwhile, as they reduce structure ignition potential and contribute to overall neighborhood resilience. Open spaces and parks within the neighborhoods are bordered by dense and overgrown fuels that are linked between neighborhoods, parks, and residences.

This SPU has a heavy concentration of spruce stands spread throughout neighborhoods over generally flat topography. This heavy spruce component and frequent high winds increase the chances of a large, wind-driven wildfire. Although fuels are overgrown and highly susceptible to fire in many areas, house-to-house transmission could potentially be limited to neighborhoods immediately surrounding large spruce stands greater than 40 acres.

Electric utilities are distributed through elevated lines on wooden power poles. This area is scattered with communication infrastructure. Hydrants, serviced by AWWU, are available and adequately spaced for the entirety of the SPU.

# SPU 11: Abbott/Elmore




N

# Appendix A – SPU Ignitability Analysis

## SPU 11: Abbott/Elmore


The Abbott/Elmore SPU is diverse, containing a mix of residential, commercial, industrial, and parkland areas spread over a generally flat topography. Home and lot sizes vary considerably, with critical infrastructure sites interspersed throughout. High concentrations of hazardous fuels are present, particularly along the SPU's eastern border, which adjoins extensive MOA and BLM-managed wildlands.

The predominant construction type is wood with vinyl siding and ignition resistant roofs. Additionally, there are modular homes that abut to parklands. Many properties feature flammable decks, stairs, and other projections. Spacing between homes is generally 10 to 30 feet, with outbuildings and yard clutter on limited lot space. Heating is provided by electricity, natural gas, and wood stoves.

Few properties maintain defensible space, and compliance is limited where hazardous fuels are present on adjacent parcels under separate ownership. Nonetheless, these individual efforts remain worthwhile, as they reduce structure ignition potential and contribute to overall neighborhood resilience.

This SPU has a heavy concentration of spruce stands spread throughout neighborhoods, including alongside primary roads. This heavy spruce component and frequent high winds increase the chances of a large, wind-driven wildfire. Fuels are overgrown and highly susceptible to fire in many areas, and house-to-house transmission could be difficult to control if such a fire were to occur.

Primary roads are 20-40 feet wide, adequately marked, and bordered by sidewalks in most areas, however neighborhood streets are narrow, winding, often choked with vehicles, and sometimes dead end without adequate space for firefighting apparatus.

Electric utilities are distributed through elevated lines on wooden power poles. Hydrants, serviced by AWWU, are available and adequately spaced for the entirety of the SPU.

# SPU 12: Stuckagain

# Appendix A – SPU Ignitability Analysis

## SPU 12: Stuckagain


The Stuckagain SPU consists of a single, isolated neighborhood that sits in a convergence of mountain valleys from alpine peaks above and is bordered by steep creek drainages and unmanaged fuels. Homes are generally large and are situated on large lots with adequate spacing between residences. They are built mid-slope in deciduous hardwood stands with stringers of black spruce, along with small, isolated clusters of dead spruce and continuous woody shrub understory. The neighborhood is surrounded by wildland fuels.

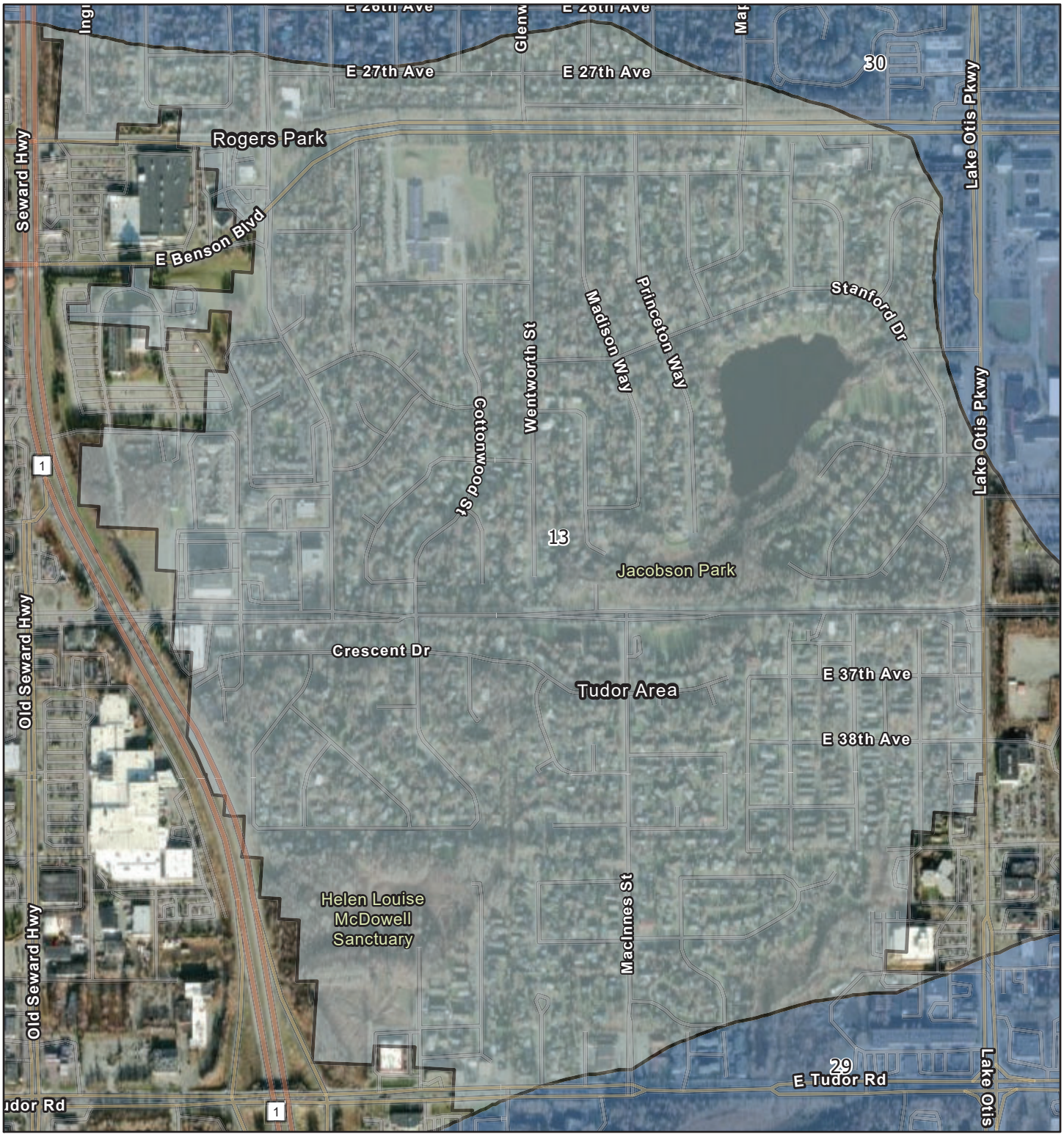
Campbell Airstrip Road provides the only means of access and egress and cuts through dense boreal forest. The road is paved, greater than 40 feet wide, adequately marked, and within a 300-foot-wide shaded fuel break. It runs along the edge of a lowland drainage in very dense fuels and travels mid-slope into more complex topography where the neighborhood is situated. Streets are inadequately marked, and vegetation provides less than five feet of clearance in many areas. Some driveways are long, and some are gated.

Homes date from the 1970s to the present and are well-maintained. Construction type is variable, but mostly wood construction with high-quality materials. Most homes are equipped with ignition resistant roofs; however, a few homes with shake roofs exist. Many properties feature wood decks, stairs, covered patios, and other projections that could serve as receptacles for embers and firebrands.

Heating is provided by electricity, natural gas, and wood stoves. Some properties maintain defensible space, but compliance is limited in some cases due to the presence of hazardous fuels on adjacent parcels under separate ownership. Nonetheless, these individual efforts remain worthwhile, as they reduce structure ignition potential and contribute to overall neighborhood resilience.

Electric utilities are distributed through elevated lines on wooden power poles and adjacent to dense wildland fuels. There are no fire hydrants in the SPU, so water for firefighting will be delivered by water tenders.

# SPU 13: Lake Otis



# Appendix A – SPU Ignitability Analysis

## SPU 13: Lake Otis


Lake Otis is a collection of small, tightly packed neighborhoods situated amongst hardwoods and spruce trees. Large pockets of black spruce are found in multiple parks. Industrial development and critical infrastructure are woven amongst the neighborhoods.

Access throughout the entire SPU is 20-40 feet wide, adequately marked, and paved. Secondary streets are narrow and often choked with vehicles and sometimes dead end without adequate space for firefighting apparatus.

Housing consists of 1980s to 1990s era single-family homes. The predominant construction type is wood with vinyl siding and mostly ignition resistant roofs, with shake roofs interspersed throughout. Many properties feature flammable decks, stairs, and other projections.

Spacing between homes is generally 20 to 30 feet. Heating is provided by electricity, natural gas, and wood stoves. While some properties maintain defensible space, compliance is limited where hazardous fuels are present on adjacent parcels under separate ownership. Nonetheless, these individual efforts remain worthwhile, as they reduce structure ignition potential and contribute to overall neighborhood resilience.

Electric utilities are distributed through elevated lines on wooden power poles. Hydrants, serviced by AWWU, are available and adequately spaced for the entirety of the SPU.

# SPU 14: Turnagain

# Appendix A – SPU Ignitability Analysis

## SPU 14: Turnagain


The Turnagain SPU contains a collection of densely packed suburban neighborhoods. The area hosts schools, churches, sports complexes, and commercial areas that break up the landscape and presence of fuels. The SPU is bordered by the Ted Stevens International Airport to the south and west, the shoreline of the Knik Arm to the north, and Minnesota Drive to the east.

Roads leading to and throughout the SPU are 20-40 feet wide, paved, and adequately marked. They are mostly clear of vegetation, with greater than five feet of clearance from the roadway. Many streets dead end in cul-de-sacs. Homes range in age between the 1950s to present and are mostly single-family. The predominant construction type is wood with vinyl siding and ignition resistant roofs. Many properties feature flammable decks, stairs, and other projections.

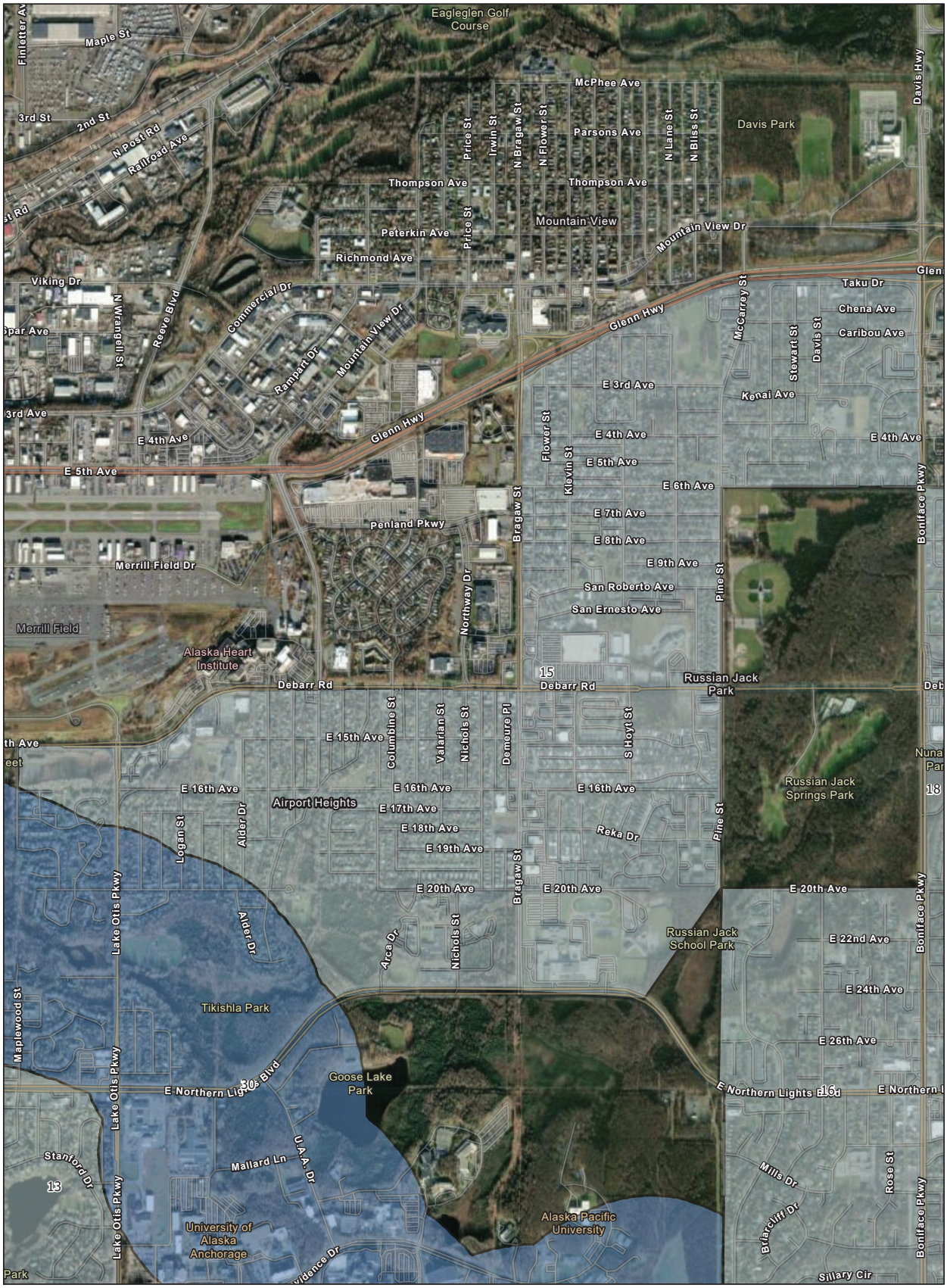
Spacing between homes is generally less than 30 feet. Heating is provided by electricity, natural gas, and wood stoves. While some properties maintain defensible space, compliance is limited where hazardous fuels are present on adjacent parcels under separate ownership. Nonetheless, these individual efforts remain worthwhile, as they reduce structure ignition potential and contribute to overall neighborhood resilience. Fuels adjacent to primary roads are mixed hardwood canopy and non-native ornamental vegetation.

The northwest corner of the SPU is adjacent to the Kincaid / TSAIA ASI. This represents the most significant concern for the Turnagain SPU, as it borders an area with substantially higher hazardous fuel loading and elevated fire spread potential. Vegetation within the SPU consists mainly of low-density hardwoods with isolated pockets of black spruce. While some dead spruce have been removed along primary access routes, small clusters remain near some homes. The SPU is prone to high-wind conditions which can rapidly influence fire behavior and direction.

Electric utilities are distributed through elevated lines on wooden power poles. Hydrants, serviced by AWWU, are available and adequately spaced for the entirety of the SPU.

Railroad tracks run through the eastern side of the SPU, which contains areas of dense and overgrown fuels that could present ignition hazards.

# SPU 15: Merrill




# Appendix A – SPU Ignitability Analysis

## SPU 15: Merrill


Residences in the Merrill SPU are mostly surrounded by built urban environment and consist of a variable range of densely packed single-family homes. Large schools, commercial districts and industrial complexes. The SPU is bordered by open expanses of continuous fuels with large clusters of black spruce to the south and east.

Wildfire ignitions in this area have been linked to illegal campfires and unauthorized campsite activity occurring within dense, overgrown fuels. This location is a known congregation point for transient individuals, resulting in ongoing public safety concerns and an elevated ignition risk requiring continued monitoring and enforcement presence.

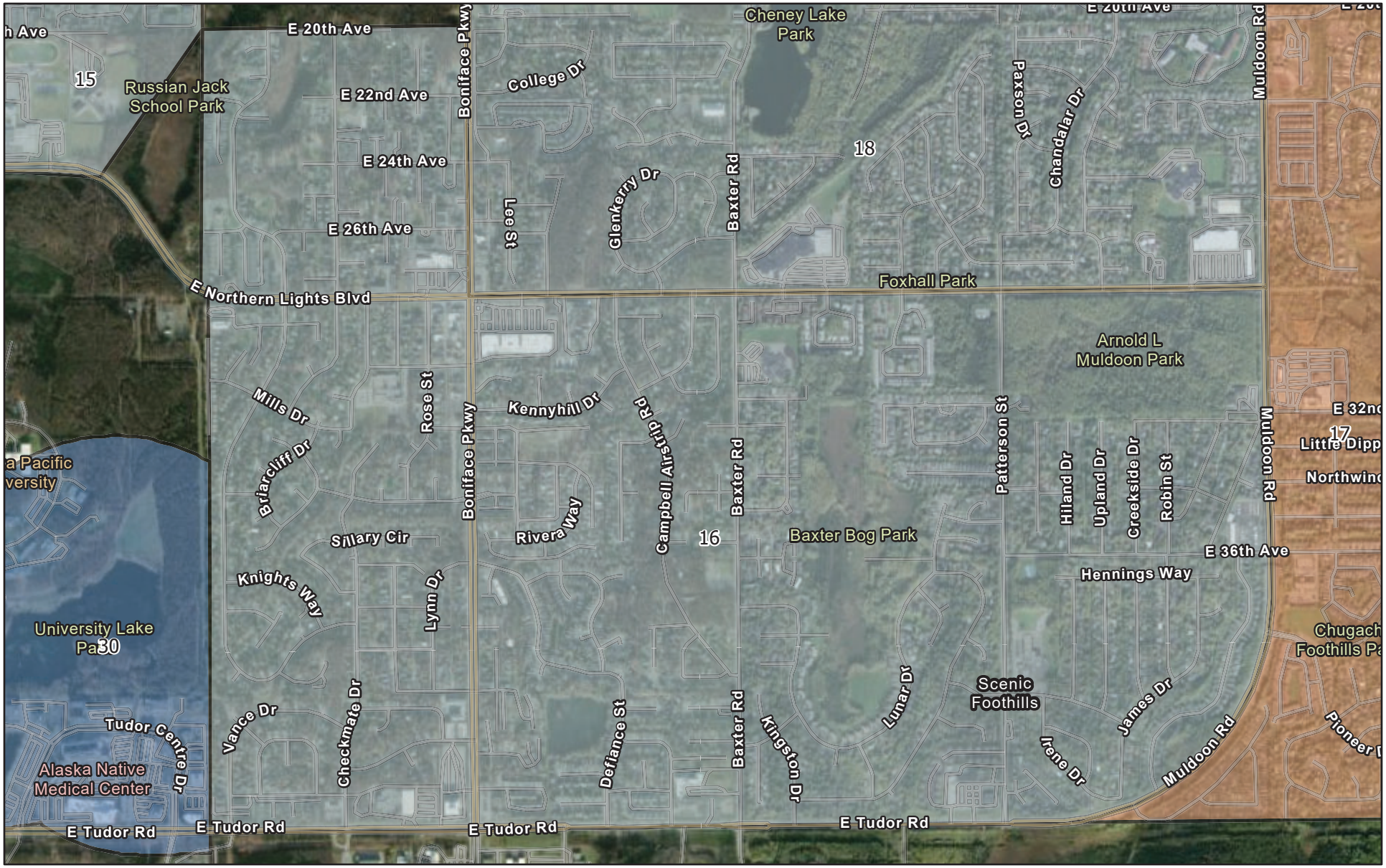
Housing consists of single-family and multifamily homes constructed mostly from the 1960s through the 1990s. The predominant construction type is wood with vinyl siding and ignition resistant roofs. Many properties feature flammable decks, stairs, and other projections. Spacing between homes is generally less than 30 feet, increasing the risk of house-to-house ignition. Heating is provided by electricity, natural gas, and wood stoves.

Few properties maintain defensible space and compliance is limited where hazardous fuels are present on adjacent parcels under separate ownership. Nonetheless, these individual efforts remain worthwhile, as they reduce structure ignition potential and contribute to overall neighborhood resilience. Fuels adjacent to primary roads are mixed hardwood canopy and non-native ornamental vegetation.

Primary access roads and streets are 20–40 feet wide, paved, adequately marked, and mostly clear of vegetation five feet from the road. Side streets, however, can be narrow through individual neighborhoods and choked with vehicles, which could complicate emergency response.

Electric utilities are distributed through elevated lines on wooden power poles. Hydrants, serviced by AWWU, are available and adequately spaced for the entirety of the SPU.

# SPU 16: Baxter




# Appendix A – SPU Ignitability Analysis

## SPU 16: Baxter


The Baxter SPU is host to a combination of high-density suburban neighborhoods and small commercial areas. The area is surrounded by and includes broad stretches of continuous fuels interspersed with dense stands of black spruce. An electric transmission line corridor managed by Chugach Electric Association (CEA) is situated along the southern boundary and acts as a fuel break between hazardous fuels and residential areas.

Wildfire ignitions in this area have been linked to illegal campfires and unauthorized campsite activity occurring within dense, overgrown fuels. This location is a known congregation point for transient individuals, resulting in ongoing public safety concerns and an elevated ignition risk requiring continued monitoring and enforcement presence.

Access to and through the SPU via Tudor Road, Boniface Parkway and Baxter Road are wide, paved, adequately marked, and clear of vegetation. Fuels adjacent to primary roads are mixed hardwood canopy and non-native ornamental vegetation. Side streets, however, can be narrow through individual neighborhoods and choked with vehicles.

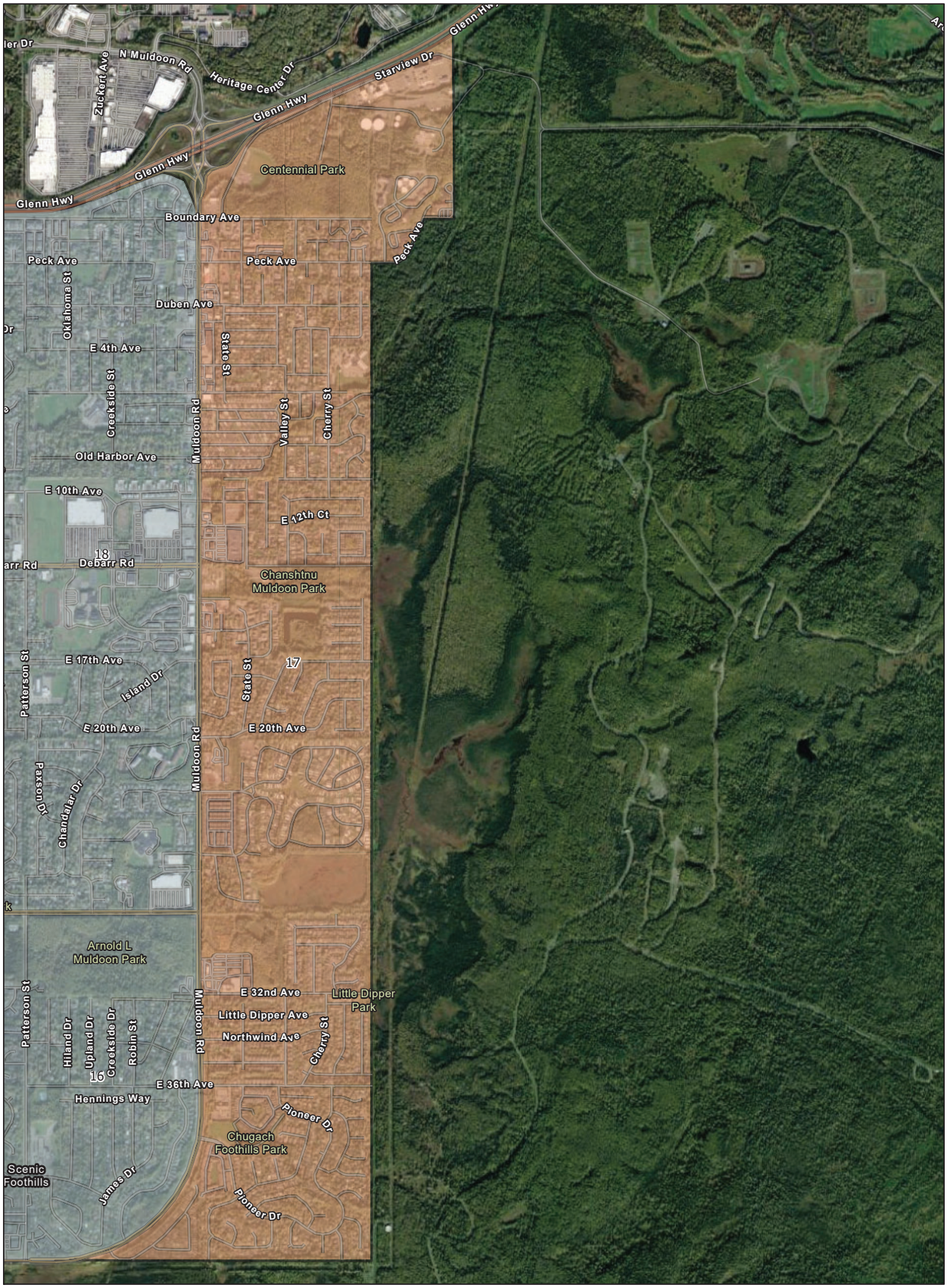
A diverse mix of residential types, ranging from multi-family condominiums to single-family homes were built mostly through the early 1970s to the 2000s. The predominant construction type is wood with vinyl siding and ignition resistant roofs. Many properties feature flammable decks, stairs, and other projections. Spacing between homes is generally less than 15 feet, contributing to high potential for structure-to-structure ignition. Heating is provided by electricity and natural gas.

While some properties maintain defensible space, compliance is limited where hazardous fuels are present on adjacent parcels under separate ownership. Nonetheless, these individual efforts remain worthwhile, as they reduce structure ignition potential and contribute to overall neighborhood resilience.

This community has a moderate concentration of spruce stands spread throughout neighborhoods over a generally flat topography. This spruce component and semi-frequent high winds increase the chances of a large, wind-driven wildfire. Fuels are overgrown and highly susceptible to fire in many areas, and house-to-house transmission could be difficult to control if such a fire were to occur.

Electric utilities are distributed through elevated lines on wooden power poles. Hydrants, serviced by AWWU, are available and adequately spaced for the entirety of the SPU.

# SPU 17: East Muldoon




N

# Appendix A – SPU Ignitability Analysis

## SPU 17: East Muldoon


The East Muldoon SPU is a strip of tightly packed, primarily residential, neighborhoods and is surrounded by dense stands of hazardous fuels on three sides. The SPU also features some lowland, marshy and wet areas. Positioned at the base of mountainous foothills, the SPUs topography is generally flat and sits in the transition between wildland vegetation and built urban environment. Most homes are within 3,000 feet of hazardous fuels where pre-heating, radiant heat, and energy release of an oncoming wildfire could be most extreme.

The JBER ASI borders the East Muldoon SPU, where warfighter training and munitions use increase the likelihood of fire ignition. Suppression operations can be challenging due to access limitations and active range constraints. In addition, wildfire starts in the SPU have been associated with illegal campfires and unauthorized campsite activity occurring within dense, overgrown fuels.

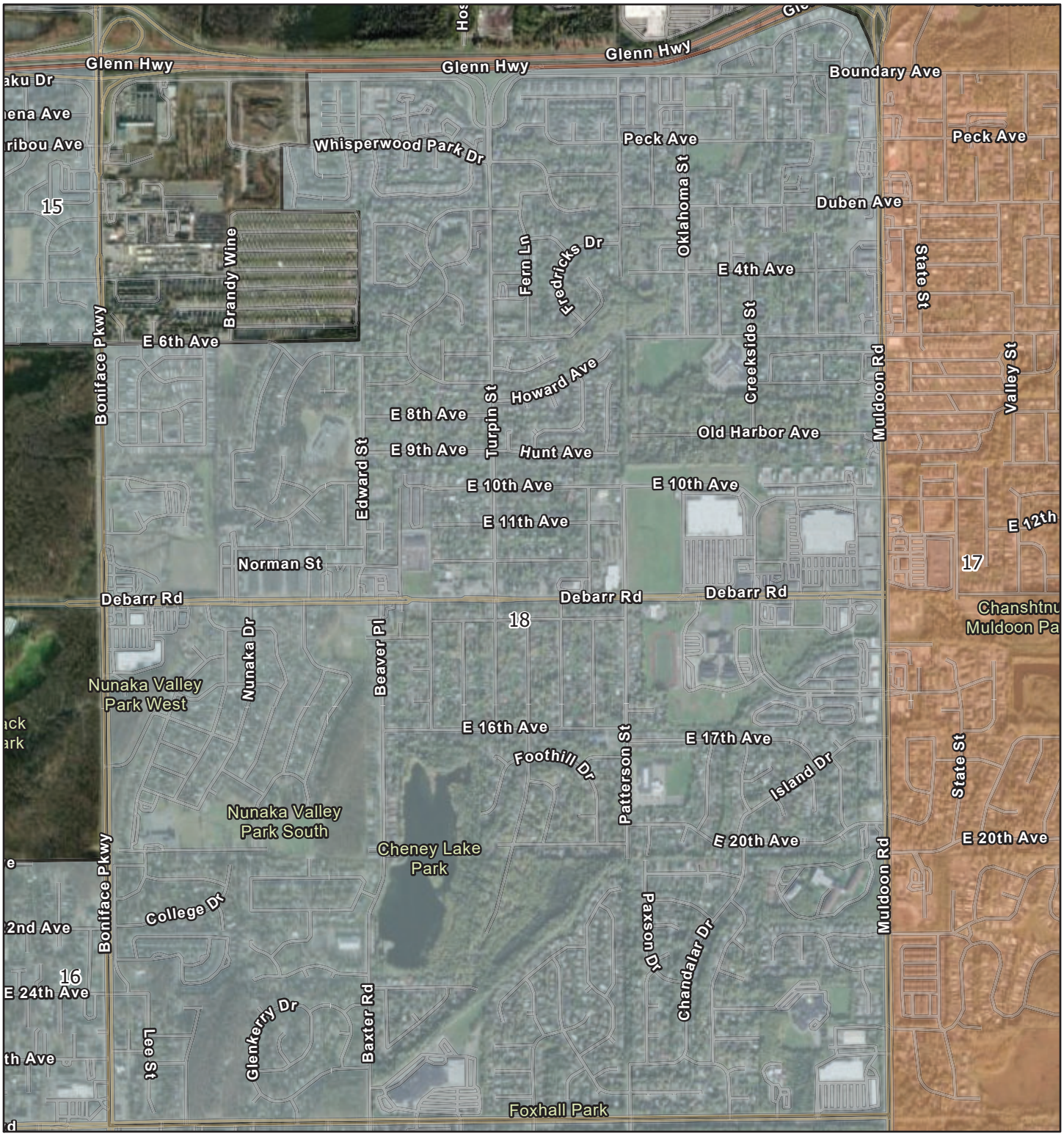
Primary access roads and streets are 20–40 feet wide, paved, adequately marked, and mostly clear of vegetation. The primary means of egress from all neighborhoods, Muldoon Road, is along the SPU's western border. Residential streets can be narrow and sometimes crowded with vehicles, which could complicate evacuation.

A diverse mix of residential types, ranging from multi-family condominiums to single-family homes, were built mostly in the 1970s. This SPU also features assisted living areas that may require additional consideration during an evacuation. The predominant construction type is wood with vinyl siding and mostly ignition resistant roofs. Many properties feature flammable decks, stairs, and other projections. Spacing between homes is generally less than 15 feet, raising concern for structure-to-structure ignition. Heating is provided by electricity and natural gas.

While some properties maintain defensible space, compliance is limited where hazardous fuels are present on adjacent parcels under separate ownership. Nonetheless, these individual efforts remain worthwhile, as they reduce structure ignition potential and contribute to overall neighborhood resilience.

Electric utilities are distributed through elevated lines on wooden power poles. Hydrants, serviced by AWWU, are available and adequately spaced for the entirety of the SPU.

# SPU 18: West Muldoon



# Appendix A – SPU Ignitability Analysis

## SPU 18: West Muldoon


The West Muldoon SPU is a well-established area with dense residential neighborhoods, large shopping areas, commercial districts, and critical infrastructure. The SPU is mostly urban and buffered from wildland fuels except for Russian Jack Springs Park to the west. The area is generally flat but positioned at the base of mountainous foothills and in alignment with larger topographical features and waterways that may influence fire behavior.

Wildfire ignitions in this area have been linked to illegal campfires and unauthorized campsite activity occurring within dense, overgrown fuels. Multiple locations in this SPU are known congregation points for transient individuals, resulting in ongoing public safety concerns and an elevated ignition risk requiring continued monitoring and enforcement presence.

Access to and through the SPU via Glenn Highway, Muldoon Road, and Northern Lights Boulevard are wide, paved, adequately marked, and clear of vegetation with more than five feet of clearance from the road. Certain sections of Boniface Parkway are adjacent to heavy and continuous fuels; however, the roadway itself is two lanes in each direction with an 8–10 foot median, sidewalks, and brush management 15 feet or more in some places. Neighborhood streets, however, can be narrow and crowded with vehicles, which could complicate evacuation.

A diverse mix of residential types, ranging from multi-family condominiums to single-family homes were built from the 1950s to the present. Construction type is variable throughout the SPU with materials ranging from river rock and large-log to wood with vinyl siding, and mostly ignition resistant roofs. This SPU features assisted living areas that may require additional considerations during an evacuation. Many properties feature flammable decks, stairs, fences, and other projections. Spacing between homes is generally less than 15 feet, elevating structure-to-structure ignition risk. Heating is provided by electricity, natural gas, and wood stoves.

This community has some concentrated spruce stands spread throughout neighborhoods. While some properties maintain defensible space, compliance is limited where hazardous fuels are present on adjacent parcels under separate ownership. Nonetheless, these individual efforts remain worthwhile, as they reduce structure ignition potential and contribute to overall neighborhood resilience.

Electric utilities are distributed through elevated lines on wooden power poles. Hydrants, serviced by AWWU, are available and adequately spaced for the entirety of the SPU.

# SPU 19: Rainbow

# Appendix A – SPU Ignitability Analysis

## SPU 19: Rainbow


The Rainbow SPU along Turnagain Arm includes the Bird and Indian communities and is comprised of residences, small businesses, and campgrounds. While the nearby Rainbow residential area is referenced in the SPU name, those homes are not included within the mapped boundary because they do not meet the exposure value threshold criteria. The name is retained to ensure the area remains recognized in planning efforts.

The SPU falls outside the fire service area, with pockets of the area experiencing unreliable radio and cellular communications.

Residences are built along the lower hillsides and valley bottom. Their age varies widely, dating back to the 1950's through the present. Construction type is variable, as well, with materials ranging from river rock and large-log to wood with vinyl siding. Most roofs are ignition resistant. Many properties feature flammable decks, stairs, fences, and other projections. Space between homes is generally more than 50 feet, though some properties include outbuildings and sheds. Heating is provided by wood stoves, electricity, and some off-grid systems. Road and address markers are sometimes situated in or directly adjacent to overgrown brush and are difficult to locate.

Only a few properties maintain defensible space, and compliance is limited in some cases due to the presence of hazardous fuels on adjacent parcels under separate ownership. Nonetheless, these individual efforts remain worthwhile, as they reduce structure ignition potential and contribute to overall neighborhood resilience.

The only means of egress from these communities is the Seward Highway. During peak tourism, and when impingements such as rockslides and vehicle accidents occur, this two-lane highway can halt to a standstill. Previous wildfire incidents have demonstrated logistical challenges for evacuation, fire suppression access, and full closure of this heavily traveled road.

Vegetation within the SPU consists of heavy concentrations of spruce periodically intermixed with mixed hardwoods. High winds are prevalent and unpredictable. Additionally, the campgrounds in the SPU, when combined with vegetation and winds, increase the risk for a catastrophic, wind-driven wildfire.

Electric utilities are distributed through elevated lines on wooden power poles. Transmission line clearance has been increased to 50 feet from centerline to account for fuel conditions and the risk of them striking the lines.

The Rainbow SPU is not equipped with hydrants. Some privately maintained water systems exist; however, responding fire resources may not be able to access them. Water for firefighting will be delivered by water tenders.

# SPU 20: Girdwood

# Appendix A – SPU Ignitability Analysis

## SPU 20: Girdwood

| Low | Moderate | **High** | Very High | Extreme |
|---|---|---|---|---|

Girdwood is a dynamic mountain resort community located in the temperate rainforest zone near the southern end of Turnagain Arm. While the historic Crow Creek Mine area is referenced in planning discussions, it is not included within the mapped boundary due to its lower exposure value and separation from dense residential development. The SPU is in a complex mountain zone that acts as a "catcher's mitt" for weather flowing off the Turnagain Arm. The meeting of shoreline and forest at the community's entrance creates conditions where cool, damp, and overcast weather dominate, though small changes in this sensitive environment could have detrimental wildfire effects.

Utilities and infrastructure continue to be in development and have not kept pace with new construction. Year-round populations rely on limited water, hydrants, waste, and emergency services. Hydrants are limited to the townsite nearest to the Alyeska Resort and are not found along the Alyeska Highway. The resort's hotel maintains a private hydrant system and reserve cistern. Fire response is performed primarily by Girdwood Fire and Rescue. A large airfield bordering Glacier Creek exists in northern part of this SPU.

The SPU contains a mix of single- and multi-family residences built in the 1980's with many being remodeled or rebuilt. Additionally, commercial development is present throughout the community. Some homes constructed within the past five years feature flame-resistant materials, but most homes are of wood-frame construction with wood siding. Roofing materials are shake or ignition resistant. Spacing between homes ranges from less than 15 feet to over 30 feet. Many properties include sheds, wood piles, and other outbuildings that increase the likelihood of ignition from ember cast. Heating sources are wood stoves, electricity, and off-grid systems.

While a few properties maintain defensible space, compliance is limited where hazardous fuels are present on adjacent parcels under separate ownership. Nonetheless, these individual efforts remain worthwhile, as they reduce structure ignition potential and contribute to overall neighborhood resilience.

The entrance to the SPU along Alyeska Highway is lined with neighborhoods accessed via narrow, unpaved driveways. Primary roads are 20-40 feet wide and adequately marked; however, secondary streets are narrow, winding, often choked with vehicles, and sometimes dead end without adequate space for firefighting apparatus. Some secondary streets are unpaved, and road and address markers are often obscured by vegetation or difficult to see. Many secondary roads, such as Hottentot Mine Road and Jewel Mine Road, are surrounded by dense fuels in varying states of health. Road conditions vary seasonally with "mud season"

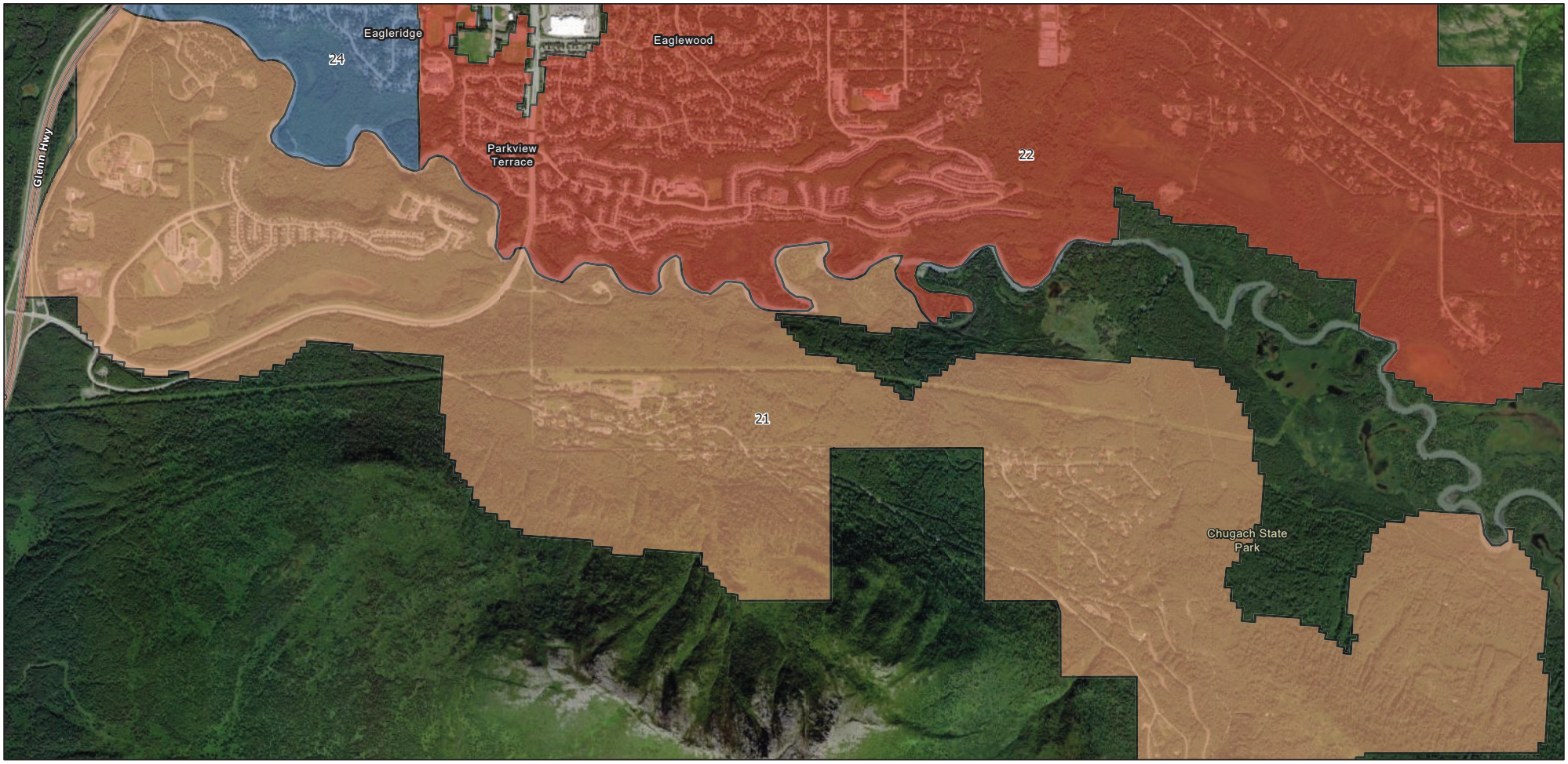
creating additional hazards during spring melt. Finally, Crow Creek Road is heavily lined with hazardous fuels and equipment, creating potential obstacles for access and egress.

Many residential areas are entirely surrounded by wildland fuels. Open spaces and parks are bordered by dense and overgrown vegetation that creates fuel continuity between homes, parks, and commercial construction. A large component of fuels is in decline, with patches of spruce covering significant portions of the landscape. Fir and hemlock also dominate the area, along with continuous woody-herbaceous understory. Development is encroaching on sensitive borders, increasing wildfire vulnerability.

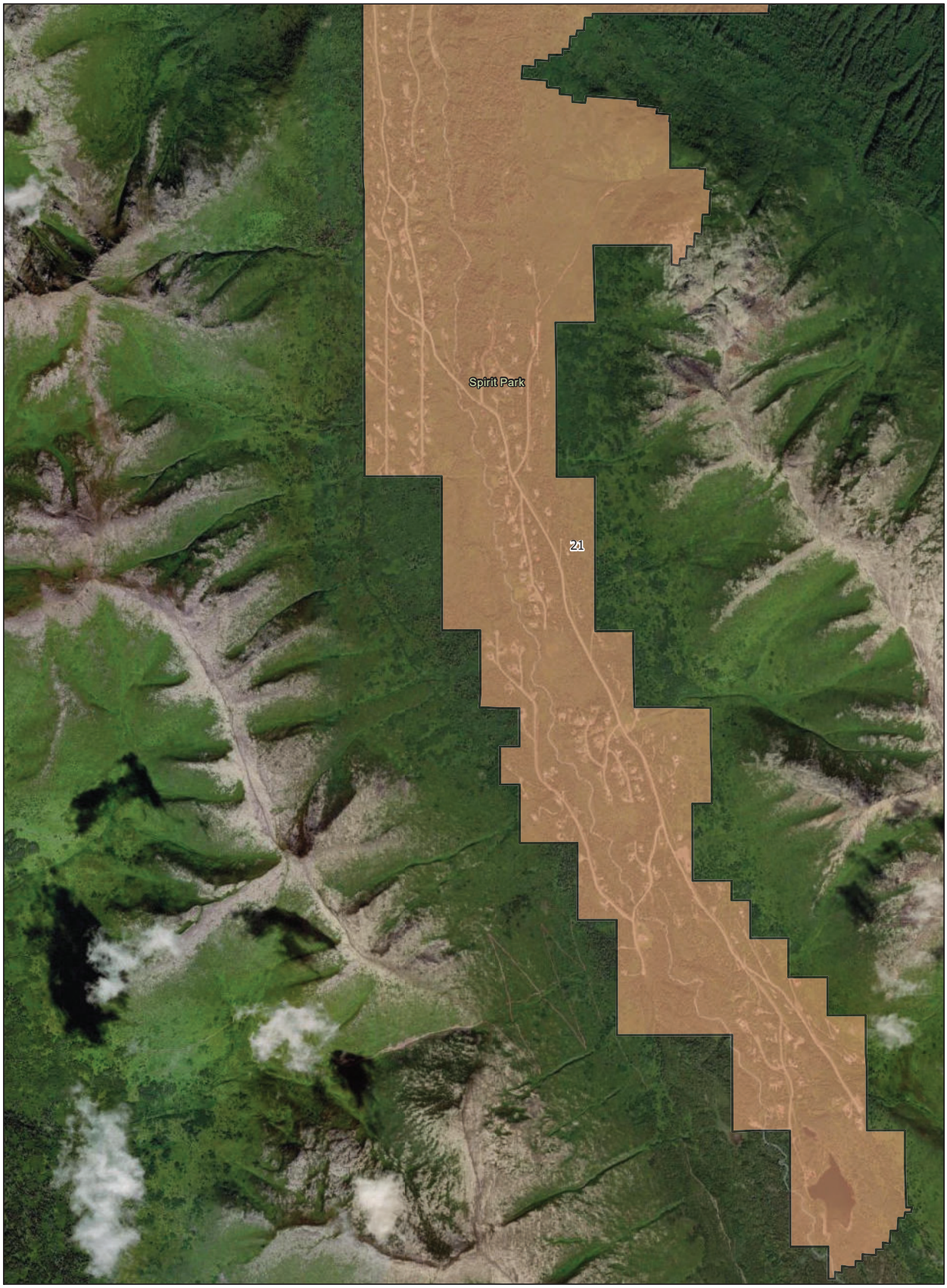
Girdwood sees a large number of local and international visitors each year, with events bringing in up to 8,000 visitors over single weekends. This has the potential to overwhelm resources, such as water, waste, and emergency services. Visitors are not often educated on wildfire risk; they light campfires, sometimes abandoning them, even on high fire danger days. They also commonly use fireworks, which are illegal year-round. Parked vehicles create access and egress challenges. Evacuations are challenging due to limited means of transportation, as visitors often arrive via trains and buses. Additionally, the international tourism market results in the high potential of some visitors not understanding English or evacuation procedures.

Railroad tracks run through the mouth of the valley at the community's entrance, creating an additional ignition source.

# SPU 21: Hiland Map 1 of 2



# SPU 21: Hiland Map 1 of 2



# Appendix A – SPU Ignitability Analysis

## SPU 21: Hiland


The Hiland SPU is part of the narrow glacial drainage of South Fork Eagle River and consists of residences situated in medium- to low-density clusters on medium-sized lots. Hiland Road is the only means for access and egress. It is eight miles long, greater than 20 feet wide, paved, adequately marked, and mostly clear of overhanging and encroaching vegetation. Side road markers are sometimes situated in or directly adjacent to overgrown brush and are difficult to locate. Address markers are variably placed and displayed. Homes are situated mid-slope in transition between mixed hardwood and spruce, or in riparian areas with continuous woody-shrubs growing taller than eight feet in some areas. Roads traverse through mostly riparian and mixed hardwood; downslope contains a heavy concentration of spruce.

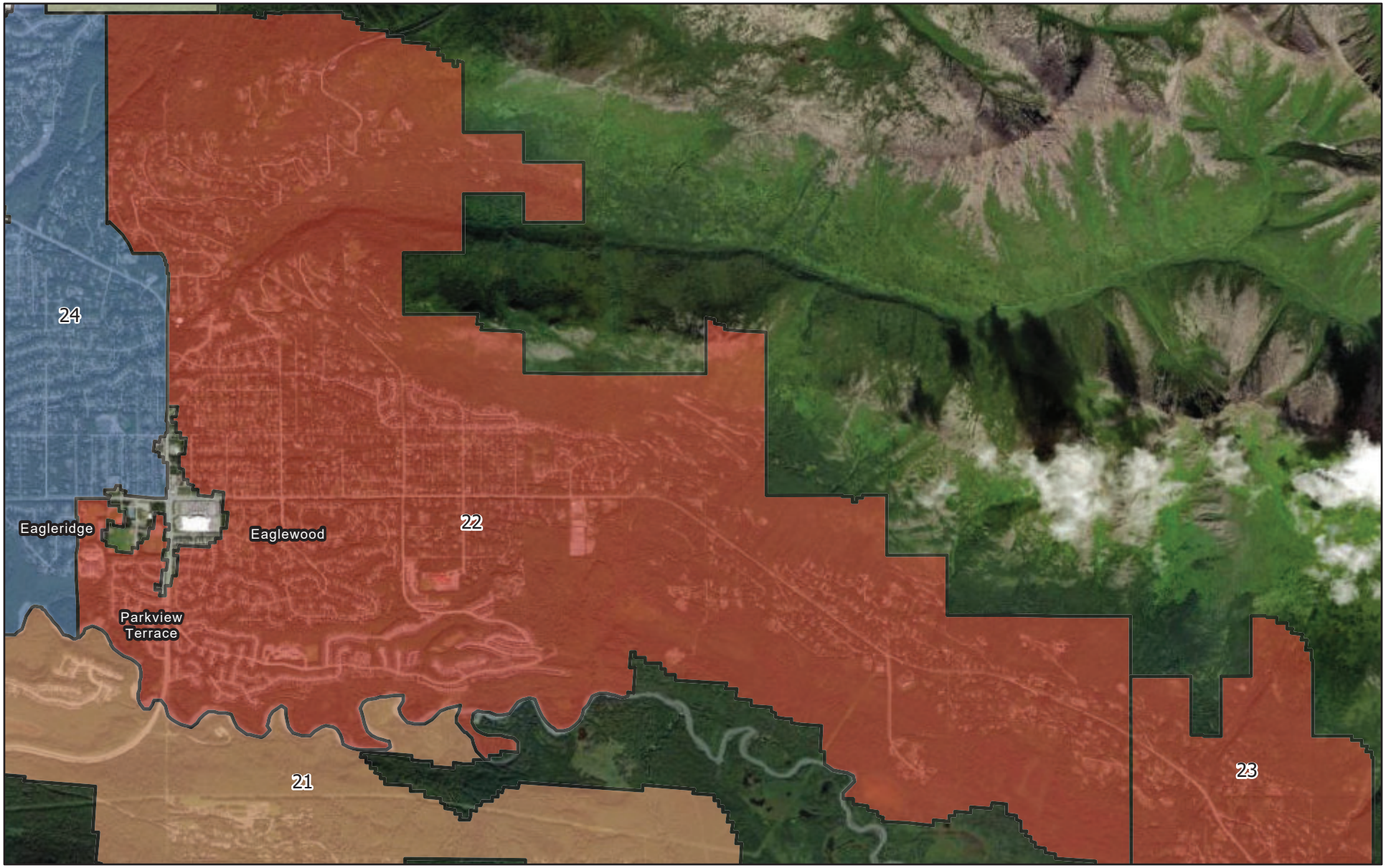
Residential development began in the 1970s and extends to the present. Homes are predominantly wood-frame construction with ignition resistant roofs. Some properties at the north end of the SPU are in various states of maintenance and contain overgrown brush and hazardous debris within the HIZ. Residences up-drainage are generally well-constructed and well maintained. Many properties feature flammable decks, stairs, fences, and other projections. Spacing between homes is generally greater than 50 feet. Heating is provided by electricity and wood stoves.

While some properties maintain defensible space, compliance is limited where hazardous fuels are present on adjacent parcels under separate ownership. Nonetheless, these individual efforts remain worthwhile, as they reduce structure ignition potential and contribute to overall neighborhood resilience.

Dense boreal forest covers some of the SPU, with heavy concentrations of spruce stands distributed throughout. This heavy spruce component and frequent, multidirectional high winds through the narrow valley increase the chances of a large, wind-driven wildfire.

Electric utilities are distributed through elevated lines on wooden power poles. This SPU is within the fire response area; however, it does not feature any hydrants for firefighting. Water for fire suppression will be delivered via water tenders.

# SPU 22: Lower Eagle River



# Appendix A – SPU Ignitability Analysis

## SPU 22: Lower Eagle River


The Lower Eagle River SPU is situated at the intersection of the Eagle River Valley and the Meadow Creek Drainage. The SPU features schools, churches, sports complexes, and a large shopping center. Residences and lots vary in size, and construction eras range from the 1970s to the present. Access to and through the SPU via Eagle River Road and Eagle River Loop Road are wide, well-paved, adequately marked, and clear of vegetation. Secondary roads and streets in the urbanized portion of the SPU are constructed in a grid-like pattern or in large non-concentric loops, with very few actual dead-ends. However, many other roads in the SPU are steep and narrow, with hairpin turns. Unlike the neighboring Upper Eagle River SPU, this SPU is fully within the fire service area.

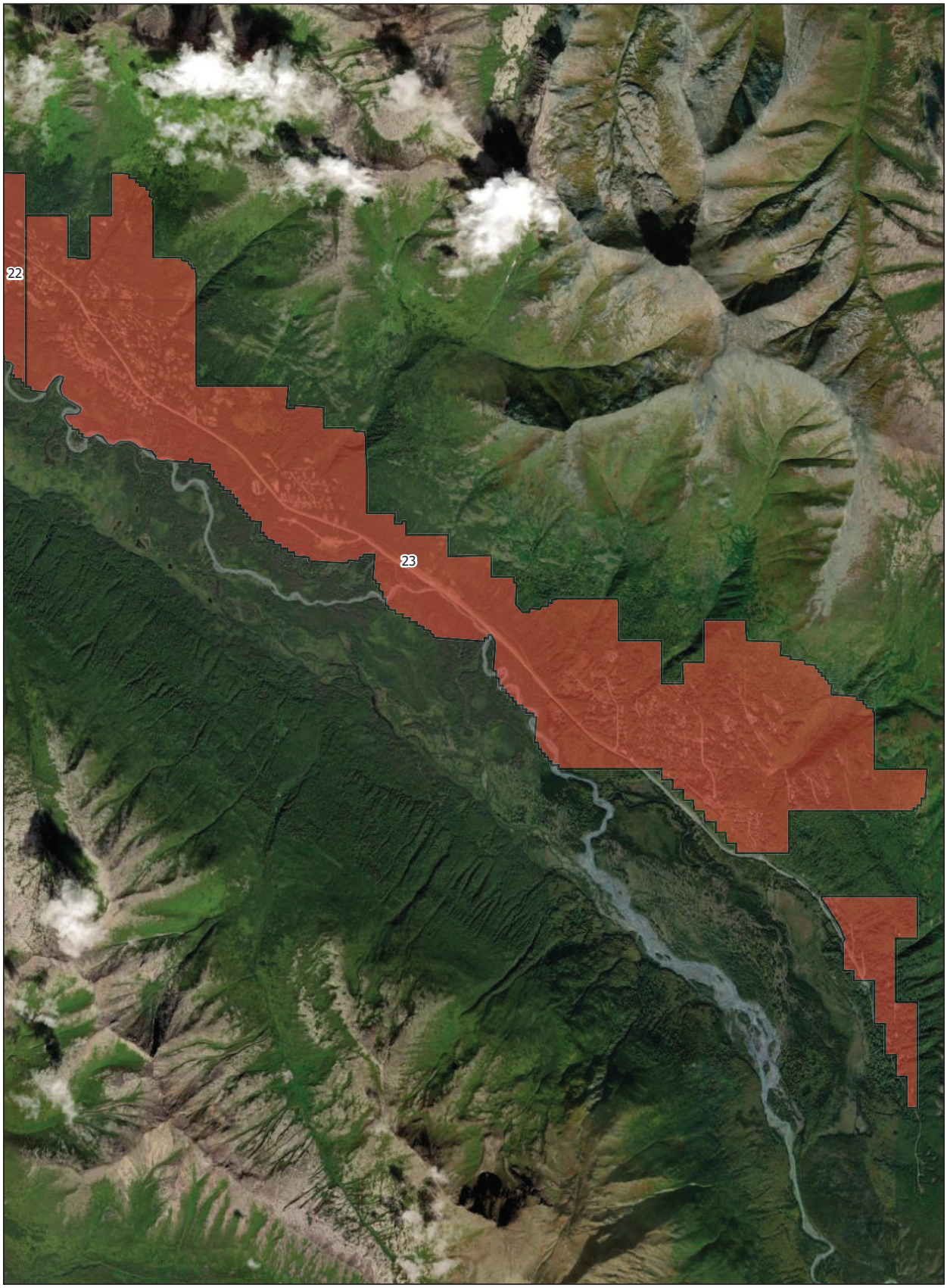
The predominant construction type is wood frame with ignition resistant roofs. Many properties feature flammable decks, stairs, fences, and other projections. Structural spacing ranges from less than 15 feet to more than 50 feet. Heating is provided by electricity, natural gas, and wood stoves.

While some properties maintain defensible space, compliance is limited where hazardous fuels are present on adjacent parcels under separate ownership. Nonetheless, these individual efforts remain worthwhile, as they reduce structure ignition potential and contribute to overall neighborhood resilience.

The SPU hosts a heavy concentration of spruce along low-lying and marshy riparian areas in the drainage bottoms, and on north-facing creeks and riverbanks. Otherwise, fuels exhibit a combination of mixed-hardwood and deciduous stands with isolated patches of black spruce, transitioning to tundra at higher elevations on the valley walls. Due to the terrain, wind speed and direction are highly variable and funneled by multiple inputs, complicating fire spread prediction.

Electric utilities are distributed through elevated lines on wooden power poles. Hydrants are not available in all locations of the SPU and do not extend up Eagle River Road past Eagle River Lane. In areas without hydrants, water for firefighting will be delivered by water tenders.

# SPU 23: Upper Eagle River



# Appendix A – SPU Ignitability Analysis

## SPU 23: Upper Eagle River

| Low | Moderate | High | Very High | Extreme |
|---|---|---|---|---|

The Upper Eagle River SPU begins at the end of the fire service area and extends seven miles up the valley to the Eagle River Nature Center. It consists of residences grouped in medium to moderate density clusters ranging from the valley floor to mid hillside.

Eagle River Road is the only means of access and egress, and travels through dense concentrations of spruce and mixed hardwoods.

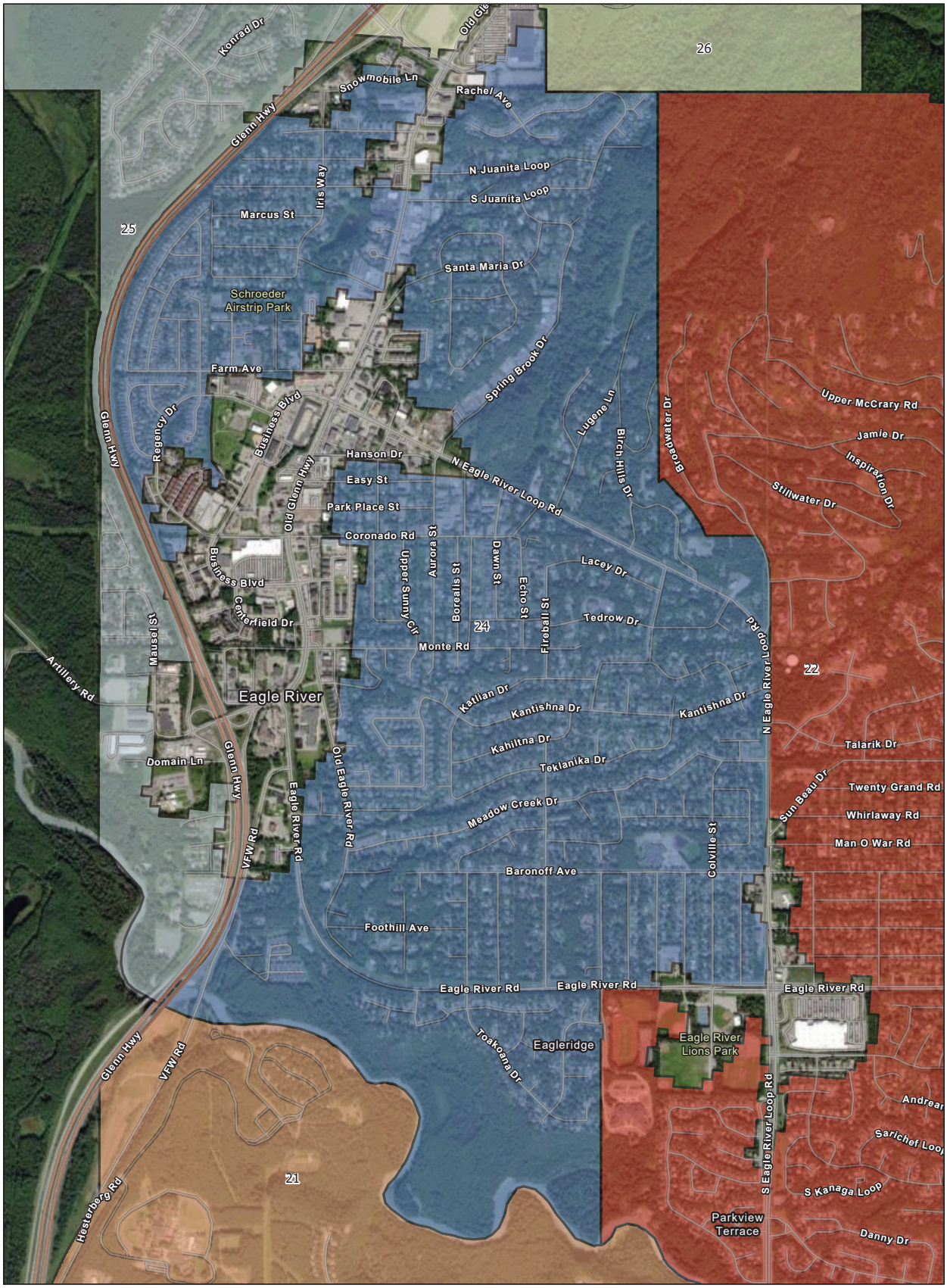
Residential development dates from the 1970s to the present. Comprised of mostly single-family residences, the predominant construction type is wood frame with ignition resistant roofs. Many properties feature flammable decks, stairs, fences, and other projections. Structural spacing is greater than 50 feet in some areas. Heating is provided by electricity, gas (including natural gas tanks), and wood stoves.

Only a few properties maintain defensible space, and compliance is limited in some cases due to the presence of hazardous fuels on adjacent parcels under separate ownership. Nonetheless, these individual efforts remain worthwhile, as they reduce structure ignition potential and contribute to overall neighborhood resilience.

This SPU has a heavy concentration of spruce stands, interspersed with mixed hardwoods and lowland spruce marshes, form a continuous and highly flammable fuel bed across much of the landscape. The SPU is situated within a broad glacial valley where converging ridges and drainages funnel shifting winds, resulting in highly variable wind speed and direction that make fire behavior and direction of spread difficult to predict.

Many roads in the SPU are steep and narrow, and road and address markers are sometimes situated in or directly adjacent to overgrown brush. Electric utilities are distributed through elevated lines on wooden power poles. This SPU is not equipped with hydrants, so water for firefighting will be delivered by water tenders.

# SPU 24: Eagle River Loop




N

# Appendix A – SPU Ignitability Analysis

## SPU 24: Eagle River Loop


The Eagle River Loop SPU is a collection of moderate-density residential neighborhoods situated east of the Glenn Highway and mostly within the urban and commercial center of Eagle River.

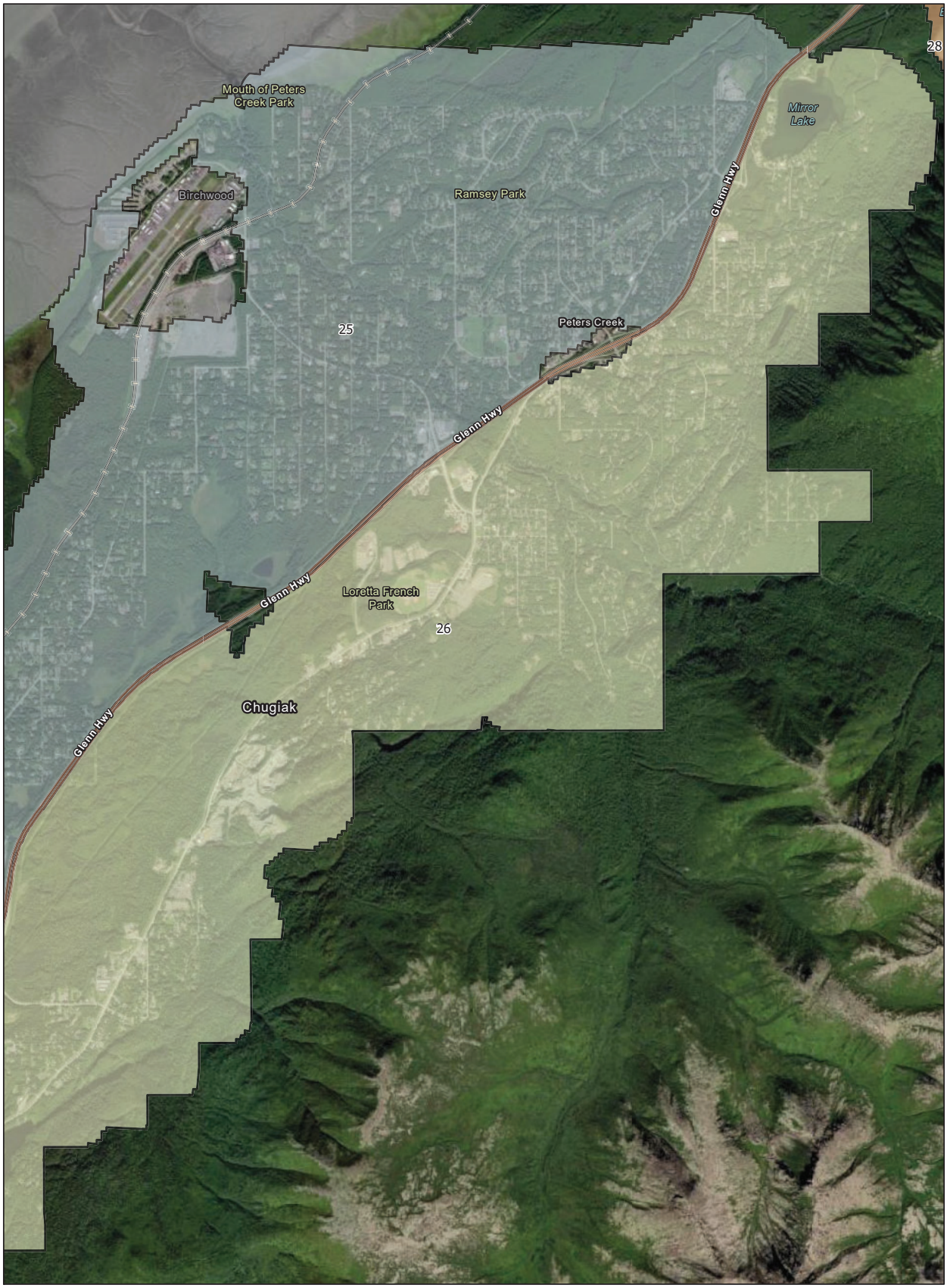
Primary access to neighborhoods is wide, paved, adequately marked, and clear of vegetation with more than five feet of clearance from the road. Residential development began in the 1970's and continues today. It consists mostly of midsize single-family homes. The predominant construction type is wood frame with ignition resistant roofs. Many properties feature flammable decks, stairs, fences, and other projections. Structural spacing ranges from less than 15 feet to more than 50 feet. Heating is provided by electricity, natural gas, and wood stoves.

While some properties maintain defensible space, compliance is limited where hazardous fuels are present on adjacent parcels under separate ownership. Nonetheless, these individual efforts remain worthwhile, as they reduce structure ignition potential and contribute to overall neighborhood resilience.

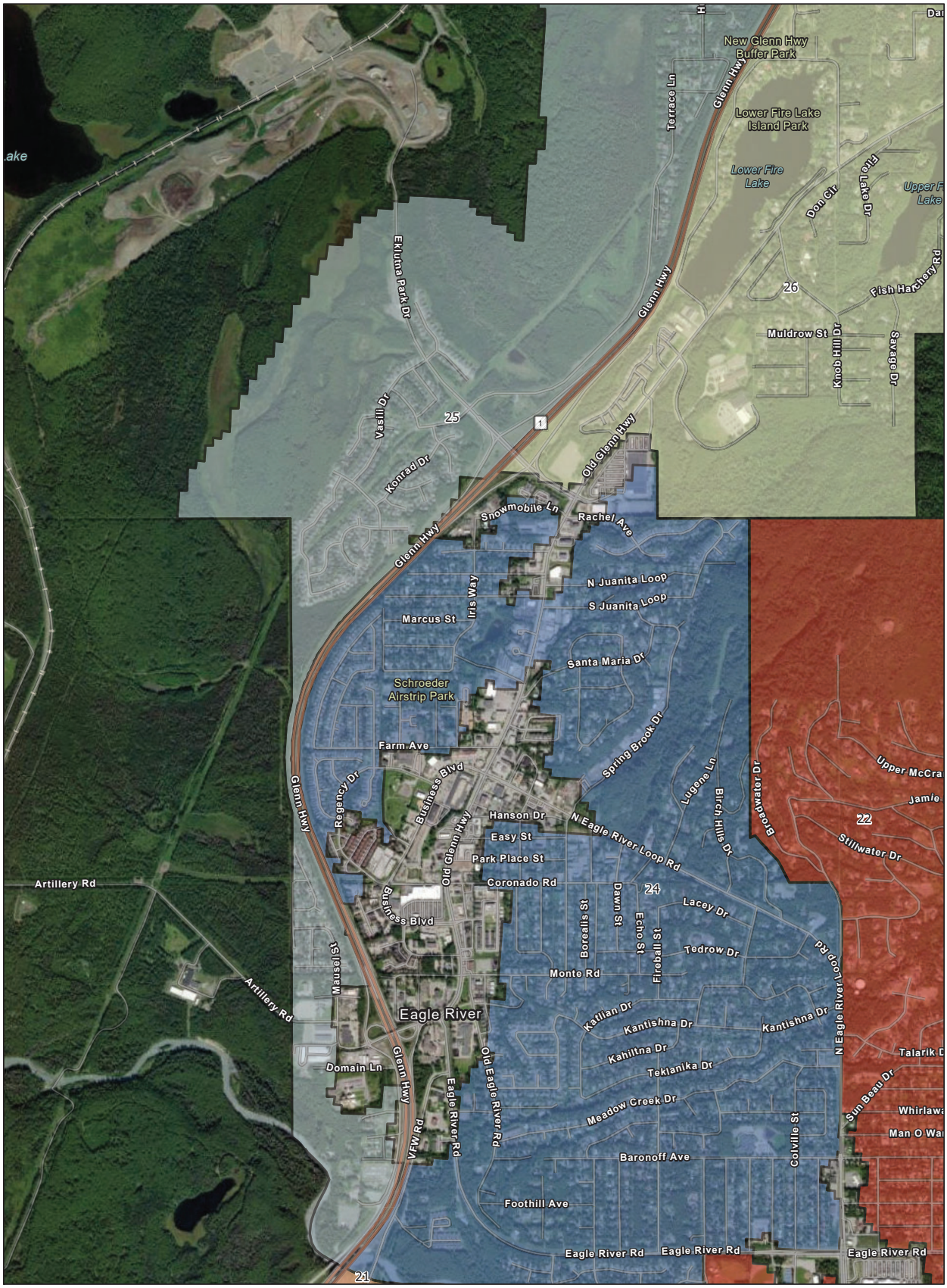
This SPU has a heavy concentration of spruce along low-lying and marshy riparian areas. Otherwise, fuels exhibit a combination of mixed-hardwood and deciduous stands with isolated patches of black spruce.

Electric utilities are distributed through elevated lines on wooden power poles. Hydrants, serviced by AWWU, are available and adequately spaced for the entirety of the SPU.

# SPU 25 & 26: East & West Chugiak Map 1



# SPU 25 & 26: East & West Chugiak Map 2




N

# Appendix A – SPU Ignitability Analysis

## SPU 25: West Chugiak


The West Chugiak SPU is a moderately dense residential area located on the western side of the Glenn Highway. The area is characterized by suburban-style neighborhoods interspersed with small commercial parcels and community amenities. Fuels and vegetation transition quickly from residential landscaping to boreal forest and shrub-dominated fuel in surrounding undeveloped tracts, producing mixed wildfire risk .

Primary access to the community is via paved arterial roads that connect to the Glenn Highway and local road systems. Many roads are inadequately marked. They are generally clear of vegetation within five feet of the roadway, though smaller residential streets may be narrow and crowded with parked vehicles.

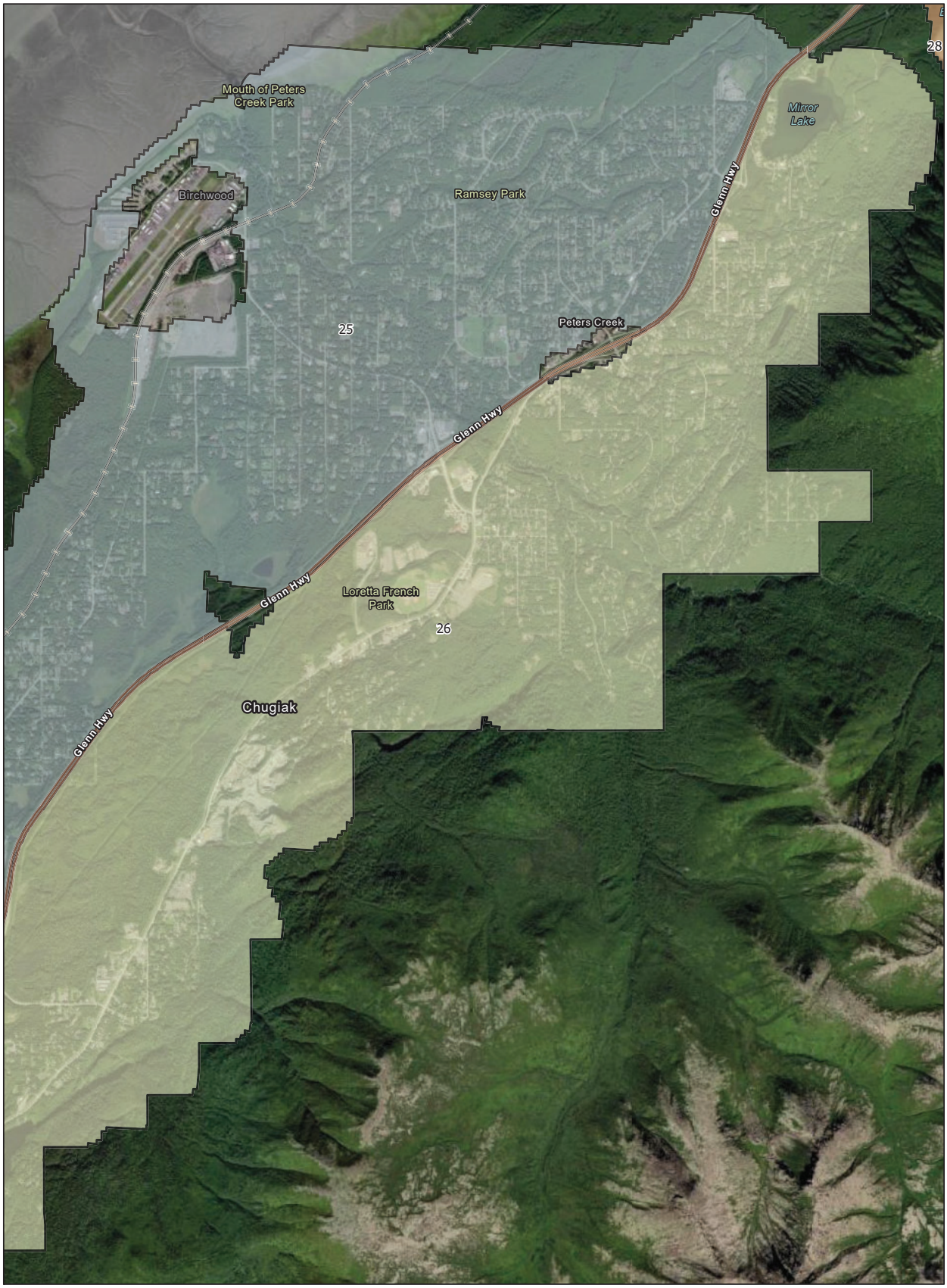
Residential development is primarily single-family homes built from the 1960s, with pockets of newer construction. The predominant construction type is wood with vinyl siding and ignition resistant roofs. Many properties feature flammable decks, stairs, fences, and projections. Structural spacing varies but averages between 20 and 50 feet, with some neighborhoods exhibiting tighter layouts. Heating is provided by electricity, natural gas, and wood stoves.

Only a few properties maintain defensible space, and compliance is limited in some cases due to the presence of hazardous fuels on adjacent parcels under separate ownership. Nonetheless, these individual efforts remain worthwhile, as they reduce structure ignition potential and contribute to overall neighborhood resilience.

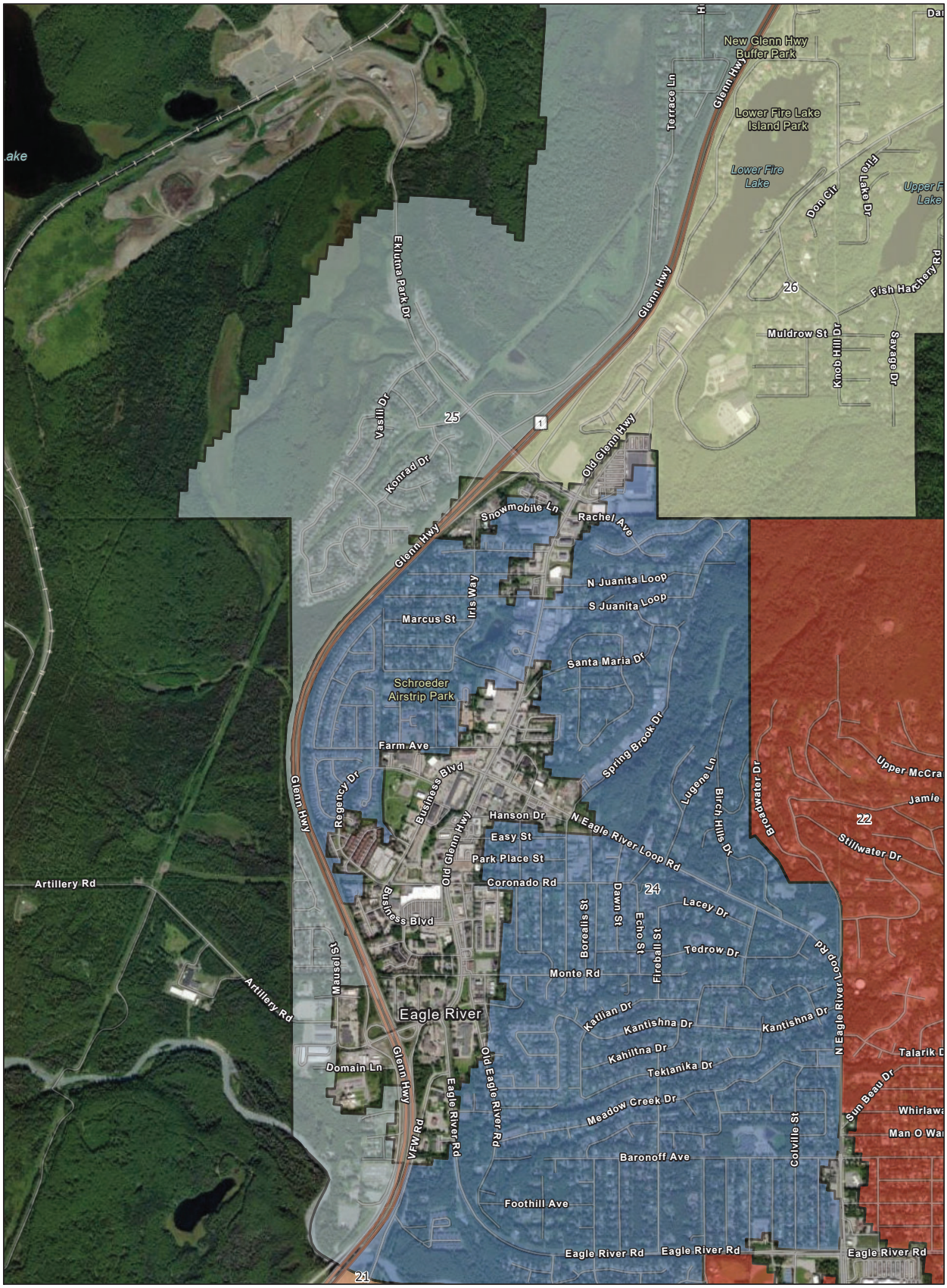
The surrounding vegetative fuel types are dominated by boreal forest interspersed with hardwoods and woody shrub understory. In certain neighborhoods, dense black spruce patches remain in lowland marshy areas and adjacent tracts. Topography is generally flat to rolling, but alignments with valleys and waterways can create fire spread pathways under the right wind conditions.

Electric utilities are distributed through elevated lines on wooden poles, often adjacent to dense fuels.  Very few hydrants, serviced by AWWU, are available in the northernmost segment of this SPU. In areas without hydrants, water for firefighting will be delivered by water tenders.

# SPU 25 & 26: East & West Chugiak Map 1



# SPU 25 & 26: East & West Chugiak Map 2




N

# Appendix A – SPU Ignitability Analysis

## SPU 26: East Chugiak


The East Chugiak SPU is comprised of neighborhoods that are surrounded by continuous boreal forest and intermixed wildland fuels. The SPU is situated near the transition between developed areas and expansive wildland vegetation, creating conditions where fuels and residences are directly interwoven.

Most homes were built in the 1960s, but new houses continue to be built. The predominant construction type is wood frame with vinyl siding and ignition resistant roofs. Many properties feature flammable decks, stairs, fences, and other projections. Spacing between homes is variable but often less than 30 feet, with some outbuildings and sheds increasing ignition risk. Heating is provided by electricity, natural gas, and wood stoves.

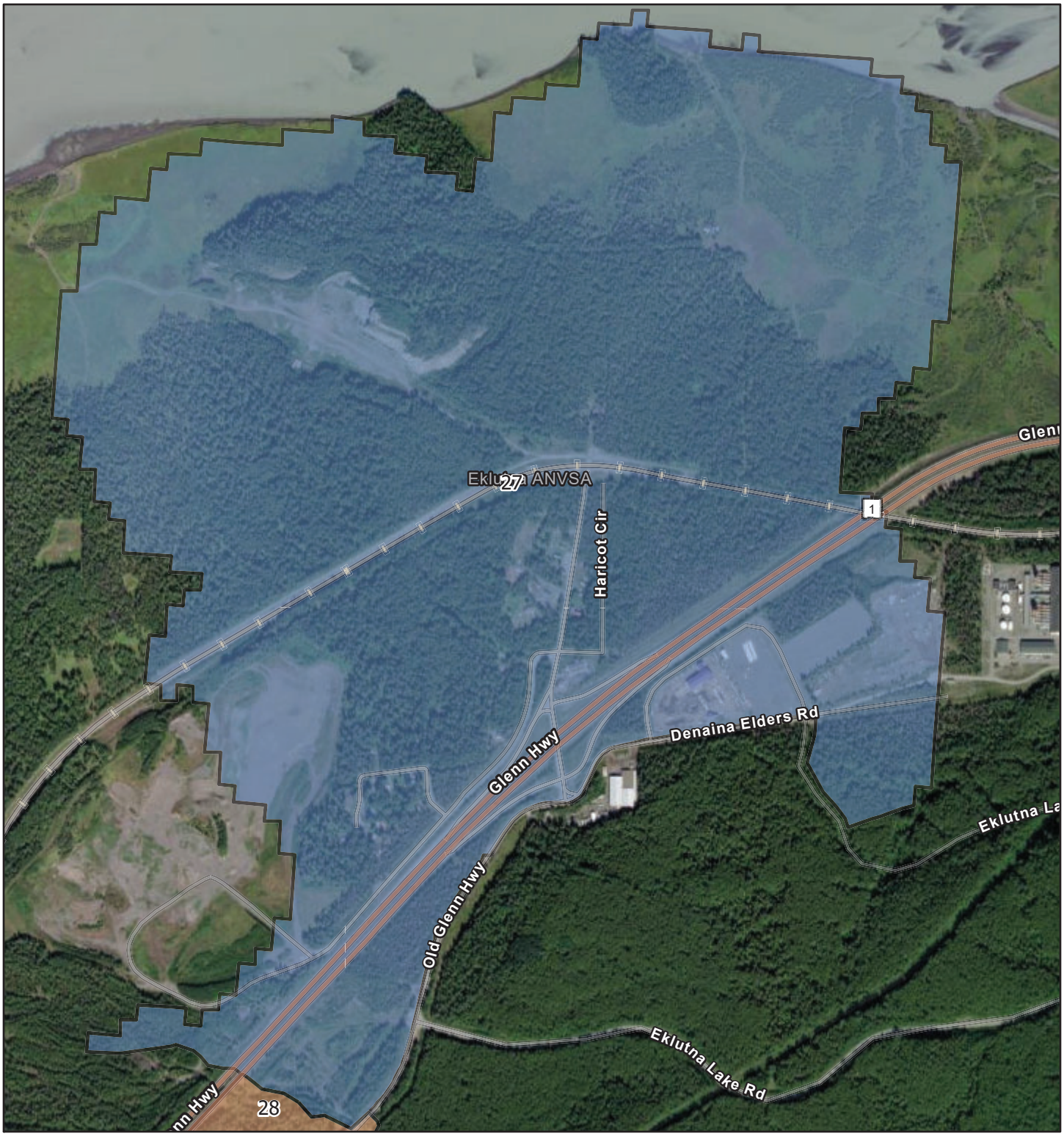
While some properties maintain defensible space, compliance is limited where hazardous fuels are present on adjacent parcels under separate ownership. Nonetheless, these individual efforts remain worthwhile, as they reduce structure ignition potential and contribute to overall neighborhood resilience.

Black spruce extends through neighborhoods, aligning with topography. Although patches of dead spruce have been removed from some access roads, fuels remain continuous and highly susceptible to fire spread. This heavy spruce component and frequent high winds increase the chances of a large, wind-driven wildfire.

Primary access roads are 20–40 feet wide, paved, adequately marked, and mostly clear of vegetation with more than 5 feet of clearance. However, residential streets within neighborhoods can be narrow, crowded with vehicles, and often dead-end in cul-de-sacs or limited turnarounds for apparatus. Evacuation challenges are heightened by the fact that some neighborhoods terminate in dead ends and are interwoven with dense fuels, making rapid evacuation difficult.

Electric utilities are distributed through elevated lines on wooden power poles adjacent to dense fuels. Minimal hydrants are available within the SPU. In areas without hydrants, water for firefighting will be delivered by water tenders.

# SPU 27: Eklutna Village



# Appendix A – SPU Ignitability Analysis

## SPU 27: Eklutna Village


The Eklutna Village SPU consists mostly of the Native Village of Eklutna, which "is the only continuously inhabited original Dena'ina village within the Municipality of Anchorage… is home to over 500 who are either Eklutna, Inc. Shareholders or Native Village of Eklutna."[1] It is situated along the Knik Arm shoreline with residential areas intermixed with cultural sites, community buildings, and natural fuel beds.

Housing is primarily single-family, with a mix of older and newer construction. The predominant building type is wood frame with ignition resistant roofs. Many properties feature flammable decks, fences, stairs, and other projections. Spacing between homes varies from 20 to 50 feet, with some outbuildings increasing fire exposure potential. Heating sources are electricity, natural gas, and wood stoves.

While some properties maintain defensible space, compliance is limited where hazardous fuels are present on adjacent parcels under separate ownership. Nonetheless, these individual efforts remain worthwhile, as they reduce structure ignition potential and contribute to overall neighborhood resilience. Vegetative fuels in and around the community are boreal forest, dominated by black spruce with interspersed hardwoods. Fuels remain largely continuous across the landscape and are aligned with topography and wind in certain conditions. Riparian vegetation along streams contributes to fuel continuity into developed areas.

Primary access roads are paved, adequately marked, and greater than 20 feet wide. However, residential side streets may be narrow and dead end, providing limited turnaround space for apparatus. Evacuation may be complicated by limited road redundancy and the presence of cultural sites, where populations gather for events. Side street signage is variably maintained, with some address markers obscured by vegetation.

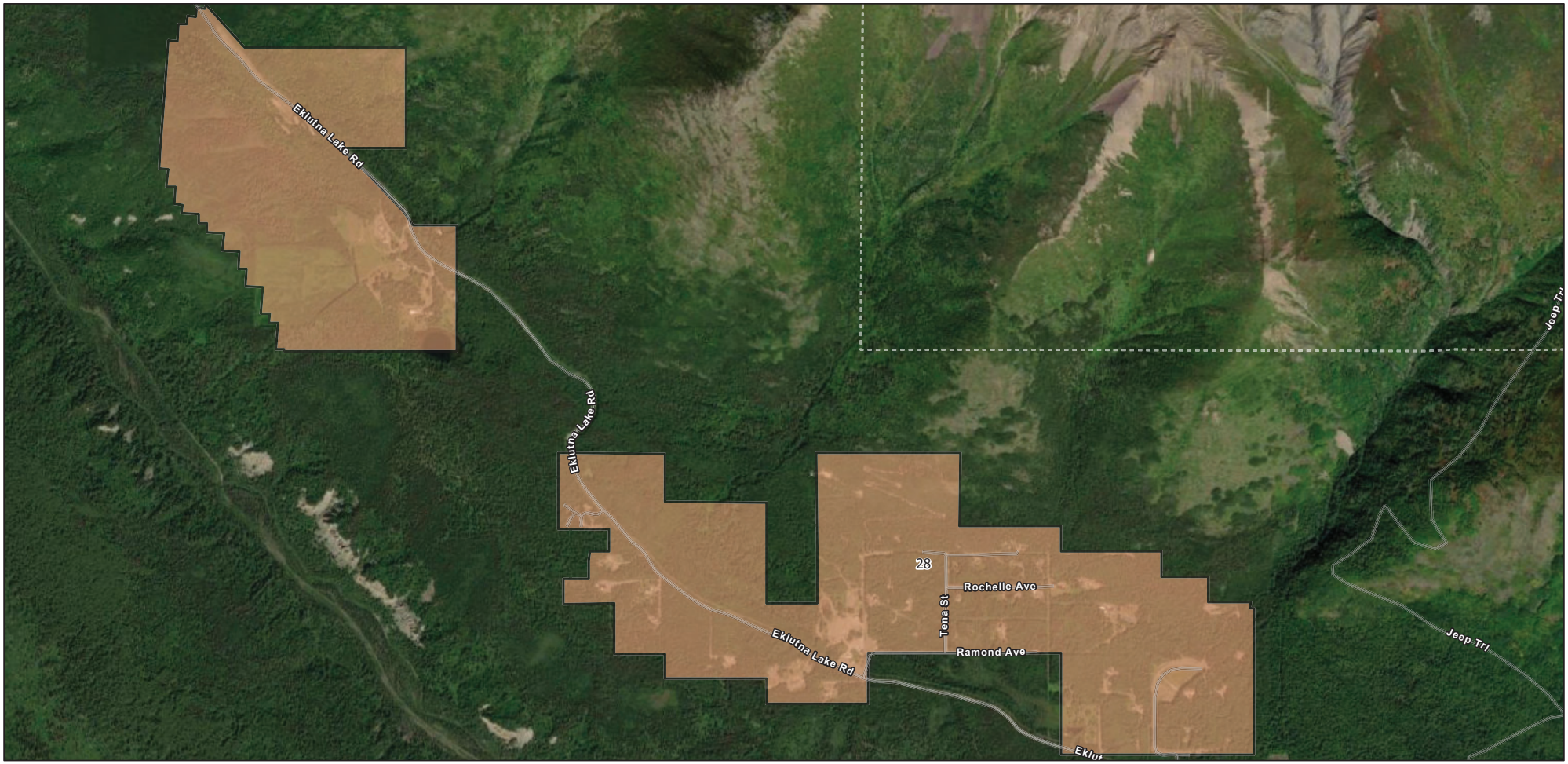
Electric utilities are distributed through elevated lines on wooden poles adjacent to dense fuels. This SPU is not equipped with hydrants, so water for firefighting will be delivered by water tenders.



[1] https://eklutna-nsn.gov/departments/housing/

# SPU 28: Eklutna Lake Map 1 of 2

# SPU 28: Eklutna Lake Map 2 of 2



# Appendix A – SPU Ignitability Analysis

## SPU 28: Eklutna Lake


The Eklutna Lake SPU consists of widely dispersed neighborhoods along Eklutna Road, a narrow and winding single egress route. In the event of wildfire, this road could be compromised, trapping residents and visitors. The area is heavily forested and characterized by continuous fuels extending from the river and lakeshore into steep mountainous terrain. Campgrounds exist and can present evacuation challenges along with potential ignitions.

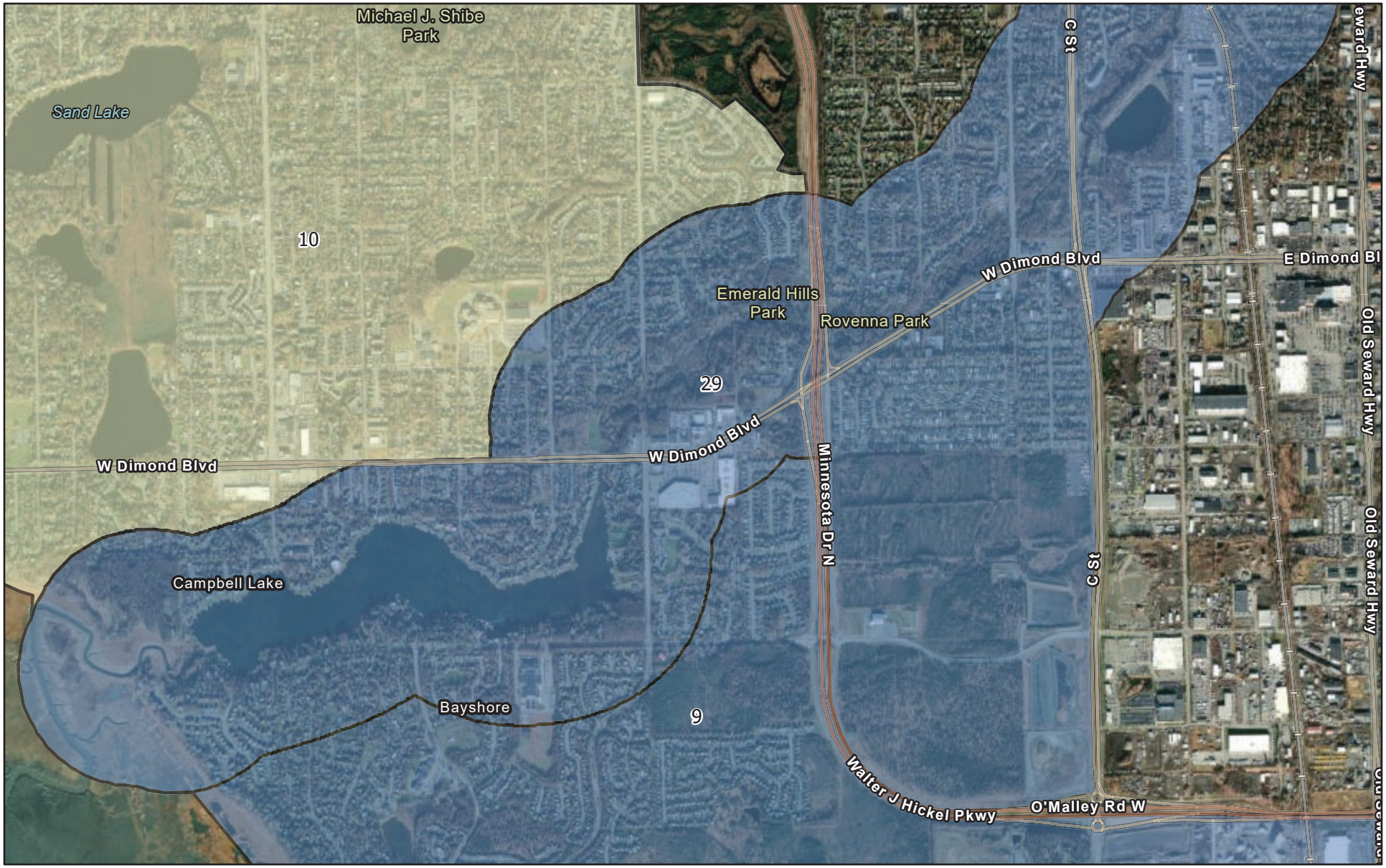
Homes are single-family residences and recreational cabins, built from the 1970s to the present. Building materials are wood, with flammable decks, stairs, and projections common throughout. Roof materials are variable, with some homes featuring metal and others shake. Spacing between structures is generally greater than 50 feet, although many parcels contain sheds, fuel storage, or outbuildings. Heating is through electricity, gas (including propane), and wood stoves.

While some properties maintain defensible space, compliance is limited where hazardous fuels are present on adjacent parcels under separate ownership. Nonetheless, these individual efforts remain worthwhile, as they reduce structure ignition potential and contribute to overall neighborhood resilience. Wood piles, propane tanks, and fuel storage are frequently located near homes, increasing ignition potential.

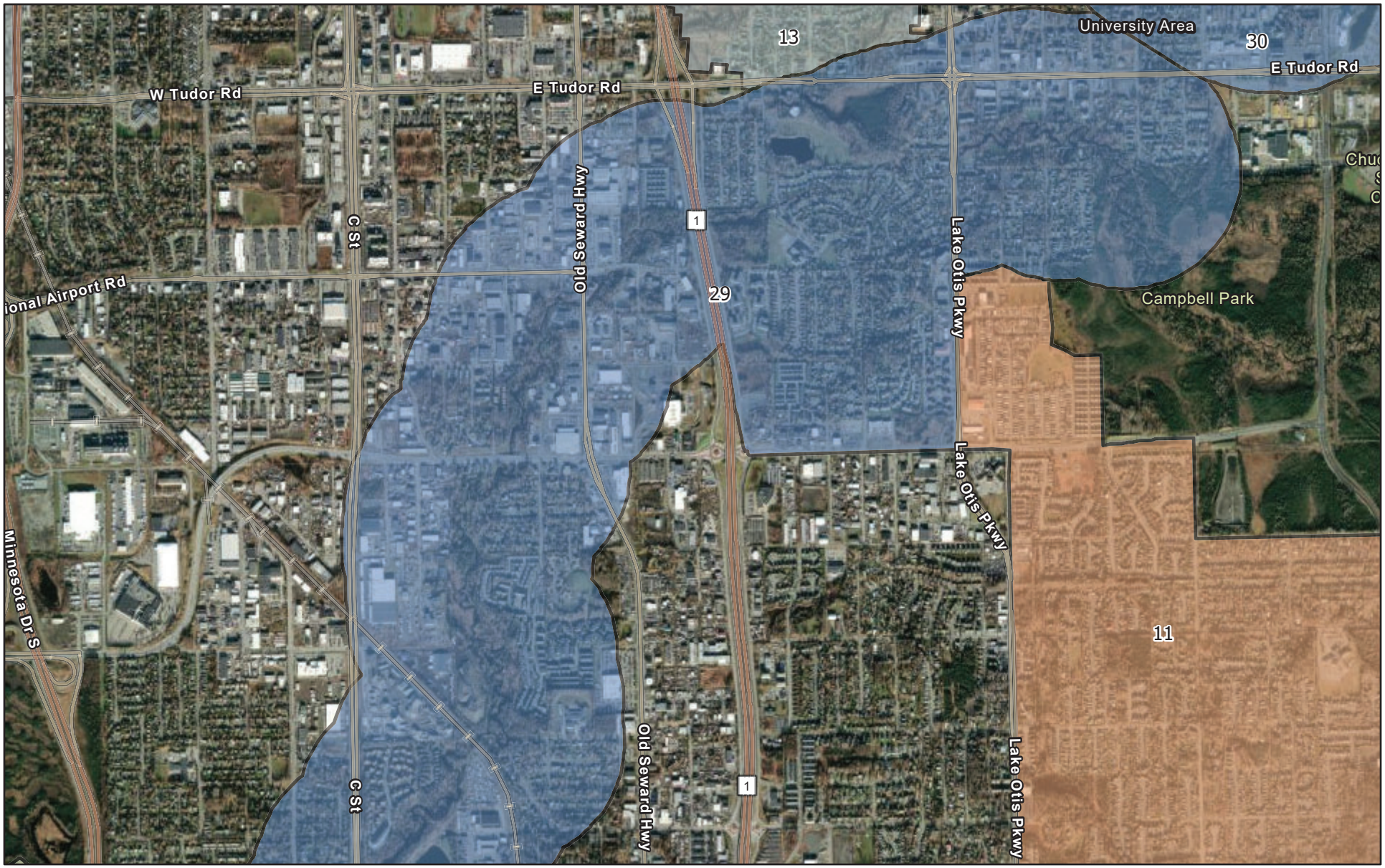
Vegetative fuels are dense, with black spruce dominating much of the landscape and forming continuous fuel beds from valley bottoms to alpine areas. The combination of heavy fuels and steep slopes creates potential for rapid fire spread. Homes are situated in drainages and along steep slopes adjacent to continuous fuel, increasing exposure to fast-moving fire behavior.

Side street signage is limited, and address markers are inconsistent or missing. Utilities are minimal, with some homes relying on off-grid power systems. There are no hydrants in this SPU. Water supply for firefighting will need to be drafted directly from Eklutna Lake or transported by water tenders, though accessibility may be challenging.

# SPU 29: Campbell Creek Map 1 of 2



# SPU 29: Campbell Creek Map 2 of 2




N

# Appendix A – SPU Ignitability Analysis

## SPU 29: Campbell Creek


The Campbell Creek SPU is a dense urban neighborhood network that surrounds Campbell Creek, a heavily vegetated corridor that runs northeast to southwest through the Anchorage Bowl. While surrounded by built urban environment, this SPU has direct connections to continuous wildland fuels through the creek corridor. These fuels include dense riparian brush, black spruce clusters, and accumulations of dead woody material.

Wildfire ignitions in this SPU have been linked to illegal campfires and unauthorized campsite activity occurring within dense, overgrown fuels. The greenbelt is a known congregation point for transient individuals, resulting in ongoing public safety concerns and an elevated ignition risk requiring continued monitoring and enforcement presence.

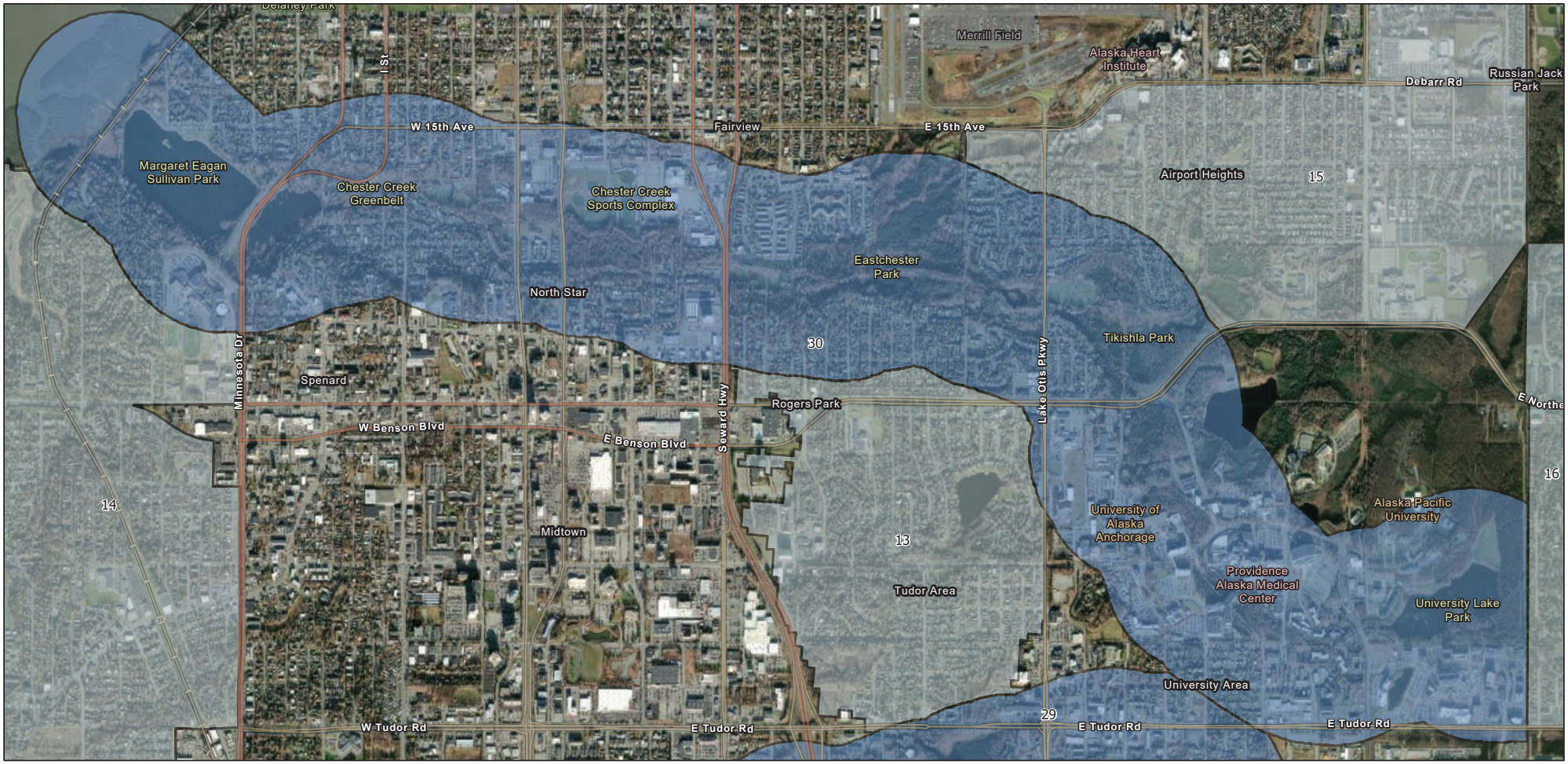
Roads are paved, wide, and adequately marked, but neighborhoods include many cul-de-sacs and dead ends, limiting apparatus maneuverability.

Housing construction ranges from the 1950's through the present and is made of both single-family and multi-family residences. Wood frame construction with vinyl siding and ignition resistant roofs are predominant. Many structures include flammable decks, balconies, and projections. Spacing between homes ranges from less than 20 feet to 40 feet. Heating is provided by electricity and natural gas.

While some properties maintain defensible space, compliance is limited where hazardous fuels are present on adjacent parcels under separate ownership. Nonetheless, these individual efforts remain worthwhile, as they reduce structure ignition potential and contribute to overall neighborhood resilience.

Utilities are distributed through elevated power lines. Hydrants, serviced by AWWU, are available and adequately spaced for the entirety of the SPU.

# SPU 30: Chester Creek



# Appendix A – SPU Ignitability Analysis

## SPU 30: Chester Creek


The Chester Creek SPU is a dense urban neighborhood network that surrounds Chester Creek, a heavily vegetated corridor that runs east-west through the Anchorage Bowl. While surrounded by built urban environment, this SPU has direct connections to continuous wildland fuels through the creek corridor. These fuels include dense riparian brush, black spruce clusters, and accumulation of dead woody material.

Wildfire ignitions in this SPU have been linked to illegal campfires and unauthorized campsite activity occurring within dense, overgrown fuels. The greenbelt is a known congregation point for transient individuals, resulting in ongoing public safety concerns and an elevated ignition risk requiring continued monitoring and enforcement presence.

Roads are paved, wide, and adequately marked, but neighborhoods include many cul-de-sacs and dead ends, limiting apparatus maneuverability.

Housing construction ranges from the 1950's through the present and is made of both single-family and multifamily residences. Wood frame construction with vinyl siding and ignition resistant roofs are predominant. Many structures include flammable decks, balconies, and projections. Spacing between homes ranges from less than 20 feet  to 40 feet. Heating is provided by electricity and natural gas.

While some properties maintain defensible space, compliance is limited where hazardous fuels are present on adjacent parcels under separate ownership. Nonetheless, these individual efforts remain worthwhile, as they reduce structure ignition potential and contribute to overall neighborhood resilience.

Utilities are distributed through elevated power lines. Hydrants, serviced by AWWU, are available and adequately spaced for the entirety of the SPU.

# Community WIldfire Protection Plan

# Municipality of Anchorage

## Appendix B: Resident Handbook

# Appendix B – Resident Handbook

## TABLE OF CONTENTS

# Appendix B – Resident Handbook

## INTRODUCTION

Appendix B was designed as a handbook for MOA residents. It follows the Ready, Set, Go![1] framework, Alaska's wildfire preparedness program that helps residents and communities understand what actions to take before and during a fire.

The Ready section focuses on steps residents can take today to strengthen their safety and resilience. While municipal leadership works to accomplish large goals that promote life safety, every resident has a role to play. Acting now will result in being prepared well ahead of any emergency.

The key points below introduce topics that are explained in greater detail throughout this handbook. For the most current information and resources, visit AFD's Wildfire Division website, wildfire.muni.org.

### Ready: Be Prepared

**Long before the emergency of a wildfire, prepare yourself and your property.**

- Sign up for emergency alerts
- Create an emergency action plan and make sure your family and guests know what to do
- Assemble emergency supplies and create a "go bag"
- Create defensible space around your home
- Harden your house using/retrofitting with fire-safe materials
- Plan primary and secondary escape routes from your home and neighborhood

### Set: Be Alert

**A wildfire has been announced. Now is the time to be vigilant.**

- Review your emergency action plan
- Monitor the latest news on the fire: akfireinfo.com, social media (AFD, AK-DOF)
- Grab your "go kit" and load up
- Consider relocating to a shelter outside the affected area
- If there is time, shut off ignition sources such as propane and natural gas
- Turn exterior lights on and close all windows and doors
- Park your car outside, facing the road

### Go: Act Now

**Evacuate NOW.**

- Execute your emergency action plan
- Leave early to prevent becoming a hazard to responders
- Continue to monitor the latest news: akfireinfo.com, social media (AFD, AK-DOF)

[1] https://www.muni.org/Departments/Fire/Wildfire/Pages/ReadySetGo.aspx

# Appendix B – Resident Handbook

# READY

There are many things MOA residents can do today to prepare for a wildfire. Please note that this is not a comprehensive list of activities. Remember, progress begins with action. Residents should tackle what they can, and team up with friends and neighbors for bigger tasks. Every item completed is a win for each residence and for the community. Start small. Keep going. It all counts.

## Sign up for Emergency Alerts

At the time of this document's publication, the municipality uses Smart911, also known as RAVE (the parent company of Smart911). This free service takes only a few minutes to sign up for, and residents can customize what alerts they will receive.

## Create an Emergency Action Plan

A printable form is available on the AFD website. Residents should compile a list of important phone numbers and keep a written copy in case a phone malfunctions or loses power. They should drive around the neighborhood to become familiar with the number and layout of potential evacuation routes. It is important to identify and write down the locations for utility shut offs on the property. Residents are encouraged to review their emergency action plan with those they live with and with visitors.

## Assemble a Go Bag

Residents should prepare an emergency "go" bag for every person in their household, including pets. This bag centralizes the supplies needed for evacuation and survival. Items to consider include important papers, water, food, clothing, charging cords, and a first aid kit. Additional recommendations are available on the internet, including the MOA Office of Emergency Management website.

## Understand Fire Danger

Fire danger signs are posted throughout the Municipality, at fire stations and other high-visibility areas. It is important to understand what each fire danger level means and what actions should be taken by residents at each level.

Fire danger is updated every morning and throughout the day on municipal websites and signs. The municipality uses the Canadian Forest Fire Danger Rating System (CFFDRS) to determine how likely wildfires are to start and spread. This system measures weather, wind, fuel dryness, and fire history to understand current wildfire conditions. CFFDRS is used in Alaska because it performs best in northern climates and boreal fuel types, including black spruce. This system helps fire managers make informed decisions on wildfire preparedness and response.

Daily burn approval is posted alongside fire danger information. A recording is also available on the AFD burn hotline (267-5020). Aside from fire danger, variables such as air quality index,

wind speed, and suppression resource availability, are weighed to determine burn approval. It is important to review the burn approval status prior to lighting any recreational or cooking fire[2].

The following practices are **always** illegal within the MOA:

- Use of burn barrels
- Burning of trash, construction materials, or debris (such as grass or leaves)
- Use of fireworks
- On municipal park lands, any open fires outside an approved fire pit or barbeque

**Fire Danger Level Meanings**

| | |
|---|---|
| **Low (green)** | Wildfires are unlikely to start and usually easy to control. Ground-based fires and portable fireplaces are typically authorized. Standard safety precautions should be taken. |
| **Moderate (blue)** | Wildfires can start but are usually easy to control. Ground-based fires and portable fireplaces are typically authorized. Standard safety precautions should be taken. |
| **High (yellow)** | Fires are likely and can spread quickly, especially in dry grass, brush, or forest litter. Ground-based fires are usually not authorized, but portable outdoor fireplace use is typically still permitted. |
| **Very High (orange)** | Wildfires can start easily, spread rapidly, and may be difficult to control even with quick response. Ground-based fires and portable outdoor fireplaces are not authorized. Exercise extreme caution with spark- and heat-producing equipment. |
| **Extreme (red)** | Fires can ignite instantly and move very quickly. Fire behavior may be unpredictable and severe. Ground-based fires and portable fireplaces are not authorized. Postpone spark-producing work when possible; even small ignition sources can start a dangerous wildfire. |



## Create Defensible Space & Harden Structures

Creating defensible space is the most impactful way that residents can contribute to personal and community wildfire resilience. Efforts also create a safer, more defensible environment for firefighters to operate in. AFD does not have the authority to enforce hazard mitigation work on private property. Therefore, it is incumbent upon every resident to do their part. This can be challenging when fuels are present on adjacent parcels under separate ownership. Nonetheless, individual efforts remain worthwhile, as they reduce structure ignition potential and contribute to overall neighborhood resilience.

[2] https://www.muni.org/Departments/Fire/Wildfire/Pages/Wildfire%20Home.aspx

# Appendix B – Resident Handbook

As defined by the National Wildfire Coordinating Group, The Home Ignition Zone (HIZ) is the home and the area within approximately 100 feet surrounding the structure, encompassing vegetation, landscaping, and other fuels that could contribute to ignition during a wildfire.[16] In neighborhoods where HIZs overlap, or when certain tasks prove too difficult for individual residents, cooperative participation and neighbor to neighbor communication in fuels reduction becomes essential. CWPP Community survey responses reflected that while some residents are unable to complete defensible space work due to physical or financial limitations, others are discouraged by adjacent properties that remain untreated, underscoring the importance of collective participation. Working together to maintain shared defensible space not only reduces wildfire risk but also strengthens neighborhood connections. These bonds become invaluable during a wildfire event. See *Appendix E: Community Engagement* for more information about the survey.

Varying definitions of defensible space zones can be found on the internet. This document adheres to the Firewise standards, established by the National Fire Protection Agency (NFPA):

- **Immediate Zone (Zone 0):** 0 to 5 feet from the furthest attached exterior point of the home
- **Intermediate Zone (Zone 1):** from 5 to 30 feet of structures
- **Extended Zone (Zone 2):** 30 to 100 feet
- **Zone 3:** greater than 100 feet[3]

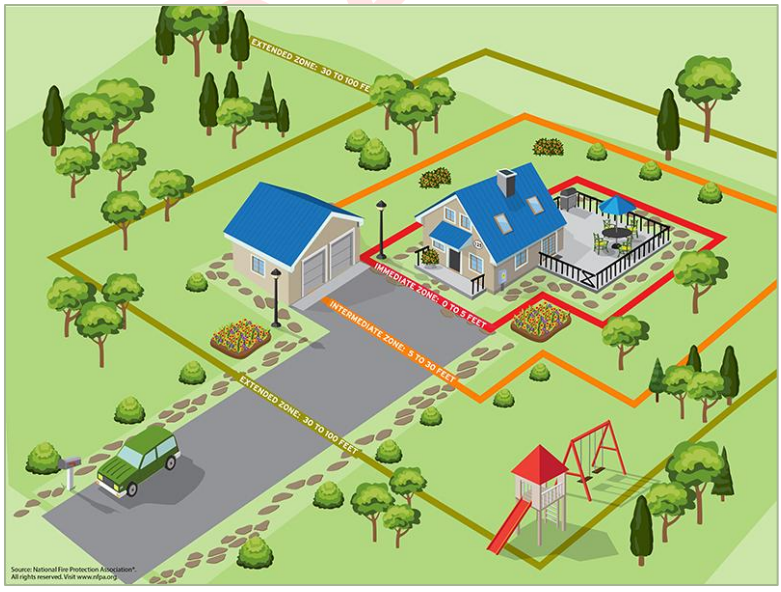



**Figure 2 - The Home Ignition Zone[4]**

[3] https://www.nfpa.org/education-and-research/wildfire/preparing-homes-for-wildfire
[4] https://www.nfpa.org/education-and-research/wildfire/preparing-homes-for-wildfire

# Appendix B – Resident Handbook

While the actions in each zone described below are useful references, they should be considered guidelines as effective treatment distances may vary depending on topographic position and other factors. The Anchorage Fire Department, Chugiak Volunteer Fire Department, and Girdwood Fire and Rescue Department offer free property assessments to residents. A request form is available on AFD's website; experts from the appropriate agency will walk your property with you to provide customized guidance.

**Immediate Zone (0 to 5 feet)**

Science shows this is the most important zone to take immediate action on as it is the most vulnerable to embers. Start with the house itself then move into the landscaping section of the Immediate Zone.

- Clean roofs and gutters of moss, dead leaves, debris and pine needles that could catch embers.
- Cap your chimney with a spark arrestor.
- Replace or repair any loose or missing shingles or roof tiles to prevent ember penetration.
- Reduce space for ember entry by installing 1/8-inch metal mesh screening in eave and attic vents.
- Repair or replace damaged or loose window screens and any broken windows
- Move any flammable material away from the exterior walls. Examples include mulch, flammable plants, leaves and needles, and firewood piles.
- Remove all combustible items from deck surfaces and underneath decking and stairs
- Edge the home with gravel or small plants and flowers that are resistant to fire.

**Intermediate Zone (5 to 30 feet)**

- Create a 10-foot clearance around any fuel (diesel, propane) tanks and modify the cribbing with non-combustible material.
- Keep lawns well-watered and mow to a height of three inches or less.
- Prune limbs of any mature conifer trees to at least 6 to 8 feet from the ground.
- Thin coniferous trees to a minimum of 15 feet between crowns.
- Remove shrubs from underneath trees.
- Remove all dry or dead vegetation.
- Trim tree branches to ensure that there is at least a 15-foot clearance between your chimney and other branches.
- Trees and shrubs in this zone should be limited to small clusters of a few each to break up the continuity of the vegetation across the landscape.
- Dispose of flammable debris on your property (examples: old lumber/pallets/scrap wood).

**Extended Zone (30 – 100 feet)**

- Thin conifers so they are at least 10-15 feet apart.
- Thin black spruce clusters. Each cluster should be less than 10 feet in diameter, *or* the distance between clusters should be 15 feet or more.
- Trim limbs of any mature conifers to at least 6 to 8 feet from the ground.
- Remove shrubs from underneath trees.
- Remove all dry or dead vegetation.
- Remove vegetation adjacent to storage sheds or other outbuildings.
- Move firewood stacks so they are at least 30 feet from your home and make sure there is a 10-foot clearance around them.
- Do not stack firewood underneath trees or on the downhill side of your property.

**General or Multi-Zone Recommendations**

- Place reflective numbers that are at least 4 inches high on your house and/or at the end of your driveway.
- Clean vegetation alongside your driveway or along the road edge to protect your means of evacuation.
- Keep storage areas (sheds, garages, etc.) clean; do not accumulate combustibles such as oily rags and newspapers.
- Ensure your driveway is at least 12 feet wide with a turnaround to aid emergency vehicle access.

**Tree Health Best Practices**

Balancing tree health with the creation of defensible space can be challenging, as no single document can address the unique characteristics of every property. The following represent general best practices; additional guidance is available at treesaregood.org/treeowner.

- Do not remove more than 1/3 of the live foliage from a tree during the growing season.
- Needle-bearing trees, such as spruce trees, should be pruned during the fall or winter.
- Leaf-bearing trees, such as birch trees, can be pruned at any time.
- Pruning cuts should preserve the branch collar; do not cut flush to the tree trunk.

Regularly water trees from spring through fall, especially during dry periods, to help them stay healthy and resilient against insects and disease. Because tree roots extend deeper into the soil than grass roots, they require more water than a typical lawn. Deep, infrequent watering is best; let a hose or sprinkler run longer, so moisture reaches the root zone. This promotes stronger, healthier trees better able to withstand stress.

# Appendix B – Resident Handbook

**Notifying AFD**

The Anchorage Fire Department actively collects information about properties that have established defensible space through its Firewise program. This information serves multiple purposes: it helps the department measure the effectiveness of its Firewise property assessment program, identify areas where additional outreach may be needed, and support operational planning during wildfire incidents.

Knowing which properties maintain defensible space provides valuable situational awareness for firefighters, allowing them to identify potential locations to anchor or hold a fire. All data is stored on an internal, secure mapping system that is not accessible to the public or external agencies.

Residents can report their property as having defensible space by completing a short form on the AFD Wildfire Division website at wildfire.muni.org. A firefighter will follow up to confirm the property's defensible space and recognize the resident for their efforts.

**Ignition-Resistant Landscaping**

Ignition-resistant landscaping generally includes widely spaced trees, low-fuel volume shrubs, and herbaceous groundcover. In areas where it is practical and desirable, replanting with fire-wise species and implementing proper planting practices will provide the following benefits:

- Reduce fire risk by limiting the ability of invasive and flammable species to return.
- Protect bare soil from erosion.
- Promote natural beauty and ecological stability without sacrificing adequate wildland fire protection.

# Appendix B – Resident Handbook

## Structural Hardening Recommendations

NEW DEVELOPMENT

The best time to reduce the ignitibility of a home is before it is built. Questions to ask during the planning phase of new construction should include:

- Can the adjacent fuels be modified to create adequate defensible space for homes before they are constructed considering the fuel type and topography?
- Will complex architectural design or flammable materials trap heat and embers?
- Are the road widths, grades and surfaces adequate for safe operation of emergency vehicles and evacuation of residents?
- Does the design of roads and driveways include adequate pullouts, turnarounds, and more than one means for access/egress?
- Is water supply for fire suppression accessible and adequate?
- Are streets and home addresses visibly marked with consistent, reflective signage?

EXISTING COMMUNITIES

For homes already built, there are important steps that should be taken to improve the chances of survival.

Construction materials are rated for relative fire resistance using the *Flame Spread Index*, which is the measurement of how fast and far flames spread over specific materials. The lower the number, the better. Materials with a flame spread rating of 0-25 are classified as Class A, materials with a rating of 26-75 are classified as Class B, and materials with a rating of 76-200 are classified as Class C.

The role of embers in structure loss cannot be overstated. Embers are generated by burning materials and lofted by wind and convective heat ahead of the main fire front. Structures are vulnerable to ember penetration in numerous ways. Some of the more common locations are discussed below.

**Roof:** The roof of a structure has a significant impact on its ignitability and the likelihood of house-to-house fire spread. Class A roofing materials such as asphalt shingle, metal, and terracotta tile are considered the most resistant to embers and firebrands. Residents should avoid using any functional or decorative wood shingle, tar paper, untreated OSB, or other flammable roofing material for repair or replacement.

**Decks:** The shape and location of decks and outdoor stairs make them excellent traps for heat and embers. Nothing flammable should ever be stored under decks or projections.

Residents should opt for fire-resistant decking materials. In addition to reducing fire hazards, the materials listed below usually require much less maintenance than wood. The best design is

to enclose the deck completely to create a solid form. The following is a list of fire resistant and commonly available decking materials.

- **Composite Materials** – Composite deck materials are made of wood and plastic fibers and vary widely in the level of fire resistance. Look for composite deck products that have Class A or Class B ratings.
- **Treated Wood** - Wood treated with fire retardant chemicals can receive a Class A rating. High UV and weather exposure can cause the chemical treatment to leach away over time, reducing fire resistance to that of a traditional wood deck.
- **Aerated Concrete** – While not commonly used for decks, aerated concrete blocks made of aluminum and concrete are half the weight of traditional concrete blocks and can be cut with a handsaw. This material is non-combustible and has robust insulation properties. This material looks like traditional concrete blocks and cannot imitate the look of wood like modern composites.

**Windows:** Windows can quickly fail when exposed to the radiant heat of a wildfire, creating a direct path for embers and heat to enter the home and ignite the inside. While newer homes are built with more heat-resistant windows, single-pane windows are found in most older homes. Residents should replace single-pane windows with double-pane versions and should consider double-glazing for added resistance.

**Vents:** Vents are another location where embers can enter the structure. Vents should be covered with a non-combustible mesh with openings 1/8”. Any open eaves should be enclosed with a flat soffit or mesh to prevent them from becoming a trap for heat and embers.

**Propane and Fuel Oil Tanks:** Above-ground propane tanks should be installed at least 30 feet from the home. A 10-foot buffer down to mineral soil in all directions surrounding propane and fuel oil tanks should be established and maintained. All flammable vegetation should be removed from within 20 feet of tanks, lines, and meters.

**Fencing:** Fences can act as horizontal fuel pathways leading fire directly to structures. Wood fences and privacy screens commonly ignite from embers or radiant heat and can carry flames to structures. When possible, install non-combustible fencing materials (metal, masonry, composite rated for fire resistance) for the first 5 feet connected to the home. If a wood fence exists, adding a non-combustible break section (metal gate, steel post, or masonry pillar) where it connects to the home greatly reduces the risk of fire transmission. Keep vegetation trimmed away from fences and ensure flammable material does not accumulate along the fence line.

**Sheds & Outbuildings:** Accessory structures such as sheds, workshops, and storage buildings can ignite and transfer fire to the main residence if located too close. Embers commonly accumulate around shed perimeters, beneath overhangs, and near stored fuels and equipment. Maintain a minimum 30-foot separation between outbuildings and the home whenever feasible. Apply defensible space and home hardening standards to sheds; especially vent

screens, roof cleanliness, and vegetation management. Avoid storing items (gas cans, lumber, propane, ATV/boat fuel) directly beside structures. For elevated sheds, install metal flashing or ember-resistant screening around the base to prevent embers from blowing underneath and igniting debris or combustible flooring. Hardening sheds is especially important in neighborhoods where lot size or topography does not allow for 30-foot separation.

**Exterior Sprinklers:** While exterior sprinklers should never replace fuels reduction, ember-resistant construction, or evacuation planning, Exterior sprinkler systems can provide short-term protection during ember storms and heat exposure by increasing humidity and wetting surfaces. They may delay ignition long enough for the fire front to pass, particularly when paired with defensible space. Sprinklers require a reliable water source, adequate pressure, proper installation and positioning, and must be activated before a wildfire arrives to be effective.

**Water supply:** A reliable water supply enhances the ability of firefighters to protect homes and property. For properties that rely on well systems, ensure electrical power remains on during evacuation so pumps can continue to function, and water remains available for firefighting efforts. If backup power systems are installed, verify they are operational and have adequate fuel. Rainwater catchment systems can also support preparedness. Positioning external water tanks or drums beneath gutter outlets offers an inexpensive way to collect supplemental water for emergency use. They should be kept clear of flammable vegetation and fitted with secure lids to prevent debris accumulation and clearly marked. Ensure that hose bibs are accessible and functional. Home water systems should not be relied upon to fight an active wildfire front, but having emergency water capacity supports rapid response to ember ignitions, protects structures, and increases community resilience in areas without municipal hydrants.

# SET

At the **SET** stage, conditions are worsening, and fire activity may be nearby. Residents should be fully prepared to evacuate quickly if an official notice is issued. Fire crews may already be operating in the area, and access routes can close or become restricted with little warning. This is the time to act, not to wait. Residents should focus on preparation, awareness, and early action to protect themselves, their families, and their animals.

## Stay Informed and Ready

- Keep your phone charged and ringer on; stay tuned for potential GO (Evacuate Now) notices.
- Follow fire updates from an official social media channel or the Alaska Interagency Coordination Center (AICC).
- Track Active Wildfire Incidents with AK Fire Info https://akfireinfo.com/
- Monitor official alerts through the Municipality of Anchorage Office of Emergency Management (muni.org/Departments/OEM), radio, and local news.

# Appendix B – Resident Handbook

## Pack and Prepare

At this stage, Go Kits should be fully assembled and ready to load into your vehicle. Include essential documents, medications, first-aid supplies, chargers, and cash, along with enough food, water, and clothing to last for several days. Back up important records and photos digitally to secure cloud storage or a flash drive. Residents should prepare their vehicles by keeping them fueled, parked facing out, and ready for immediate departure. Keys should be placed in an accessible location, and irreplaceable items should be pre-loaded into the vehicle.

## Home and Property Readiness

Residents should remove flammable materials such as patio furniture, doormats, and firewood from within 30 feet of structures. They should close all windows, doors, and vents, and draw non-flammable blinds or curtains to reduce heat exposure. Residents should also attach hoses to outdoor spigots, confirm water sources are accessible, and move vehicles, ATVs, and fuel cans away from structures. Gates should be left unlocked, and nothing should obstruct address markers (e.g. vehicles, branches, decorative ornaments). Leave exterior lights on to improve visibility for responders.

## Pets and Small Animals

Pet-friendly evacuation shelters or friends and family should be identified, and pets should be prepared for a quick and safe evacuation. Collars, ID tags, and microchip information should be current. Collars should be placed on the animal(s); carriers, leashes, and crates should be near the home's exit, along with food, water, medications, bowls, litter, and vaccination records. Pets should be kept indoors or secured so they can be quickly located and loaded when it's time to leave.

## Large Animals and Livestock

Relocation of horses, livestock, or other large animals should begin early. Waiting for a mandatory evacuation notice may result in an inability to safely evacuate them. Prepare trailers by checking tires, lights, and hitch equipment, and ensuring tow vehicles are fueled and ready. Identify multiple evacuation routes and safe destinations such as fairgrounds, rodeo arenas, or friends' properties outside the danger zone. Halters, gates, and pens should be labeled with contact information in case animals must be released as a last resort. Maintain feed and water in secure locations in case animals must be temporarily sheltered in place.

## Safety and Coordination

Dress for safety in long sleeves, long pants, and sturdy boots made of natural fiber like cotton or wool. Residents should review the safety action and communication plan they created during the READY stage to ensure that all parties know how to check in and where to meet if separated. Neighbors should communicate with each other to promote awareness of the emergency and aid in the evacuation of those who may experience challenges, such as the

elderly, disabled, or those lacking transportation. Unnecessary travel on narrow or limited-access roads should be avoided, so they remain clear for emergency vehicles and evacuees.

SET means you are packed, prepared, and ready to leave at a moment's notice. This is the final opportunity to act before evacuation orders are issued. Taking these steps now protects your household and provides first responders with the best chance to defend your neighborhood safely.

# Go!

Wildfires are dynamic emergencies. They can move quickly, sometimes leaving little time to react. Being prepared reduces confusion, reduces the risk of injury, keeps families and pets safer, and allows emergency responders to focus on protecting the community instead of rescuing those who waited too long to leave. **If a resident is concerned about having enough time to evacuate or believes they should leave an area, they should prioritize their safety and evacuate.**

## Evacuation Notification

Generally, public alerts and warning systems are the most critical components of emergency response. It provides accurate and timely public information that is essential in providing direction and gaining cooperation in response to a wildfire incident.

- **Smart911/RAVE:** Referenced in the *Ready* section of this document, this system is the primary source of real-time information during a wildfire incident. Cell phone users will receive timely updates to include fire movement, shelter sites, and evacuation routes/road closures.
- **IPAWS:** The Municipality uses the Integrated Public Alert and Warning System (IPAWS) to inform community members of evacuation status during critical incidents. IPAWS is generally used when an area is moved to the GO stage, serving as the final public warning to evacuate. However, there are many variables, and a GO status may not always be relayed through this system. Residents should not rely on it as their *primary* source of information. Instead, they are encouraged to register for Smart911 to receive earlier and more detailed alerts.
- **Other Sources:** The Public Information Officer for the incident will coordinate with news agencies and other departments to amplify emergency messaging. Sources such as akfireinfo.com and local news (radio and television) will supplement the emergency alerting systems.

## Evacuation Rights and Statutes

# Appendix B – Resident Handbook

In Alaska, firefighters, law enforcement officers, and other public safety officials have the authority to issue evacuation instructions and control access to hazardous areas during a wildfire or other emergency. They may direct individuals to leave and temporarily close roads when necessary to protect life and property.

While Alaska law allows a resident to remain on their property unless a formal disaster declaration is in place, staying after being advised to evacuate is strongly discouraged and carries significant risk. Residents who choose to remain are legally required to avoid interfering with emergency operations and must accept that emergency crews may not be able to return if conditions worsen, and rescue may not be possible.

If a resident chooses not to evacuate when directed, they will be informed that:

- Emergency responders may not be able to return to assist a resident if the fire advances, and
- Residents could be held responsible if a responder is injured or killed while attempting to help them.

The risk of staying behind places residents at personal risk. It endangers firefighters and prevents them from helping others who may need rescue.

For more information about legal authority, residents are encouraged to review Alaska statutes

- **AS 18.70.500 –** Rights of a Resident of an Area Threatened by Wildfire or Natural Disaster
- **AS 18.70.075 –** Authority of Fire Department Officers; Penalty

## RESOURCES

For additional information about preparing for and acting during an emergency, the following resources are a great place to begin:

**Local Resources**

- The AFD Wildfire Division website, **wildfire.muni.org**, serves as a one-stop resource for all wildfire-related information within the Municipality of Anchorage. It is updated regularly and provides residents with a comprehensive library of materials, including the CWPP documents. Through the site, residents can request Firewise property assessments, report a Firewise property, review recreational and cooking fire guidelines, stay informed about current events, find contact information for land management questions, and much more.
- The AFD maintains active social media accounts where timely updates and wildfire information are shared. Girdwood Fire & Rescue and Chugiak Volunteer Fire Department each manage their own social media channels to provide localized updates and community-specific information for the southern and northern service areas.

  - AFD Facebook: https://www.facebook.com/AnchorageFireDept
  - AFD Instagram: https://www.instagram.com/anchoragefiredept/
  - AFD YouTube: https://www.youtube.com/@anchoragefire
- Wood lots are open to residents annually through a partnership between the AFD and MOA Solid Waste Services. Announcements are posted on the AFD website; however, residents should visit the Solid Waste Services website for complete details and operating information. https://www.muni.org/departments/sws/pages/default.aspx
- The Office of Emergency Management provides residents with information and resources for all types of emergencies, including wildfires. The OEM website includes Alaska-specific recommendations for Go Bags, preparedness guidance, and emergency updates. https://www.muni.org/departments/oem/pages/default.aspx
- Residents can sign up for Smart911 notifications online or via text. To register by text, send ANCHORAGE to 67283. To register online, visit the Smart911 registration page: https://www.smart911.com/smart911/ref/reg.action?pa=anchorageak
- **AKFireInfo.com** is Alaska's interagency wildfire information hub, jointly maintained by the Alaska Division of Forestry & Fire Protection, Bureau of Land Management Alaska Fire Service, and U.S. Forest Service. The site provides official updates on wildfire activity, fire danger ratings, burn permit suspensions, and statewide news releases. It serves as the most reliable and current source for wildfire information across Alaska.
- The Wildfire Division maintains an active YouTube program featuring educational videos on wildfire preparedness, mitigation, and community resilience. All videos were filmed in Anchorage and produced by the Wildfire Division, ensuring that the information and examples reflect local conditions. All videos are available on the Wildfire Division Playlist of the Anchorage Fire Department YouTube channel: https://www.youtube.com/@anchoragefire. Select videos related to this document are below.
  - *Spruce Beetles & Wildfire Risk – What Alaskans Need to Know:* https://youtu.be/ZIrSN4_m3zo?si=ed5w5lw0q3H3_nMI
  - *Shaded Fuel Breaks – Healthy Forests, Safer Communities, Beautiful Landscapes*: https://youtu.be/lwT-VbgFxVs?si=a1clK834ItzS-Pw-
  - *Stop Wildfire at the Door – Create Defensible Space With AFD:* https://youtu.be/aONTyBO1R2E?si=WRmQDLPwILGtvFV5
  - *Ready, Set, Go!*: https://youtu.be/-2wJNB4iJWs?si=3kyF0ElxvuTKwo9e

**Other Resources**

- Fire Resistant Building Materials for New Home Construction https://uphelp.org/guest-blog-fire-resistant-building-materials-for-new-home-construction/?print=print
- FEMA Defensible Space (Home Builder's Guide to Construction in Wildfire Zones) https://www.ready.gov/sites/default/files/2020-03/home-builder-guide-construction-defensible-space.pdf

# Appendix B – Resident Handbook

- Insurance Institute for Business & Home Safety (IBHS) Research Library. https://ibhs.org/risk-research/wildfire/
- National Fire Protection Association (NFPA) 1141, *Standard for Fire Protection Infrastructure for Land Development in Wildland, Rural, and Suburban Areas*. https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=1141
- National Fire Protection Association (NFPA) 1140 *Emergency Response and Responder Safety Document Consolidation Plan* https://www.nfpa.org/codes-and-standards/nfpa-1140-standard-development/1140.
- The Insurance Institute for Business and Home Safety (IBHS): How Home Materials Burn in an Ember Storm https://www.youtube.com/watch?v=IvbNOPSYyss
- NFPA Video: *Your Home Can Survive a Wildfire* https://www.youtube.com/watch?v=vL_syp1ZScM

Community WIldfire Protection Plan

# Municipality of Anchorage

# Appendix C: Methodology

# Appendix C - Methodology

## TABLE OF CONTENTS

# Appendix C - Methodology

# Suppression Planning Unit Hazard Rating Methodology

## Purpose

The purpose of this appendix is to provide an overview of the methodology used to determine the hazard ratings for the Suppression Planning Units (SPUs) in the CWPP and includes a brief description of the two tools principally involved – the SPU Hazard Rating (SPUHR) and the Interagency Fuel Treatment Decision Support System (IFTDSS). SPUHR is used to determine the adjective hazard rating class for each of the SPUs in the study area.

Bintel has partnered with Dr. Jen Schmidt of UAA to complete the fire behavior modeling and develop the SPUHR algorithm localized for the unique attributes of the MOA. **This analysis produces ratings and maps that aid in the placement, type, and priority of mitigation recommendations.**

IFTDSS is a product of the U.S. Forest Service Missoula Fire Sciences Laboratory.[1] IFTDSS models several aspects of predicted fire behavior and Landscape Burn Probability (LBP). The IFTDSS modeling outputs are combined with a geographic information system (GIS) spatial analysis of physical factors, such as community topography and distance to fire stations and water supplies, to generate the SPUHR scores.

## Introduction

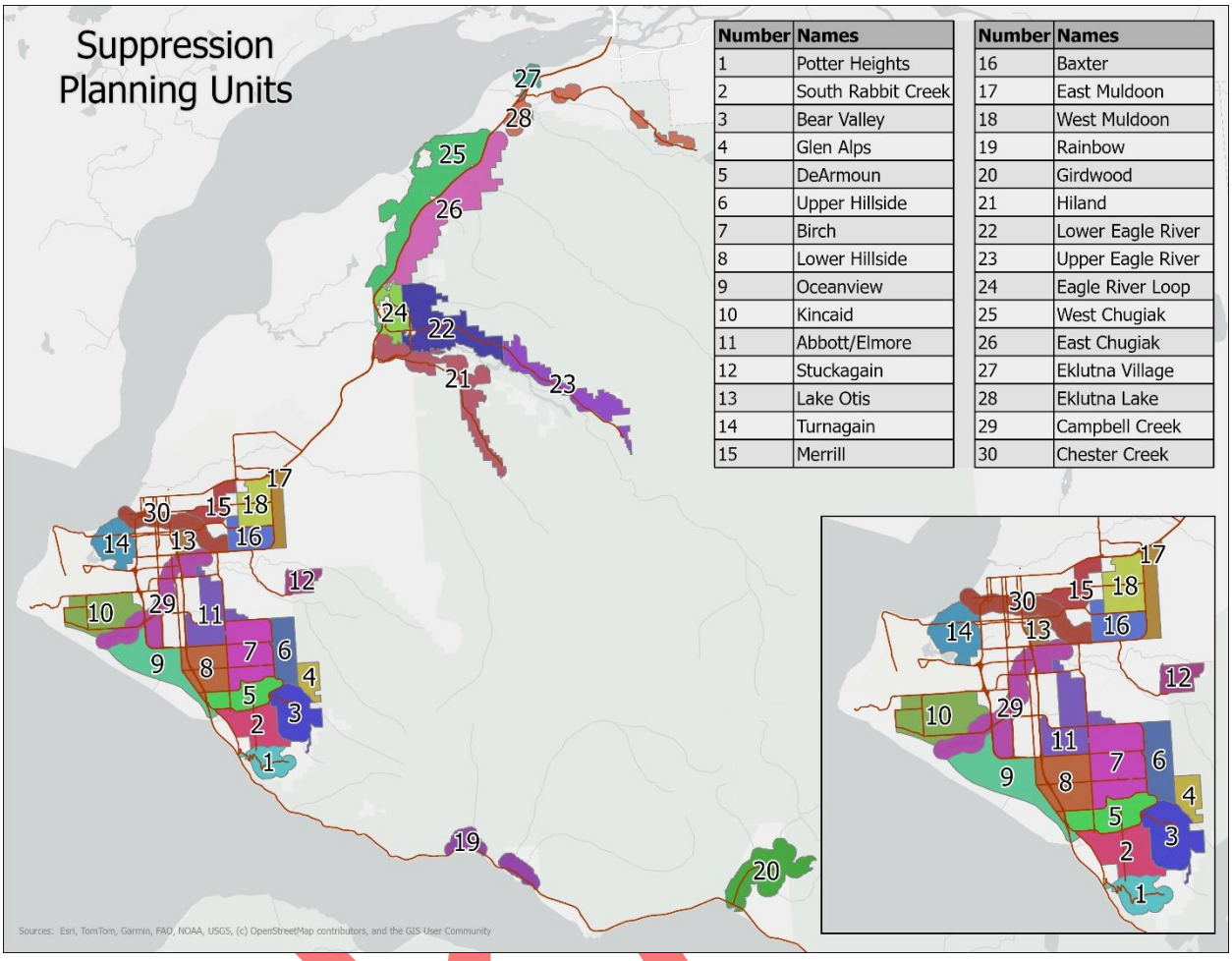
The primary outcome of the hazard study performed for this CWPP is to identify and quantify wildland fire hazards for the Wildland-Urban Interface (WUI) residential areas. WUI areas in the study area have been grouped into 30 Suppression Planning Units (SPUs), listed in Table 1 for hazard analysis and prioritization of mitigation recommendations.

For purposes of this study, SPU boundaries are based on areas of residential development that represent similar dominant wildfire hazards and are geographically contiguous rather than political, HOA, or traditional neighborhood boundaries. Non-residential land, such as large commercial or government-owned tracts, have been excluded. Isolated single properties and small groups of properties are addressed as individual parcel assessments and not considered an SPU for this purpose.



[1] https://iftdss.firenet.gov/landing_page/about.html

# Appendix C - Methodology




| Number | Names |
|---|---|
| 1 | Potter Heights |
| 2 | South Rabbit Creek |
| 3 | Bear Valley |
| 4 | Glen Alps |
| 5 | DeArmoun |
| 6 | Upper Hillside |
| 7 | Birch |
| 8 | Lower Hillside |
| 9 | Oceanview |
| 10 | Kincaid |
| 11 | Abbott/Elmore |
| 12 | Stuckagain |
| 13 | Lake Otis |
| 14 | Turnagain |
| 15 | Merrill |

| Number | Names |
|---|---|
| 16 | Baxter |
| 17 | East Muldoon |
| 18 | West Muldoon |
| 19 | Rainbow |
| 20 | Girdwood |
| 21 | Hiland |
| 22 | Lower Eagle River |
| 23 | Upper Eagle River |
| 24 | Eagle River Loop |
| 25 | West Chugiak |
| 26 | East Chugiak |
| 27 | Eklutna Village |
| 28 | Eklutna Lake |
| 29 | Campbell Creek |
| 30 | Chester Creek |

**Figure 1 - Suppression Planning Units**

The WUI is also known as the area where adjacent natural fuels represent a wildfire hazard to what would be an urban or suburban development in a different setting. The WI consists of communities where wildland fuels surround homes. Several authorities including the U.S. Fire Administration, the International Wildland-Urban Interface Code (IWUIC), and the National Fire Protection Association (NFPA) also recognize an "Occluded" category of interface communities that includes developed areas surrounding wildland fuel islands of less than 1,000 acres.[2] In terms of hazard analysis and mitigation, these communities are treated and defined as SPUs.

## SPU Hazard Rating (SPUHR) - Description

The SPUHR methodology was developed specifically for this MOA CWPP by Dr. Schmidt and the AFD Wildfire Division. The SPUHR combines physical infrastructure factors such as structure density, road access, and water supply with social and demographic factors, finally using fire

[2] National Institute of Standards and Technology Technical Note 2205, March 2022, page 3 (footnote 1)

behavior and LBP outputs from IFTDSS. The model was developed through multiple rounds of discussion, and the results were validated by local fire department experts.

Elements of NFPA 1140 have been integrated into this methodology to ensure compatibility with national standards. Aspects of NFPA 1142 regarding water supply for rural and suburban firefighting are also included in the assessment by evaluating proximity and capacity of water for fire suppression.

SPUHR ratings are relative to ratings for other SPUs the same study area. For example, a “High” hazard community in northern Alaska will not look like a “High” hazard community in MOA.

Several factors were used to assess wildfire hazard, risk, and vulnerability (Table 1). Each factor has a range of values, and within each factor the natural distribution of those values was used to assign each SPU a rank score between one and five based on natural breaks in the data (Jenks 1967)[3]. One represents the lowest score (i.e. lowest risk) and five represents the highest score (i.e. highest risk). A total of 19 factors included in the SPUHR approach (Table 1). The factors were grouped into categories (Table 1) to reflect different aspects of hazard, risk, and vulnerability. After each SPU was assigned a score of 1-5 for each factor, the factors were grouped into categories (Table 1).

The SPU factor scores were totaled within each category to provide a cumulative SPU score for that category. Each category contributed equally to the total score, except for vulnerability and values at risk, which represented half a factor. The reason for this is that while socio-economic factors are important, fuel must be present for a wildfire hazard to exist, and a fast response is crucial to limiting the spread of wildfires within an urban environment. So, more weight should be given to those factors. The final numeric total score was then used to sort SPUs into one of five adjective hazard classes: Low, Moderate, High, Very High or Extreme. Table 2 shows the SPUHR ratings for the SPUs of this study area.



[3] Jenks, George F. 1967. "The Data Model Concept in Statistical Mapping", International Yearbook of Cartography 7: 186–190.

# Appendix C - Methodology

| Category | Factor within each suppresion planning unit (SPU) | Source |
|---|---|---|
| Fire Hazard | Average 2024 wildfire exposure | Dr. Schmidt |
| | Average integrated hazard | IFTDSS |
| | Average wildfire structure risk | Dr. Schmidt |
| Fire Behavior | Terrain Ruggedness 90th percentile | United States Geological Survey (USGS) |
| | Percent of the area with a south-facing slope | United States Geological Survey (USGS) |
| Fire History | Density of wildland fire starts (2001-2021) | Municipality of Anchorage |
| Fuel | Ratio of hazardous fuel area to SPU area | Dr. Schmidt |
| Suppression | Percent of structures not within a 200m buffer of a fire hydrant | Municipality of Anchorage |
| | Percent of the area outside of a fire service area | Municipality of Anchorage |
| | Average response time to parcels from the nearest fire station | Municipality of Anchorage/Dr. Schmidt |
| Access | Percent of the road length of roads that dead ends | Municipality of Anchorage/Dr. Schmidt |
| | Percent of the road length with a slope of 6% or more | Municipality of Anchorage/United States Geological Survey (USGS) |
| | Density of sharp curves | Dr. Schmidt |
| Vulnerability | Percent of the households that speak English less than "Well" | American Community Survey Data (2019-2023, Block Group) |
| | Percent of the population under 18 or over 64 years old | American Community Survey Data (2019-2023, Block Group) |
| | Percent of households with no vehicle | American Community Survey Data (2019-2023, Block Group) |
| | Percent of civilians with a disability | American Community Survey Data (2019-2023, Block Group) |
| Values at Risk | Structure density | Municipality of Anchorage |
| | Total land and building values divided by area | Municipality of Anchorage |

**Table 1 - Factors, and their sources, used in the SPUHR approach to rate SPUs**

The SPUHR ratings, as described above, have been included in the hazard summaries of the SPUs found in *Appendix A: Suppression Planning Units* and in the CWPP section discussing SPUs within the Municipality of Anchorage AOI.

## Fire Behavior Analysis

The CWPP hazard analysis begins by modeling wildfire behavior within the study area boundary. This is done using an industry-standard, fire-behavior modeling package known as IFTDSS (v3.11)[4]. IFTDSS uses maps of fuel characteristics and topography, along with information about past weather patterns, to predict the severity of wildfire. The 90th and 97th percentile weather (top 10% and 3% of fire weather days) are used to calculate fuel moisture and wind during a high and extreme fire danger day. Dominant wind directions and speeds are then calculated from the frequency distributions of the Remote Automatic Weather Stations (RAWS) records. That information is used to measure how any given vegetation will burn across the study area under the same weather conditions.

**Landscape Fire Behavior Modeling Inputs:**

- Fuel Model
- Canopy Cover
- Stand Height
- Canopy Base Height
- Canopy Bulk Density
- Topographic Position (Aspect, Slope and Elevation)
- Initial Fuel Moisture

[4] https://iftdss.firenet.gov/iftdss2/#/landing (same as footnote 1)

- Wind Speed and Direction

**Landscape Fire Behavior Simulation Outputs:**

- Flame Length
- Rate of Spread
- Crown Fire Activity
- Fireline Intensity
- Heat per Unit Area

## Fire Behavior Modeling Procedure

The study area is broken down into grid cells with dimensions of 30 meters × 30 meters; fire behavior is predicted for each cell barographic, fuel, and weather input information. For this study, rather than using the LANDFIRE data integrated into the Interagency Fuel Treatment Decision Support System (IFTDSS) that was used to perform modeling, Dr. Schmidt used a modified landcover layer from the Arctic Boreal Vulnerability Experiment (ABoVE) project that focused on the Arctic.[5] This layer was modified to include impacts from a recent spruce beetle outbreak and identified black and white spruce. This layer was found to more adequately capture vegetation within an urban environment. Dr. Schmidt worked with a fire behavior analysist at the National Park Service (Chris Moore) to develop a crosswalk between the landcover categories and fuel characteristics used in the model (surface fuels, canopy closure [CC], canopy height [CH], canopy base height [CBH], and canopy bulk density [CBD]). IFTDSS provides a topographic dataset (aspect, slope, and elevation).

Reference weather and fuel moisture information are obtained from one or more Remote Automated Weather Station (RAWS) sites. This study examined wind roses from the Anchorage Airport (PANC) during fire season (May-August 15th), which suggested 359 and 160. Based on feedback from AFD experts, wind directions of 160 and 290 were used.

Predominant wind directions and speeds are calculated from the frequency distributions of the RAWS records. For the flame length, rate of spread, crown fire activity, and fireline intensity model runs, an upslope wind direction is used (i.e., the fire is assumed to burn uphill). This simulates the worst-case scenario (winds aligned with slopes) and is considered the best scenario to run for preplanning. Both live and dead fuel moistures for each landscape cell are calculated by the model based on the topography (slope, aspect, and elevation) and shading from forest canopy and clouds, as well as the recorded weather (precipitation, high and low temperatures, and high and low relative humidity) for the previous three days that lead up to the date chosen to get the best representation of the standard conditions.

Rate of spread values generated by the simulation are classified into four categories based on standard ranges: less than 20, 20.0–40.0, 40.1–60.0, and greater than 60 chains per hour

5 Wang JA, Sulla-Menashe D, Woodcock CE, Sonnentag O, Keeling RF, Friedl MA (2019) ABoVE: Landsat-derived Annual Dominant Land Cover Across ABoVE Core Domain, 1984-2014. In: ORNL Distributed Active Archive Center. https://daac.ornl.gov/ABOVE/guides/Annual_Landcover_ABoVE.html Accessed May 2023

(Ch/h). A chain is a logging measurement that is equal to 66 feet; 1 mile equals 80 chains, 1 Ch/h equals approximately 1 foot/minute, and 80 chains per hour equals 1 mile/hour. A high rate of spread does not necessarily indicate severe fire effects in all portions of the study area. Fire will move very quickly across short grass fields but will not burn very hot and may not cause any major damage to the soil or man-made features.

Crown fire activity values generated by the simulation are classified into four categories based on standard descriptions: active crown fire, passive crown fire (torching), surface fire, and noncombustible. In the surface fire category, little or no tree torching will be expected. During passive crown fire activity, isolated torching of trees or groups of trees will be observed, and fire movement through the canopy will be limited to short distances. During active crown fire, sustained fire movement through the canopy independent of surface fire is probable.

Flame Length is a proxy for the heat generated by the flaming front. Generally, flame lengths of less than 4 feet can be attacked directly at the head or flanks by fire crews. Flame lengths of 4 – 8 feet are too intense for direct attack with hand tools and are usually attacked by machinery or air operations. When flame lengths are greater than 8 feet, any type of direct attack becomes impractical, and the fire is usually attacked by indirect methods such as utilizing natural and man-made barriers and backfiring.

Fireline Intensity and Heat per Unit Area are specific measures of the intensity on the leading edge of the fire versus the heat being released across the area actively burning irrespective of rate of spread.

Spotting and Embers – Embers are a major cause of structure loss. Thousands of embers, or “firebrands”, can be carried by the wind and rain down on structures. These embers can be parts of twigs or branches, pinecones, bark, or wood shingles and other flammable debris torn from burning roofs or debris piles. While any vegetation can create embers, trees are the most problematic since their embers travel the furthest distance. The impact of ember cast on fire spread is dictated by several factors.

- The source, size, and number of firebrands.
- The distance the firebrand is carried downwind.
- The probability of igniting a new fire at the downwind location.

While there is currently no standard model that can predict home to home ignition (urban conflagration), it is well documented that when multiple structures are burning under strong wind conditions, they will continue to generate viable embers that will land on structures ahead of the fire. The distance the fire will penetrate urban/suburban areas will be dictated by the windspeeds and the intensity of the fire. It is safe to say there will probably be ember and smoke impacts beyond where existing fire behavior models show ember cast.

## Landscape Burn Probability (LBP) Output

Landscape Burn Probability Model (LBP) evaluates the likelihood an ignition will develop into a wildfire. This model, along with fire severity predictions from fire-behavior modeling, are employed to determine the contextual threat of wildfire to the SPUs of the study area.

# Appendix C - Methodology

Similar but also useful, the Burn Probability output (BP) quantifies the likelihood of a fire occurring under a fixed set of weather and fuel moisture conditions.

In addition to BP, LBP also models Conditional Flame Length (CFL). CFL is an estimate of the average flame length for all fires that burn at a given point on the landscape under a fixed set of weather and fuel moisture conditions. This number is lower than the Landscape Fire Behavior Flame Length output because it averages head, flank, and backing fire for each pixel instead of just the head fire.

The most relevant product of the LBP analysis for hazard mitigation planning is Integrated Hazard. Integrated Hazard combines BP with CFL into a single characteristic that can be mapped.

The outputs of the fire behavior modeling process provide a significant portion of the SPUHR score.

## Hazard Rating Factors

A zonal analysis of physical geography affecting wildfire hazard threats to the communities is critical to the SPUHR ratings. ArcGIS Pro (version 3.5.2) was used to create the factors used to rank the SPUs. The zonal statistics tool was used for Average 2024 wildfire exposure

- Average 2024 wildfire exposure – Zonal statistics was used to calculate the average wildfire exposure within each SPU (Schmidt et al. 2024)[6]
- Average Integrated Hazard - Zonal statistics was used to calculate the integrated hazard, which is an output from IFTDSS, within each SPU
- Average wildfire structure risk – Zonal statistics was used to calculate the average wildfire exposure within each SPU https://bit.ly/moawildfireexposure [7]
- Terrain Ruggedness 90th percentile – Terrain ruggedness captures the amount of elevation difference between adjacent cells. The United States Geological Survey digital elevation model (DEM, 7.64 m resolution). Zonal statistics was used to calculate 90$^{th}$ percentile within each SPU. This is the value below which 90% of the cells within its zone fall. Higher values indicate increased ruggedness.
- Percent of the area with a south-facing slope – The same USGS DEM was used to calculate aspect. Then the south, southwest, and southeast aspects were identified and the percent of the SPU with these aspects was calculated.



6 Schmidt, J.I., Ziel, R.H., Calef, M.P. et al. Spatial distribution of wildfire threat in the far north: exposure assessment in boreal communities. Nat Hazards120, 4901–4924 (2024). https://doi.org/10.1007/s11069-023-06365-4

7 Schmidt, J.I., Ziel, R.H., Calef, M.P. et al. Spatial distribution of wildfire threat in the far north: exposure assessment in boreal communities. Nat Hazards120, 4901–4924 (2024). https://doi.org/10.1007/s11069-023-06365-4

# Appendix C - Methodology

- Density of wildland fire starts (2001-2021) -The number of callouts from AFD related to non-structure fire event totaled for each SPU and then divided by the area of the SPU (km2).
- Ratio of hazardous fuel area to SPU area – The hazardous fuel layer (2024) associated with the previous wildfire exposure layer (Schmidt et al. 2024)[8] was reclassified to identify areas with hazardous vegetation. Then the area within each SPU covered by hazardous vegetation was calculated and then divided by the area of the SPU (km2).
- Percent of structures not within a 200m buffer of a fire hydrant – The fire hydrant layer from the MOA was used and 200m buffers around each hydrant were identified. The MOA building extent layer was used to calculate the total number of buildings within an SPU and the total number of buildings not within 200m of a fire hydrant. The total number of buildings outside of the 200m fire hydrant buffer within an SPU was then divided by the total number of buildings within an SPU.
- Percent of the area outside of a fire service area – The fire service area (FSA) boundaries from the MOA were used to calculate how much area outside of a FSA within a SPU. This area was then divided by the total area of the SPU.
- Average response time from nearest fire station to parcels – The road network database maintained by the MOA was used along with the Network Analysis Closest Facilities tool in ArcGIS Pro. With this tool we used the MOA parcel database to identify the closest fire station based on travel time. Then it calculated the travel time for each parcel to the nearest fire station. The average parcel travel time was calculated within each SPU.
- Percent of the road length of roads that dead ends – Dead end roads were identified with a previous project (Schmidt and See 2023).[9] The length (km) of the dead end only roads was calculated within each SPU. Then this value was divided by the total length of roads within an SPU.
- Percent of the road length with a slope of 6% or more - The previous DEM was used to calculate slope. Then the roads were clipped by a mask where the slope was 6% or more. The length (km) of clipped roads was recalculated. The total length of roads within the area of 6% or more was totaled within each SPU. This value was then divided by the total length of roads within an SPU.[10]
- Density of sharp curves – Dr. Schmidt visually inspected the MOA road database and identified curves sharper than 90 degrees. The total number of these sharp curves within the SPU was then divided by the area of the SPU.



8 Schmidt, J.I., Ziel, R.H., Calef, M.P. et al. Spatial distribution of wildfire threat in the far north: exposure assessment in boreal communities. Nat Hazards120, 4901–4924 (2024). https://doi.org/10.1007/s11069-023-06365-4
9 Schmidt J.I., See J. (2023) Advancing Wildfire Preparedness and Planning in Anchorage Wildfire Exposure and Egress Study
10 Schmidt J.I., See J. (2023) Advancing Wildfire Preparedness and Planning in Anchorage Wildfire Exposure and Egress Study

# Appendix C - Methodology

- Percent of the households that speak English less than "Well" - Used the 5-year average American Community Survey data (2019-2023) at the block group level to determine the total number of households that speak English “Not Well” or “Not at all” within each SPU. Then divide this number by the total number of households within and SPU.
- Percent of the population under 18 or over 64 years old - Used the 5-year average American Community Survey data (2019-2023) at the block group level to determine the number of people younger than 18 and over 64 years old within each SPU. Then divide this number by the total number of households within and SPU.
- Percent of households with no vehicle - Used the 5-year average American Community Survey data (2019-2023) at the block group level to determine the number of households with no vehicle access within each SPU. Then divide this number by the total number of households within and SPU.
- Percent of civilians with a disability - Used the 5-year average American Community Survey data (2019-2023) at the block group level to calculate the total civilian noninstitutionalized population with a disability. Then divide this number by the total civilian noninstitutionalized population within an SPU.
- Structure density – The previously mentioned MOA building dataset was used to calculate the total number of structures within an SPU. This was then divided by the total area of the SPU (km2).
- Total land and building values divided by area – Used the total land and building value from the MOA appraisal database to total the value within an SPU. This was then divided by the total area of the SPU (km2).

The Fire Behavior outputs and the GIS Zonal Analysis described above were adjusted by the on-the-ground field survey of HIZ hazard factors to generate an adjective rating of the SPUs. The SPUHR ratings are used to recommend and prioritize mitigation actions presented in the CWPP report. For a narrative of the fire-related characteristics and hazards for each of these SPUs see *Appendix A: Suppression Planning Units*.

# Appendix C - Methodology

The SPUHR Ratings for the 30 SPUs in the MOA are shown in the Table and Map below.

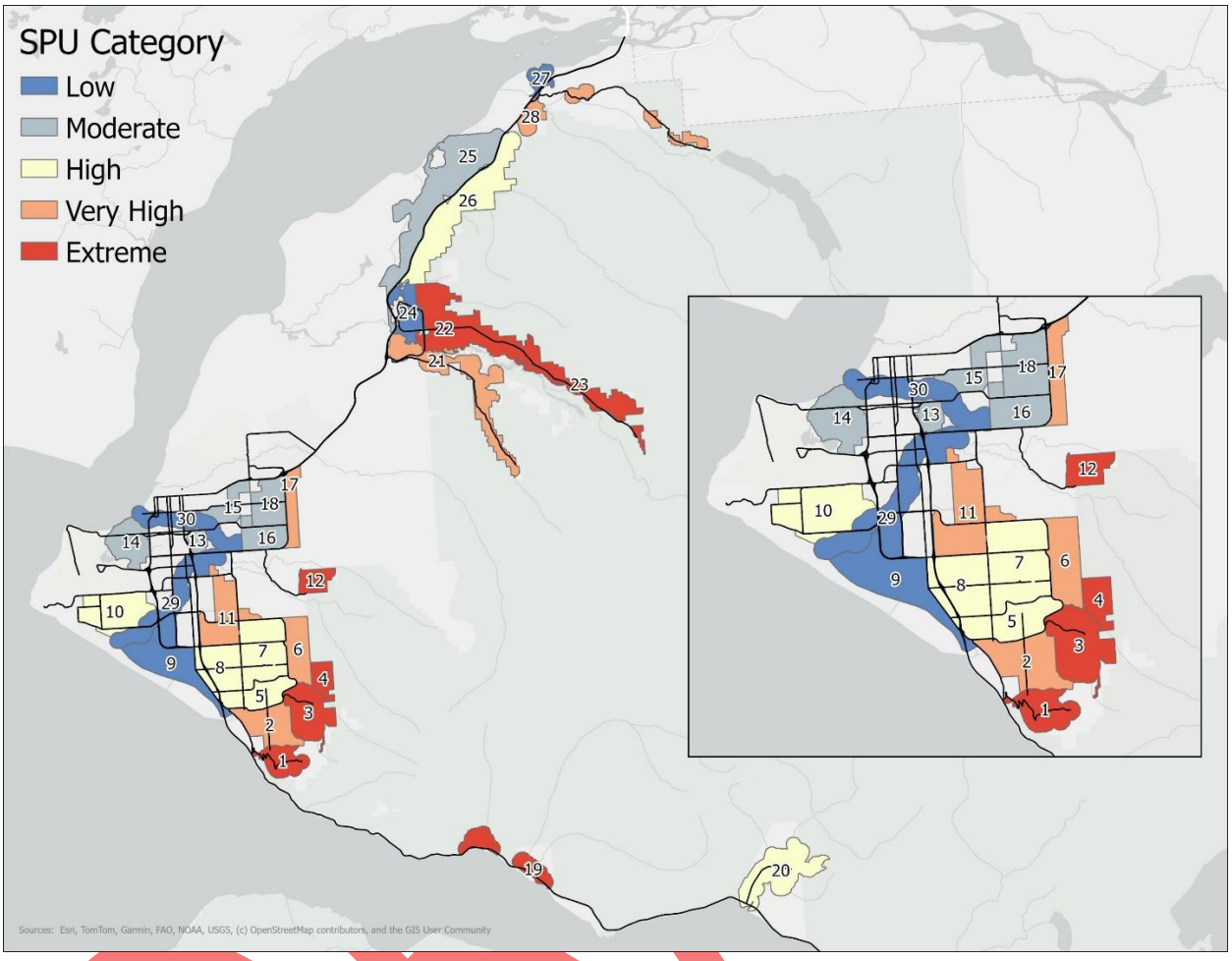



**Figure 2 - SPU Hazard Rating Map & Table**

| SPU No. | Name | Rating |
|---|---|---|
| 1 | Potter Heights | Extreme |
| 2 | South Rabbit Creek | Very High |
| 3 | Bear Valley | Extreme |
| 4 | Glen Alps | Extreme |
| 5 | DeArmoun | High |
| 6 | Upper Hillside | Very High |
| 7 | Birch | High |
| 8 | Lower Hillside | High |
| 9 | Oceanview | Low |
| 10 | Kincaid | High |
| 11 | Abbott/Elmore | Very High |
| 12 | Stuckagain | Extreme |
| 13 | Lake Otis | Moderate |
| 14 | Turnagain | Moderate |
| 15 | Merrill | Moderate |

| SPU No. | Name | Rating |
|---|---|---|
| 16 | Baxter | Moderate |
| 17 | East Muldoon | Very High |
| 18 | West Muldoon | Moderate |
| 19 | Rainbow | Extreme |
| 20 | Girdwood | High |
| 21 | Hiland | Very High |
| 22 | Lower Eagle River | Extreme |
| 23 | Upper Eagle River | Extreme |
| 24 | Eagle River Loop | Low |
| 25 | West Chugiak | Moderate |
| 26 | East Chugiak | High |
| 27 | Eklutna Village | Low |
| 28 | Eklutna Lake | Very High |
| 29 | Campbell Creek | Low |
| 30 | Chester Creek | Low |

# Appendix C - Methodology

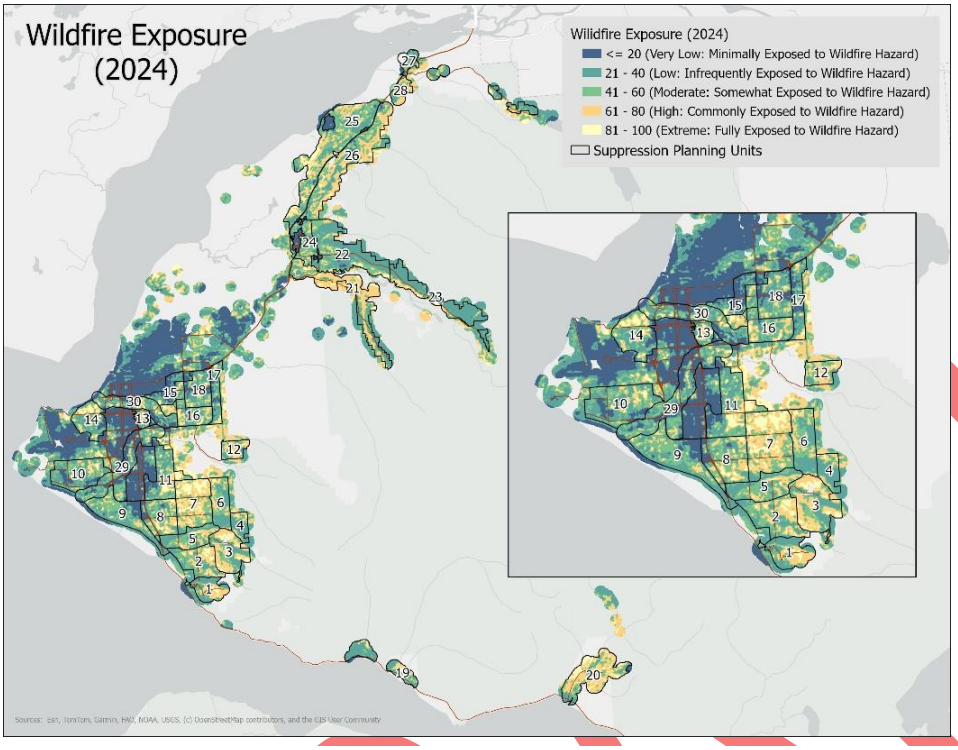
More maps and visual representations of the rating factors used in the analysis are presented below to further clarify the consistency of results across the different factors used.

## Summary

Fire history, the IFTDSS LBP analysis, and in-person expert assessment demonstrate that a high potential for wildfire will continue to threaten WUI SPUs in the Municipality of Anchorage. That said, the analysis also points to a concentration of risk that can be significantly reduced through collaborative efforts by residents and MOA agencies at reasonable cost if pursued now.

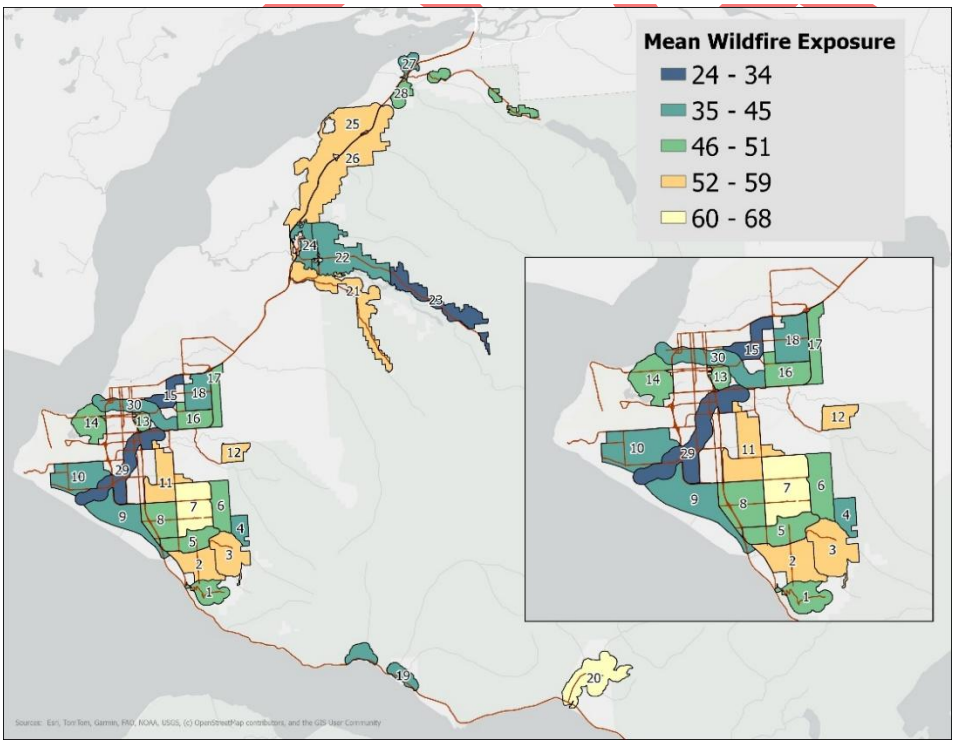
# Appendix C - Methodology

## Maps of Selected Hazard Rating Factors




Average Wildfire Exposure Analysis

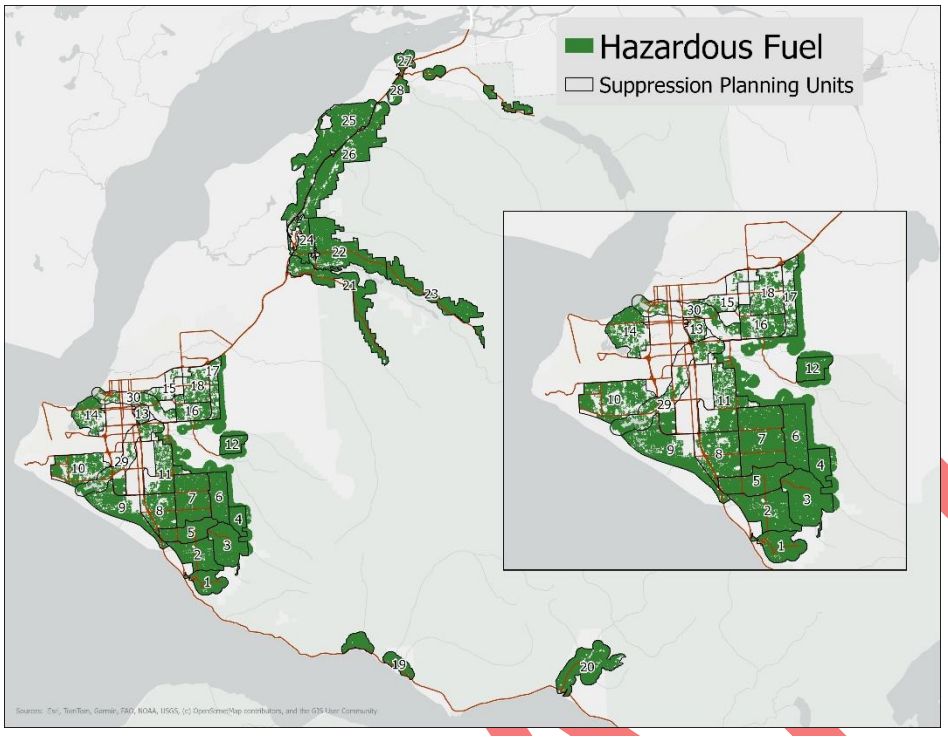
**Figure 3 - Average Wildfire Exposure**




Mean Wildfire Exposure by SPU

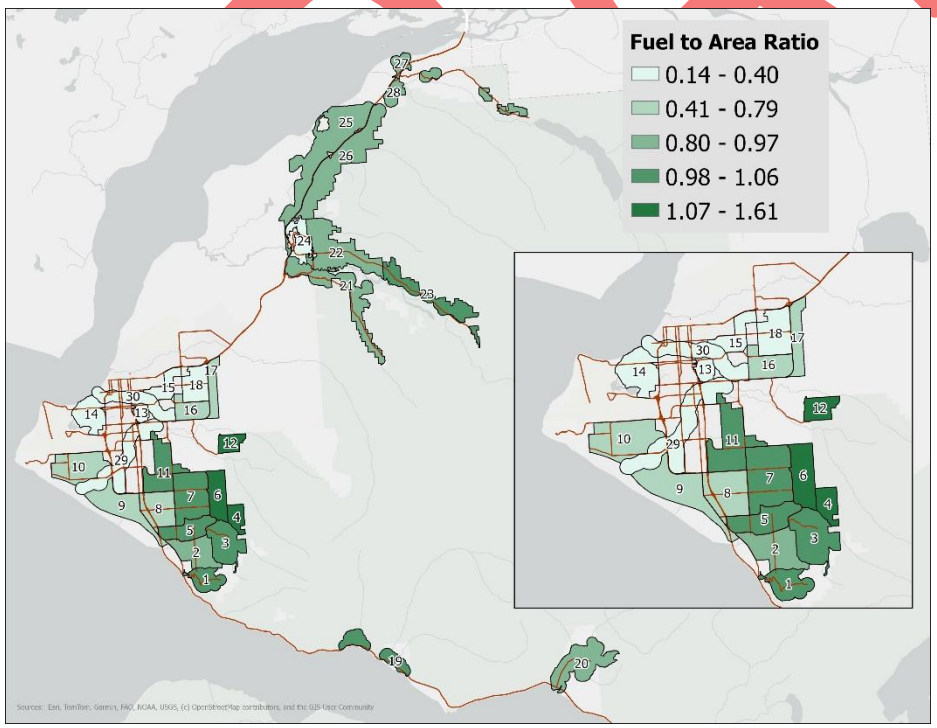
**Figure 4 - Mean Wildfire Exposure**

# Appendix C - Methodology




MOA Hazardous Fuels

**Figure 5 - Hazardous Fuels**




Fuel to SPU Area Ratio

**Figure 6 - SPU Fuel to Area Ratio**

# Appendix C - Methodology

Suppression Factors

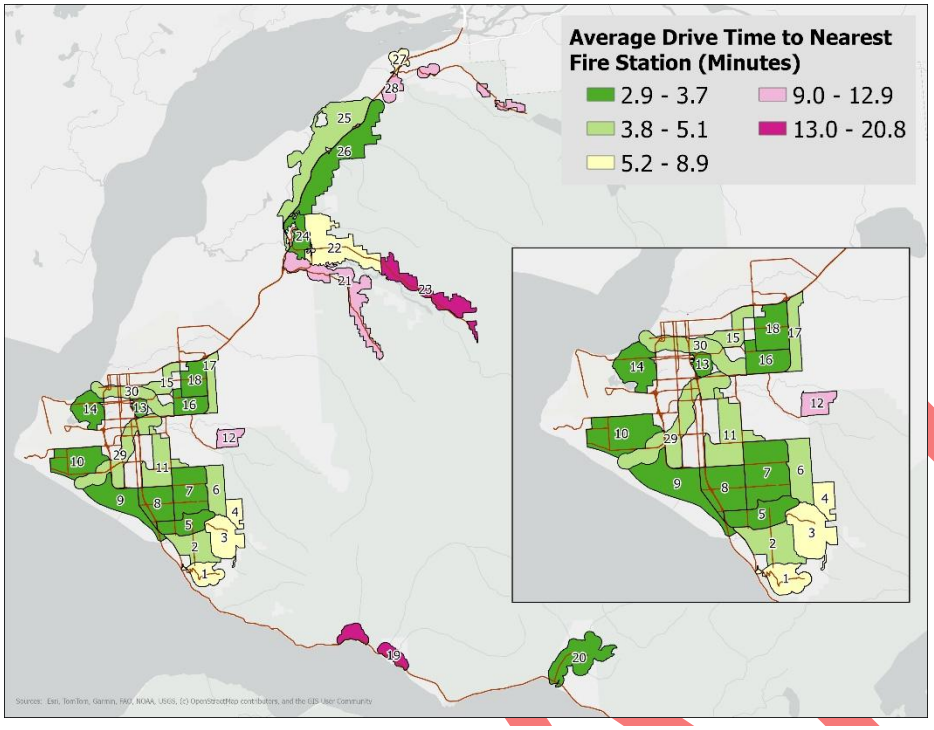



**Figure 7 - Suppression Factors**

Access

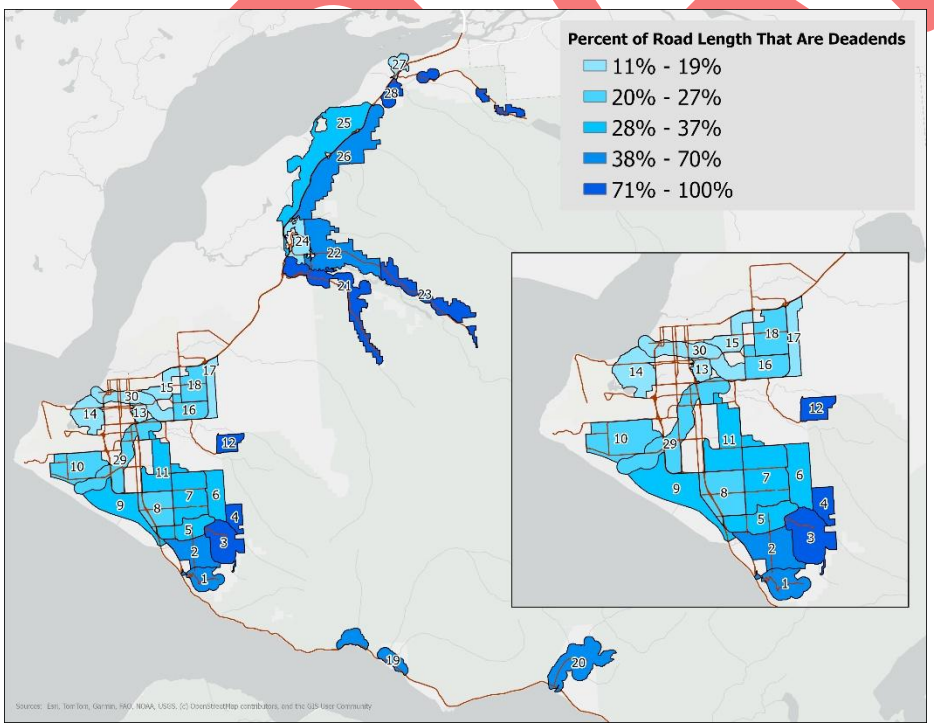
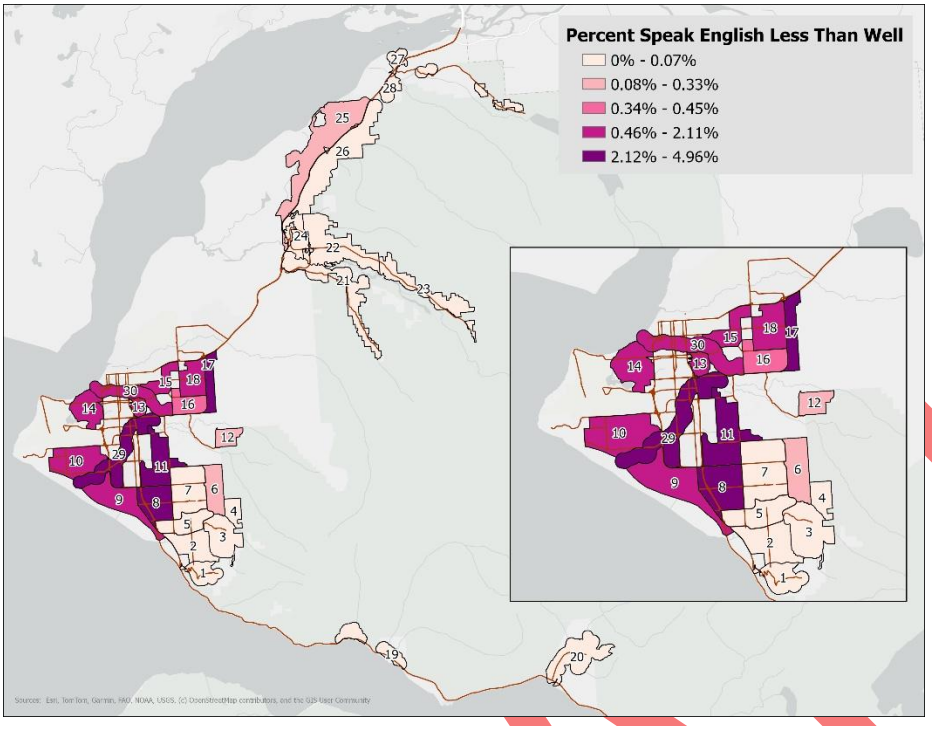


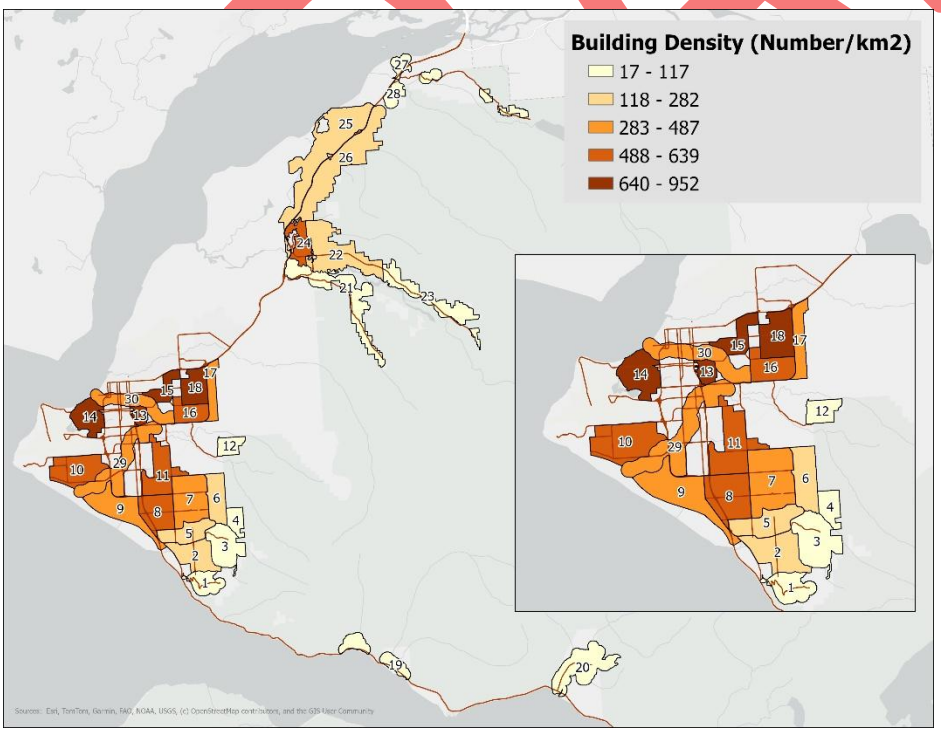

**Figure 8 - Percentage of Dead-End Roads in SPU**

# Appendix C - Methodology




Social Vulnerability Factors

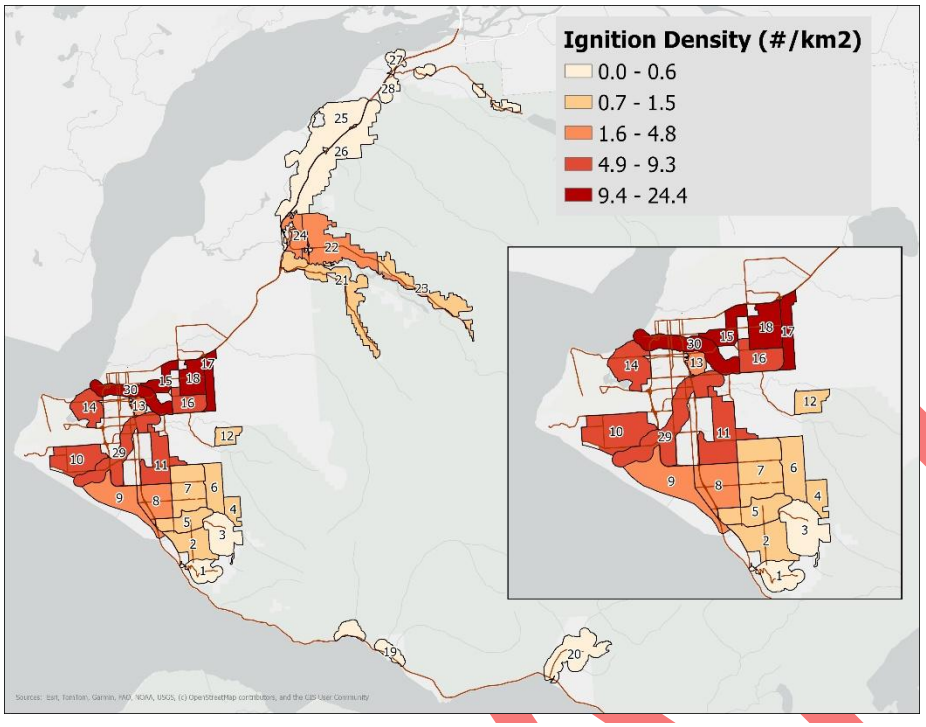
**Figure 9 - Social Vulnerability Factors**




Values at Risk

**Figure 10 - Building Density, Values at Risk**

# Appendix C - Methodology




Fire Ignition Patterns and Frequency

**Figure 11 - Ignition Map 2001 to 2021 (courtesy Dr. Jen Schmidt)**



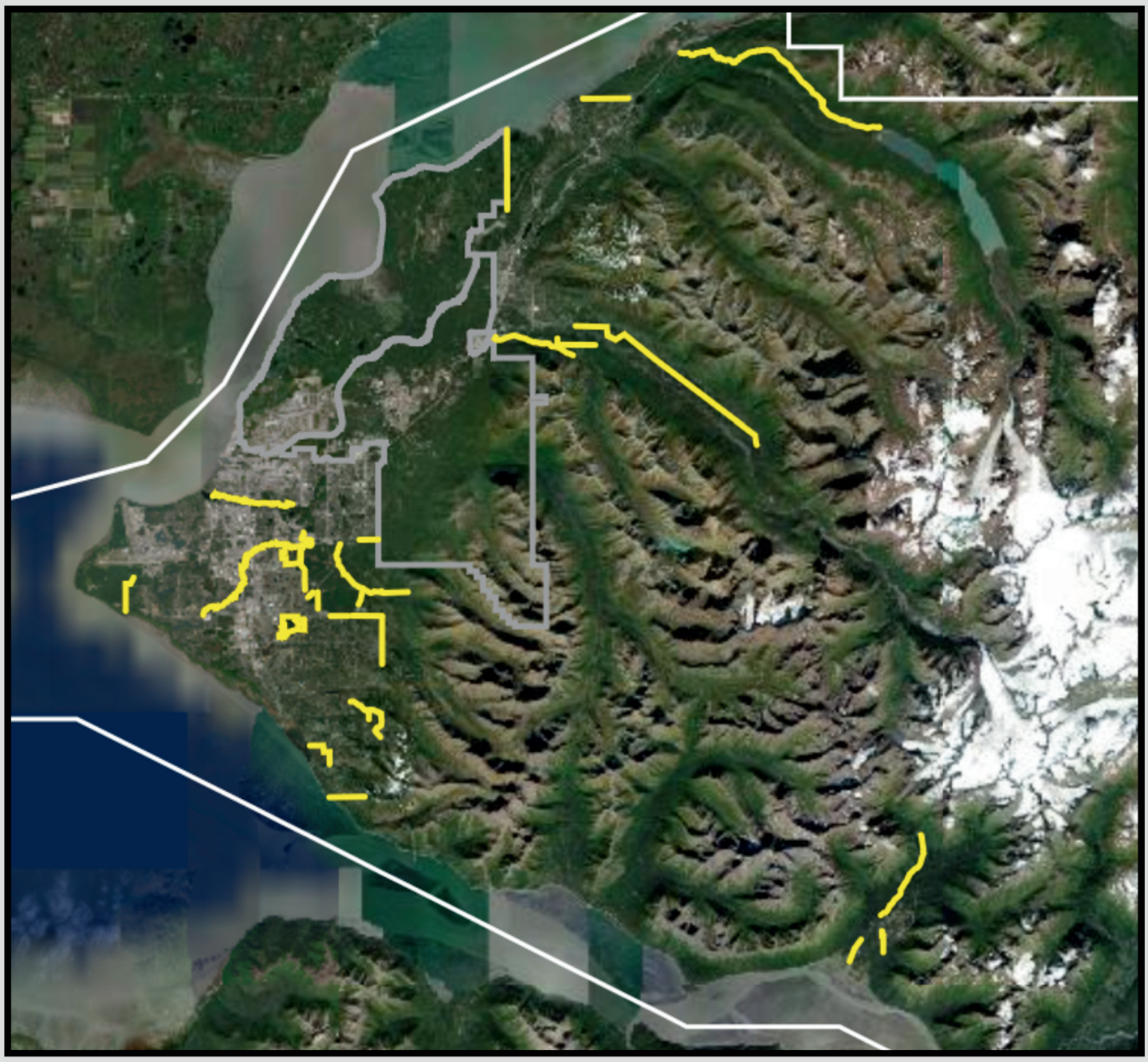
**Special Credit**

**Dr. Jen Schmidt of the University of Alaska collaborated closely with the AFD Wildfire Division and Bintel to co-develop the rating methodology explained in this appendix and conducted a majority of the analysis. This approach helped to recognize the unique characteristics of the MOA topography, vegetation, and wildfire risk.**

Any omissions or errors in the summary of the methodology contained herein unintentional and is the responsibility of Bintel Inc.

# Community WIldfire Protection Plan

# Municipality of Anchorage



## Appendix D: Mitigation Recommendations

# Appendix D – Mitigation Recommendations

## Table of Contents

# Appendix D – Mitigation Recommendations

## Detailed Mitigation Recommendations

The following tables outline strategic actions for community groups, land managers, and local, state, and federal agencies to undertake in the short-, mid-, and long-term.

Some activities require minimal financial investment but may require significant shifts in behavior and attitudes toward wildfire risk reduction. Others are more complex and call for community-wide collaboration, shared resources, and the sourcing of funds. Many of these recommendations are ambitious and will require patience and dedication from community members and leaders to achieve lasting improvements.

Contact the MOA for guidance regarding land ownership and approval authority before starting any projects.

Instructions on how to use the table and maps.

1. The table lists mitigation projects for the MOA and community members.
2. The entities generally responsible for either completing or approving the work are listed, but this is subject to change.
3. The list can be used as a guide for future grant applications.

List of Agencies Referenced in this Document

- Municipality of Anchorage (MOA)
- Anchorage Fire Department (AFD)
- Anchorage Parks & Recreation
- Anchorage School District (ASD)
- Anchorage Water and Wastewater Utility (AWWU)
- Chugiak Volunteer Fire and Rescue Department (CVFRD)
- Girdwood Fire and Rescue Department (GFRD)
- State of Alaska Division of Forestry & Fire Protection (AK-DOF)
- Alaska Department of Fish & Game (ADF&G)
- Bureau of Land Management (BLM)
- Chugach Electric Association (CEA)
- Chugach State Park

# Appendix D – Mitigation Recommendations

- Eagle River/Chugiak Parks & Recreation
- Girdwood Parks & Recreation
- Heritage Land Bank (HLB)
- Native Village of Eklutna (NVE)
- Join Base Elmendorf-Richardson (JBER)
- U.S. Fish & Wildlife
- U.S. Forest Service (USFS)



Figure 6 - Recommended Treatments in the Anchorage Bowl Central AreaFigure 6 - Recommended Treatments in the Anchorage

## Special Considerations

Prioritizing and executing wildfire mitigation projects is a multi-faceted process guided by life safety, evacuation and access needs, SPU hazard ratings, and the protection of values and critical infrastructure. Project design also incorporates habitat considerations and community support, coordinated with landowners and land management agencies to ensure implementation is safe, effective, and environmentally sustainable. Ultimately, most projects are funded through grants, and the timing and order of execution are often driven by the availability and award of those funds.

**Life-safety of the public and first responders**: projects are first prioritized based upon the maximization of lives protected.

**Evacuation and suppression agency access routes:** many areas of the MOA are affected by limited egress and access opportunities. Protecting and expanding upon evacuation routes are weighed heavily, as this work correlates with life safety.

**Protection of critical infrastructure:** the federal government identified sixteen critical infrastructure sectors, to include communications, emergency services, energy, healthcare and public health, transportation, and water (see full list here: https://www.cisa.gov/topics/critical-infrastructure-security-and-resilience/critical-infrastructure-sectors).

**SPU hazard ratings:** the higher the hazard ratings of SPUs treated and protected will generally correlate with a higher priority.

**Land ownership:** landowners and managers hold ultimate authority over prescribed work occurring on their lands. They play a part in agreeing for work to occur and the scope of the work.

**Habitat:** 52 mammal species, 230 bird species, and a number of fish species rely upon the habitat afforded throughout the Municipality. Considerations are made through interagency collaboration and best practices to achieve a balance between human life and habitat preservation. Source: https://www.adfg.alaska.gov/index.cfm?adfg=anchoragewildlifeplanning.anchorage5#sum

**Community support:** while community support is not a policy-driven requirement, the fire department would prefer to have support from community members and user groups directly impacted by proposed projects. Forms of support include, but are not limited to formal resolutions of support, public comment, and willingness of community members to contribute to the effects of projects by

performing work to harden homes and the create defensible space on private property. Please review Appendix B to learn more about what property owners can do.

Each one of these recommended treatments involves different collaborators and landowners. For every project, each of these people and organizations should be involved in planning the projects and throughout their implementation.

**Heritage Land Bank:** Wildland fire fuel reduction has remained an on-going land management priority for Heritage Land Bank since its creation in 1983. This activity not only improves the health and safety of HLB land but surrounding parcels as well. HLB will collaborate with AFD and the affected communities to implement the recommendations within the CWPP.

**Municipality of Anchorage Parks and Recreation:** Prior to project initiation, the MOA Parks and Recreation Department requests that a public process involves, at minimum, engaging with affected Anchorage Community Councils and approval from the Parks and Recreation Commission. Additionally, consideration and planning should occur to protect wildlife habitat, wetlands, trails and recreational use.

**Alaska Department of Fish & Game:** The ADF&G is tasked with maintaining, protecting, and improving the natural resources of the State. Each project should involve ADF&G staff in the planning stages to help identify and evaluate critical habitat, movement corridors, and timing windows for wildlife in project areas to minimize impacts on these animals. Projects should start out with the least invasive and destructive methods of clearing or habitat manipulation prior to more invasive methods being considered.

**Eagle River/Chugiak Parks and Recreation:** Prior to project initiation, Eagle River/Chugiak Parks and Recreation requests a public process involves engaging with affected Chugiak and Eagle River Community Councils and the Eagle River/Chugiak Parks and Recreation Board of Supervisors. Additionally, considerations should be taken to care for habitat, wetlands, and recreational use.

**Girdwood Parks and Recreation:** Prior to project initiation, Girdwood Parks and Recreation requests a public process be conducted, including engaging with the Girdwood Community Council. Additionally, considerations should be taken to care for habitat, wetlands, and recreational use.

# Appendix D – Mitigation Recommendations

## Area Wide Recommendations

### Establish a Community Chipping Program

Establishing a community chipping program would provide significant benefits to residents and is strongly recommended. There are opportunities for both resident-led and municipal-led initiatives, and coordination among interested community councils could help establish designated chipping days and centralized drop-off locations.

Several neighborhoods within the MOA already pool funds to organize their own chipping services, fostering neighborhood cohesion and empowering residents to take direct action toward wildfire risk reduction. Expanding roadside chipping services through contracts with qualified vendors should also be explored.

The Chugach Electric Association has successfully collaborated with the Girdwood Fire and Rescue Department on past chipping efforts, and this partnership should continue and expand. Similar collaborations with other organizations and private companies are encouraged to increase participation and capacity for community-wide chipping events.

### Maintain the Community Wood Lot Program

Community and residential fuel reduction efforts generate large volumes of wood waste that must be properly managed. To address this, AFD has partnered with MOA Solid Waste Services to provide free wood lot disposal sites throughout the summer. The program has been well-received, and both agencies have shown a strong commitment to its continuation and growth. Maintaining and expanding this program is important to support ongoing wildfire mitigation efforts across the municipality.

### Power Line Corridor Maintenance

The AFD Wildfire Division should continue to work closely Chugach Electric Association and Matanuska Electric Association on maintenance and line clearance intervals. The consistent maintenance work that has been completed by these companies has had a positive impact on the communities; therefore, it is critical to maintain these programs.

# Appendix D – Mitigation Recommendations

If residents see trees close to or in contact with power lines, they can report them to the danger tree hotline.

- Chugach Electric Association (907) 762-7227
- Matanuska Electric Association 907-746-POWR (7697)

The return cycle to remove brush underneath and within the power line corrido is five years; however, overgrown brush, understory and fallen trees on power lines can present a substantial risk to the AOI.

## Investigate Early Detection

In the event of an ignition, early detection systems can be critical to inform first responders and provide the information to properly assess and coordinate aggressive response. The AFD should invest in a remote wildfire detection and response platform leveraging AI-supported satellite imagery, unmanned aerial systems, and other scalable technologies suitable for areas with minimal communications or power infrastructure.

## Defensible Space and Structure Hardening for Schools

While most schools within the MOA maintain defensible space and meet structure hardening standards, some still require additional mitigation. Schools are often used by suppression agencies as bases or staging areas for responders during wildfire operations, making proper hardening and maintenance essential for responder safety and operational effectiveness. However, schools can also become traffic congestion points during evacuations if an incident occurs during school hours, as students, staff, and parents converge on campus. For these reasons, it is critical that the public follow evacuation instructions issued by emergency services. See *Appendix B* for additional information on evacuation procedures.

# Appendix D – Mitigation Recommendations

## Regional Areas

The Municipality of Anchorage (MOA) encompasses a complex landscape with diverse communities, environments, and ways of living that influence wildfire mitigation and resilience. Mitigation strategies effective in one area may not be appropriate in another. Conversely, some activities may share similar objectives but require strategies to achieve meaningful wildfire risk reduction.

To address the unique needs and characteristics of each region, recommendations have been divided into three distinct geographic areas, each with its own Regional Recommendations section. Descriptions and considerations for each region's mitigation strategies are detailed below.

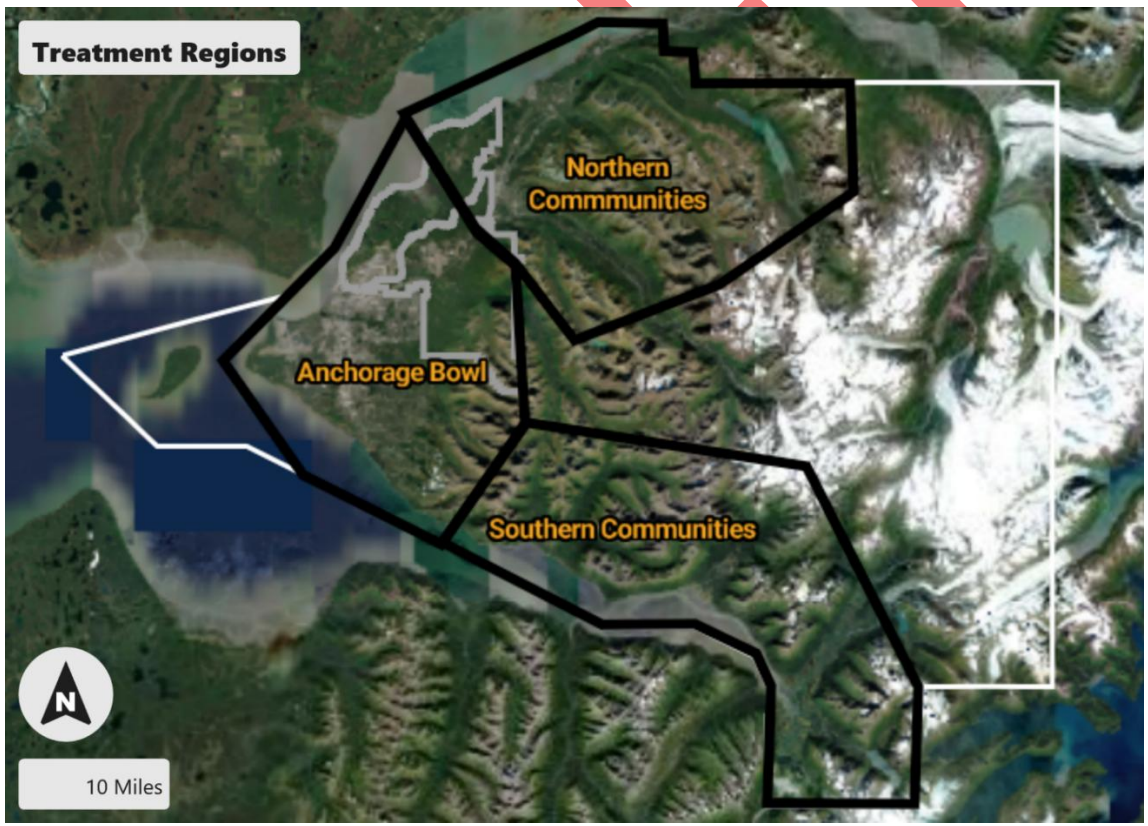



Figure 1 - MOA CWPP Regional Areas

# Appendix D – Mitigation Recommendations

## Northern Communities

The Northern Communities Treatment Region includes areas of development north of the Anchorage Bowl, encompassing Eagle River, Chugiak, Eklutna, and surrounding neighborhoods. This area is served by both CVFRD and AFD, with the jurisdictional boundary located at the North Eagle River Access Road. While most residents live within an established fire service area, some properties remain outside formal coverage zones.

In the event of a wildfire ignition, AFD and CVFRD provide an initial mutual-aid response with a full complement of available resources. For incidents within the CVFRD service area, AFD support depends on resource availability and other concurrent emergencies within the MOA. AK-DOF also supports both initial and extended attack operations. Available DOF resources include air attack platforms, retardant and water-dropping tankers, wildland engines, helicopters and helitack crews, 10-person suppression modules, 20-person hand crews, and incident command leadership.

Parts of the Eklutna Valley present significant communications and access challenges. Cellular and radio coverage can be limited or nonexistent, and water for suppression must often be transported by tender, with one-way travel times taking at least 20 minutes. Eklutna Lake may serve as a potential drafting site. Central Mat-Su Fire Department Station 51 often assists with mutual-aid response. This region would benefit from evaluating and implementing automated early warning and detection systems to improve wildfire detection and resource response times. Cellular coverage also diminishes along Eagle River Road, Eklutna Road, and Hiland Road, which can complicate operations.

# Appendix D – Mitigation Recommendations

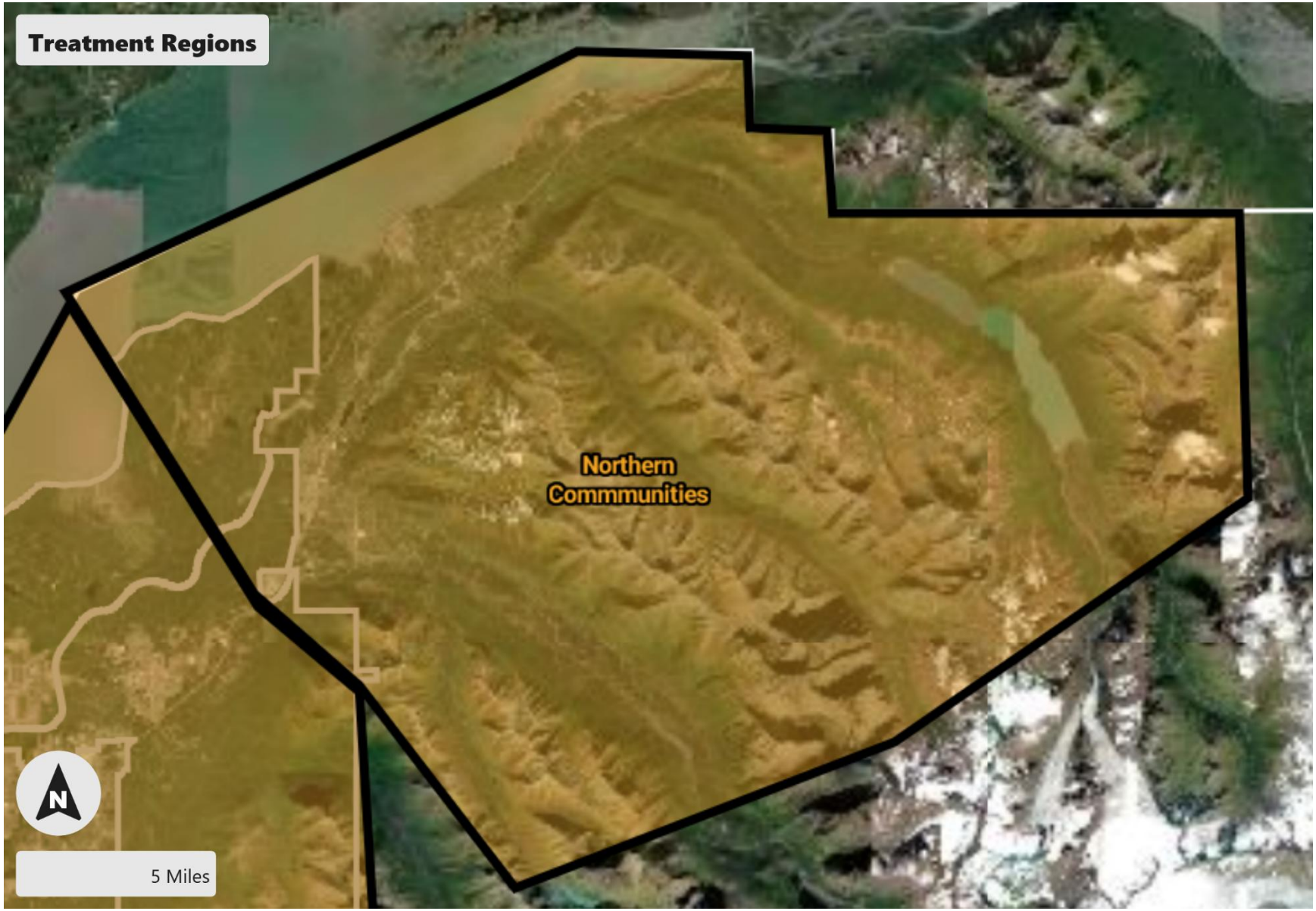



Figure 2 - Northern Communities Map

# Appendix D – Mitigation Recommendations

## Regional Recommendations

| Recommendation | Goals |
|---|---|
| Fuels reduction and structure hardening of critical infrastructure | Protect critical corridors, clinics, schools, water utility, power, and communications infrastructure. |
| Increase firefighting capability | Improvements or additions to water supply, response pre-planning by annual pre-attack plan reviews, red card training, and recruiting events. |
| Apparatus | Acquire additional apparatus and replace and modernize existing equipment. Establish sustainable funding for the maintenance program. |
| Improve Radio Communications | Improve the radio system to ensure adequate communication in areas around Eklutna Lake, Eagle River and Hiland valleys. |
| Increase Water Availability | Map dip/draft sites. |
| Fuel reduction around access/egress corridors | Specific recommendations have been made for primary access and egress corridors, but additional work to ensure safe passage should be completed on smaller corridors as well. |

# Recommended Treatments - Northern Communities

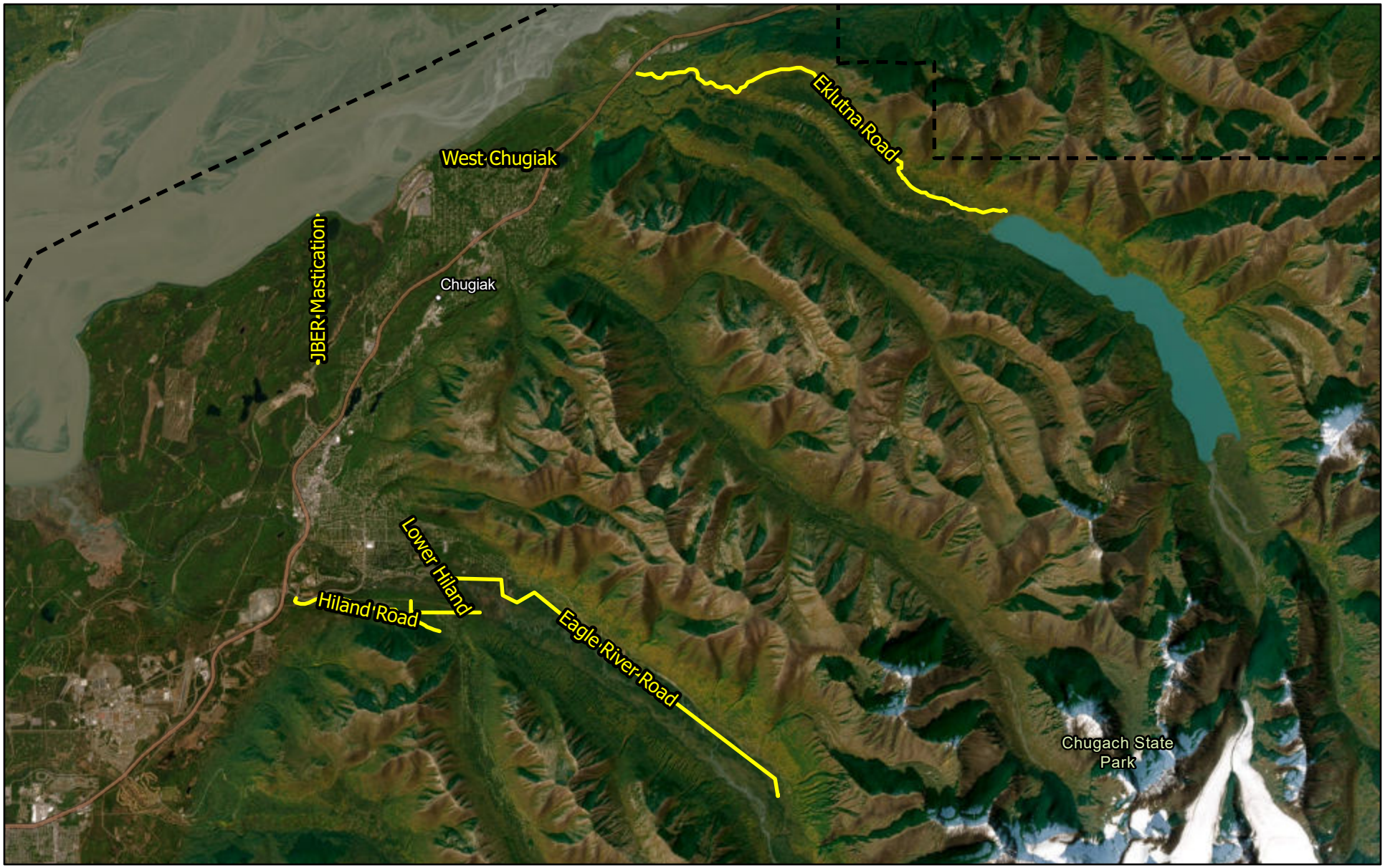



Figure 3 - Recommended Treatments in the Northern Communities

# Appendix D – Mitigation Recommendations

## Proposed Fuels Reduction Treatments

| Name | Description | Method | Maintenance | Landowners & Managers |
|---|---|---|---|---|
| JBER Mastication | 300-foot Shaded Fuel Break & Fire Road Construction | 300-foot-wide mechanical removal of standing dead and downed trees, along with low-level fuels up to 8 feet from the ground, will be conducted. In mixed white spruce and hardwood areas, spruce trees under 18 inches DBH will be removed, ladder fuels will be limbed to 8 feet, and hardwoods thinned to achieve approximately 10 feet of crown spacing, forming a shaded fuel break. In black spruce stands, 25-foot clumps will be maintained with 30-50 feet of spacing in a mosaic pattern. The treatment area will also be cleared sufficiently to allow for the construction and maintenance of a standard gravel fire road, ensuring reliable access for suppression resources and equipment. | 4-7 years | Alaska Missionary Conference of the United Methodist Church Birchwood Camp, Eagle River/Chugiak Parks & Recreation, Great Land Trust |
| Lower Hiland | 200-foot Shaded Fuel Break | Mechanical removal of standing dead and downed trees, along with low-level fuels up to 8 ft from the ground. In mixed white spruce and hardwood areas, remove spruce trees under 18 in DBH, limb ladder fuels to 8 ft, and thin hardwoods to a 10 ft crown spacing to form a shaded fuel break. In black spruce stands, 25 ft clumps are maintained with 30-50 ft of spacing in a mosaic pattern. | 4-7 years | Eklutna, Inc., State of Alaska |
| West Chugiak | 200-foot Shaded Fuel Break | Mechanical removal of standing dead and downed trees, along with low-level fuels up to 8 ft from the ground. In mixed white spruce and hardwood areas, remove spruce trees under 18 in DBH, limb ladder fuels to 8 ft, and thin hardwoods to a 10 ft crown spacing to form a shaded fuel break. In black spruce stands, 25 ft clumps are maintained with 30-50 ft of spacing in a mosaic pattern. | 4-7 years | Eklutna, Inc. |

# Appendix D – Mitigation Recommendations

## Proposed Roadside Treatments

| Name | Description | Method | Maintenance | Landowners & Managers |
|---|---|---|---|---|
| Eagle River Road | 200-foot Shaded Fuel Break | Segments of this treatment are adjacent to Eagle River Road. In these segments, the 200 ft measurement should begin at the centerline of the road. Mechanical removal of standing dead and downed trees, along with low-level fuels up to 8 ft from the ground. In mixed white spruce and hardwood areas, remove spruce trees under 18 in DBH, limb ladder fuels to 8 ft, and thin hardwoods to a 10 ft crown spacing to form a shaded fuel break. In black spruce stands, 25 ft clumps are maintained with 30-50 ft of spacing in a mosaic pattern. | 4-7 years | BLM, Eklutna, Inc., State of Alaska, Great Land Trust, 10 private property owners |
| Eklutna Road | 300-foot Shaded Fuel Break | 150 feet from centerline on both sides of the road, mechanical removal of standing dead and downed trees, along with low-level fuels up to 8 ft from the ground. In mixed white spruce and hardwood areas, remove spruce trees under 18 in DBH, limb ladder fuels to 8 ft, and thin hardwoods to a 10 ft crown spacing to form a shaded fuel break. In black spruce stands, 25 ft clumps are maintained with 30-50 ft of spacing in a mosaic pattern. | 4-7 years | AWWU, BLM, Eklutna, Inc., State of Alaska, 18 Private Property Owners |
| Hiland Road | 300-foot Shaded Fuel Break | 150 feet in both directions, from the centerline of the roadway, removal of standing dead and downed trees, along with low-level fuels up to 8 ft from the ground. In mixed white spruce and hardwood areas, remove spruce trees under 18 in DBH, limb ladder fuels to 8 ft, and thin hardwoods to a 10 ft crown spacing to form a shaded fuel break. In black spruce stands, 25 ft clumps are maintained with 30-50 ft of spacing in a mosaic pattern. | 4-7 years | Alaska Mental Health Trust, Eklutna, Inc., State of Alaska, 5 Private Property Owners |

# Appendix D – Mitigation Recommendations

## Anchorage Bowl

The Anchorage Bowl Treatment Region is the central, and primary population and infrastructure hub of the study area. Some SPUs exist entirely within the Anchorage Fire Service Area, while others are only partially included. This area has generally good cellular communications and adequate water availability. In areas without hydrants, water for firefighting will be delivered by water tenders. Complex urban dynamics, risk introduced by transient populations, dense residential sprawl, overloaded fire fuels, and secluded communities on roads that dead-end in dense fuels are among the principal concerns in this region.

State of Alaska Division of Forestry & Fire Protection resources are available nearby in Palmer for both Initial attack and extended attack, however these resources are dependent on statewide availability. Response times of AK-DOF resources vary, as it has suppression jurisdiction and has the authority to stage apparatus within the municipality, based on condition severity; when staged within the MOA, their response time is comparable to AFD's. Available resources include but are not limited to: Air Attack Platforms, Retardant and water dropping air tankers, wildland fire engines, Helicopters and helitack crews, 10-person suppression modules, 20-person hand crews, Incident commanders and fire line leadership.

The AFD Wildfire Division led a training initiative delivering Evacuation Management for Law Enforcement during APD Fallout Training in 2025, emphasizing how the Incident Command System (ICS) operates during mutual aid events, particularly in managing evacuations. This first of its kind targeted training strengthened interagency communication and understanding between AFD and APD, resulting in improved protocols that enhance coordination, interoperability, and operational efficiency between fire and law enforcement during complex incidents.

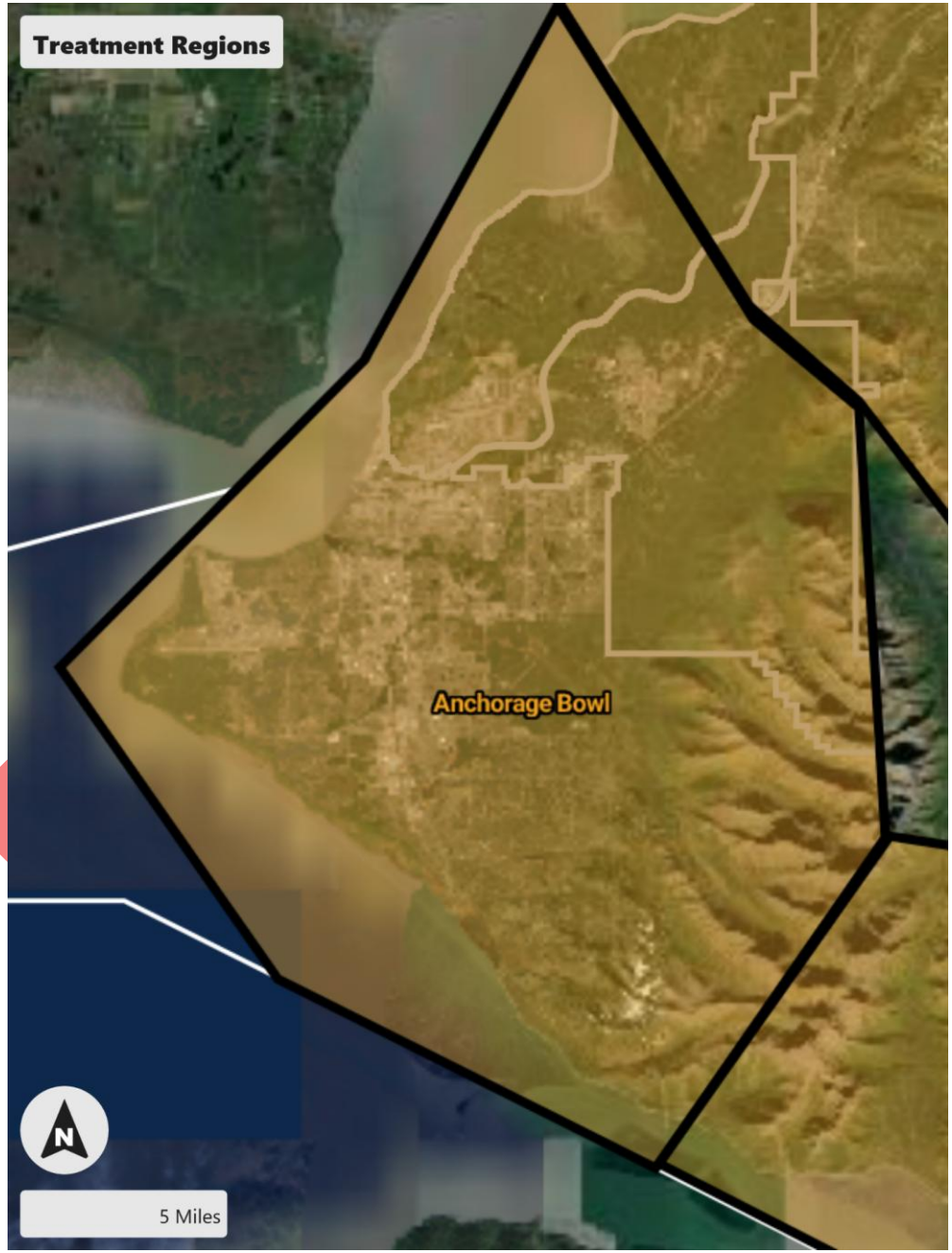



Figure 4 - Anchorage Bowl Map

# Appendix D – Mitigation Recommendations

## Regional Recommendations

| Recommendation | Goals |
|---|---|
| Fuels reduction and structure hardening of critical infrastructure | Protect critical corridors, clinics, schools, water utility, power, and communications infrastructure. |
| Increase firefighting capability | Annual pre-incident planning, continued red card training, expansion of wildland firefighting qualifications. |
| Apparatus | Establish sustainable funding for the modernization and maintenance program. |
| Improve Radio Communications | Improve the radio system to ensure adequate communication in areas around Eklutna Lake, Eagle River and Hiland valleys. |
| Increase Water Availability | Collaborate with AWWU to establish a water supply strategy to add hydrants in wildfire-prone areas. |
| Fuel reduction around access/egress corridors | Specific recommendations have been made for primary access and egress corridors, but additional work to ensure safe passage should be completed on smaller corridors as well. Adding secondary routes should also be investigated. |

# Recommended Treatments - Anchorage Bowl

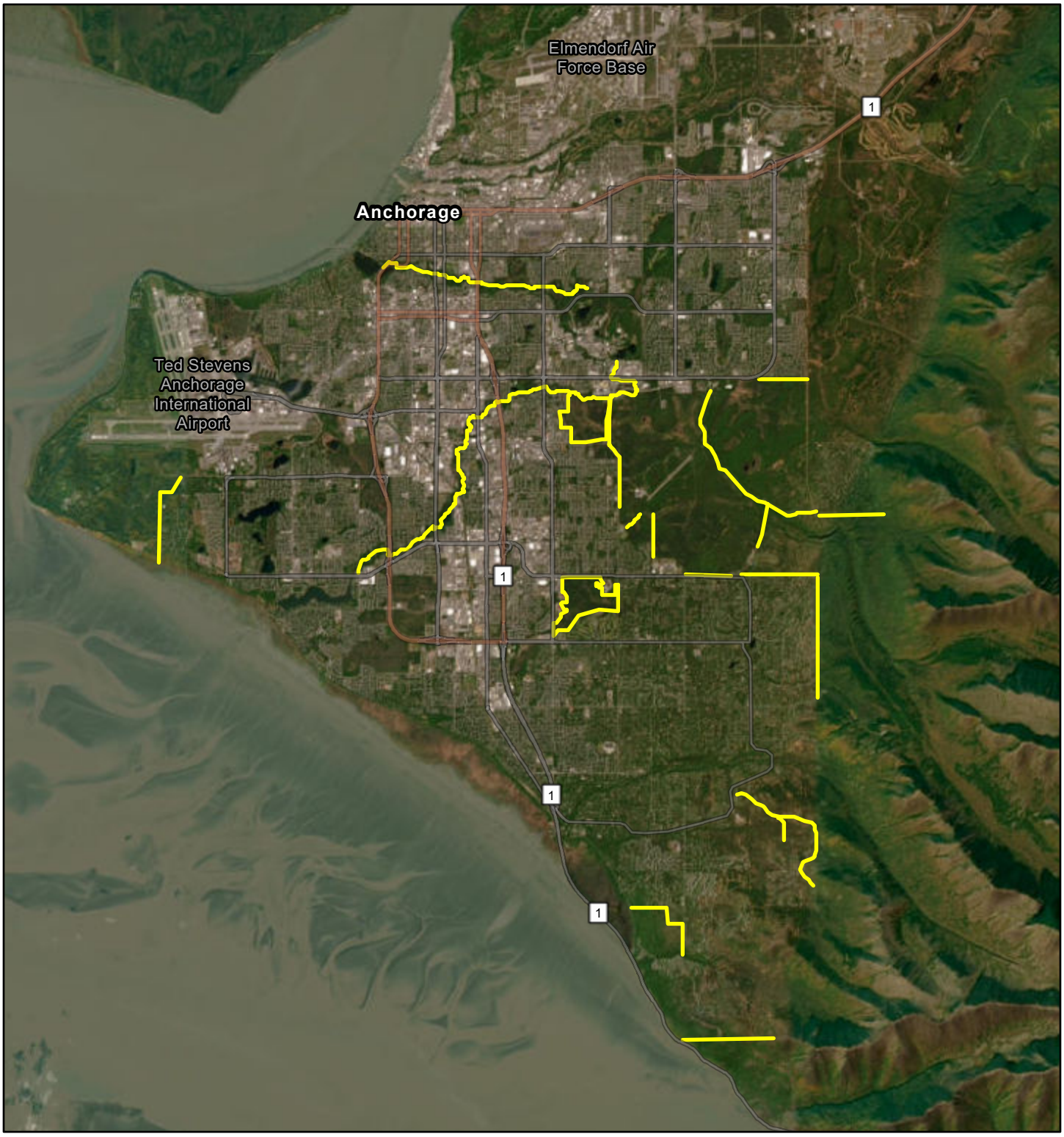



Figure 5 - Recommended Treatments in the Anchorage Bowl

# Recommended Treatments - Anchorage Bowl

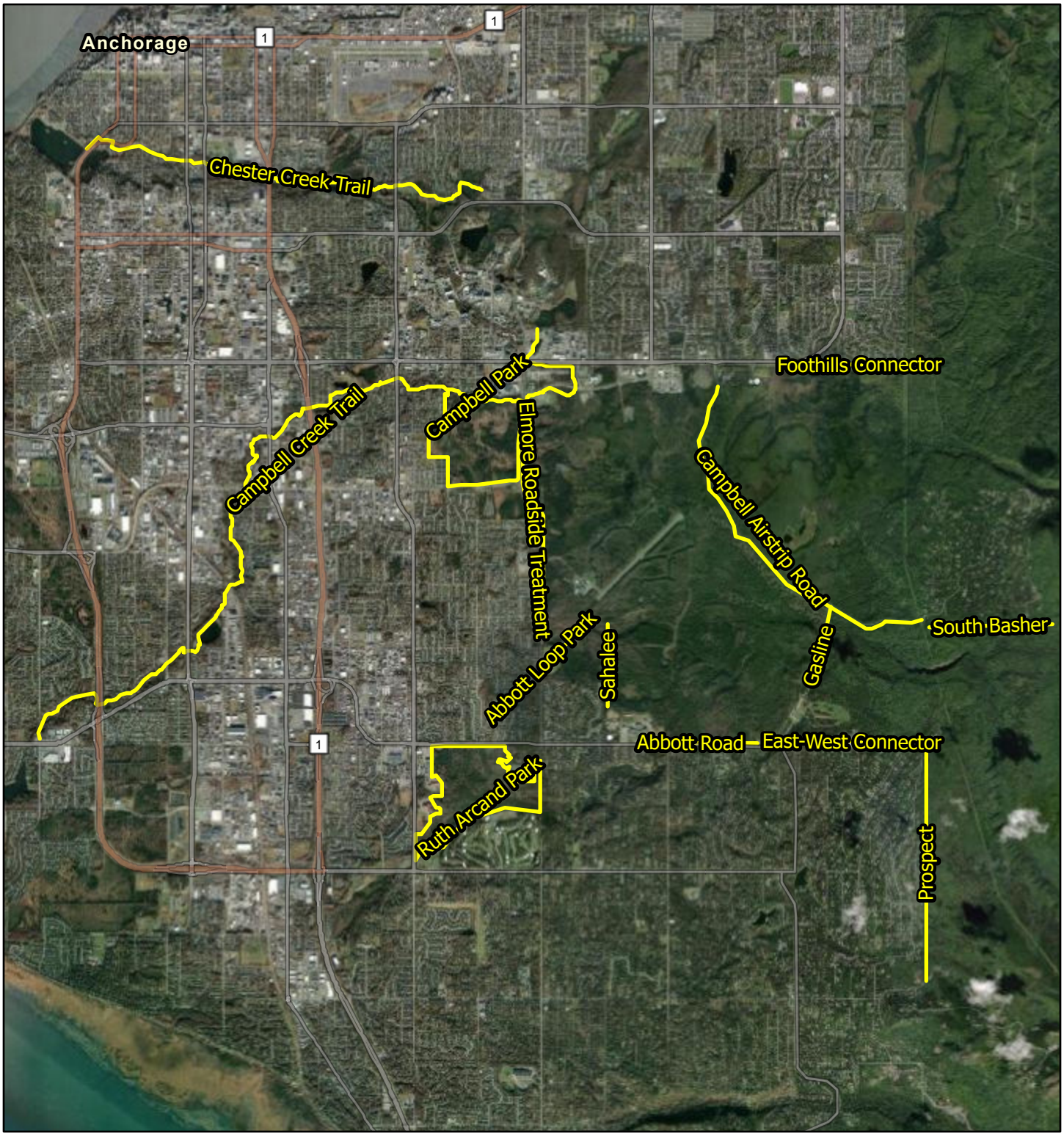



Figure 6 - Recommended Treatments in the Anchorage Bowl Central Area

# Recommended Treatments - Anchorage Bowl

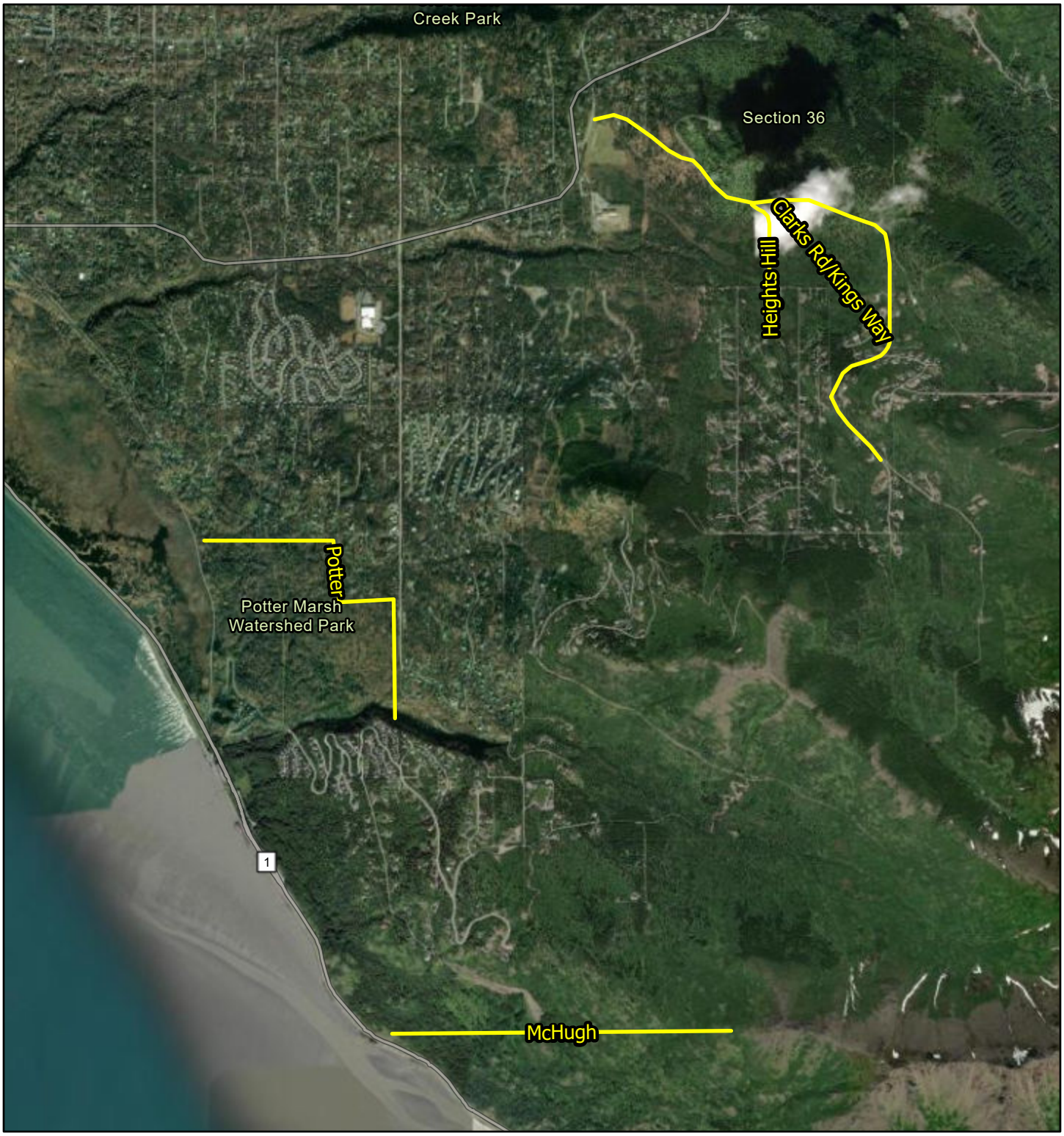



Figure 7 - Recommended Treatments in the Anchorage Bowl Southern Area

# Recommended Treatments - Anchorage Bowl


Figure 8 - Recommended Treatments in the Anchorage Bowl Western Area

# Appendix D – Mitigation Recommendations

## Proposed Fuels Reduction Treatments

| Name | Description | Method | Maintenance | Landowners & Managers |
|---|---|---|---|---|
| Abbott Loop Park | 150-foot Shaded Fuel Break | 75 feet from trail centerline, a combination of hand and mechanical removal of standing dead and downed trees, along with low-level fuels up to 8 ft from the ground. In mixed white spruce and hardwood areas, remove spruce trees under 18 in DBH, limb ladder fuels to 8 ft, and thin hardwoods to a 10 ft crown spacing to form a shaded fuel break. In black spruce stands, 25 ft clumps are maintained with 30-50 ft of spacing in a mosaic pattern. | 4-7 years | MOA Parks & Recreation |
| Campbell Creek Trail | 150-foot Shaded Fuel Break | Targeted fuel reduction to create defensible buffer 75-feet from centerline, on both sides of the trail. Selective thinning of black spruce, preservation of healthy birch, limbing of conifers, removal of ladder fuels, treatment of debris, minimize disturbance, follow best practices for wildfire mitigation and align with municipal standards for defensible space and public land stewardship | 4-7 years | Heritage Land Bank, MOA Parks & Recreation, Great Land Trust |
| Campbell Park | 200-foot Shaded Fuel Break | Mechanical removal of standing dead and downed trees, along with low-level fuels up to 8 ft from the ground. In mixed white spruce and hardwood areas, remove spruce trees under 18 in DBH, limb ladder fuels to 8 ft, and thin hardwoods to a 10 ft crown spacing to form a shaded fuel break. In black spruce stands, 25 ft clumps are maintained with 30-50 ft of spacing in a mosaic pattern. Campbell Creek trail serves as a centerline for the northern boundary of this treatment. | 4-7 years | Heritage Land Bank, MOA Parks & Recreation |

# Appendix D – Mitigation Recommendations

| Name | Description | Method | Maintenance | Landowners & Managers |
|---|---|---|---|---|
| Chester Creek Trail | 150-foot Shaded Fuel Break | Targeted fuel reduction to create defensible buffer 75-feet from centerline, on both sides the trail. Selective thinning of black spruce, preservation of healthy birch, limbing of conifers, removal of ladder fuels, treatment of debris, minimize disturbance, follow best practices for wildfire mitigation and align with municipal standards for defensible space and public land stewardship | 4-7 years | MOA Parks & Recreation, State of Alaska |
| Foothills Connector | 200-foot Shaded Fuel Break | Mechanical removal of standing dead and downed trees, along with low-level fuels up to 8 ft from the ground. In mixed white spruce and hardwood areas, remove spruce trees under 18 in DBH, limb ladder fuels to 8 ft, and thin hardwoods to a 10 ft crown spacing to form a shaded fuel break. In black spruce stands, 25 ft clumps are maintained with 30-50 ft of spacing in a mosaic pattern. | 4-7 years | MOA Parks & Recreation |
| Gasline | 200-foot Shaded Fuel Break | Combination of hand and mechanical removal of standing dead and downed trees, along with low-level fuels up to 8 ft from the ground. In mixed white spruce and hardwood areas, remove spruce trees under 18 in DBH, limb ladder fuels to 8 ft, and thin hardwoods to a 10 ft crown spacing to form a shaded fuel break. In black spruce stands, 25 ft clumps are maintained with 30-50 ft of spacing in a mosaic pattern. | 4-7 years | MOA Parks & Recreation |
| McHugh | 200-foot Shaded Fuel Break | Mechanical removal of standing dead and downed trees, along with low-level fuels up to 8 ft from the ground. In mixed white spruce and hardwood areas, remove spruce trees under 18 in DBH, limb ladder fuels to 8 ft, and thin hardwoods to a 10 ft crown spacing to form a shaded fuel break. In black spruce stands, 25 ft clumps are maintained with 30-50 ft of spacing in a mosaic pattern. | 4-7 years | State of Alaska |

# Appendix D – Mitigation Recommendations

| Name | Description | Method | Maintenance | Landowners & Managers |
|---|---|---|---|---|
| Potter | 200-foot Shaded Fuel Break | Mechanical removal of standing dead and downed trees, along with low-level fuels up to 8 ft from the ground. In mixed white spruce and hardwood areas, remove spruce trees under 18 in DBH, limb ladder fuels to 8 ft, and thin hardwoods to a 10 ft crown spacing to form a shaded fuel break. In black spruce stands, 25 ft clumps are maintained with 30-50 ft of spacing in a mosaic pattern. | 4-7 years | AWWU, Heritage Land Bank, MOA Parks & Recreation, Great Land Trust |
| Prospect | 200-foot Shaded Fuel Break | Mechanical removal of standing dead and downed trees, along with low-level fuels up to 8 ft from the ground. In mixed white spruce and hardwood areas, remove spruce trees under 18 in DBH, limb ladder fuels to 8 ft, and thin hardwoods to a 10 ft crown spacing to form a shaded fuel break. In black spruce stands, 25 ft clumps are maintained with 30-50 ft of spacing in a mosaic pattern. | 4-7 years | State of Alaska |
| Ruth Arcand Park | 200-foot Shaded Fuel Break | Along the perimeter of Ruth Arcand Park, create a 200' wide shaded fuel break through mechanical removal of standing dead and downed trees, along with low-level fuels up to 8 ft from the ground. In mixed white spruce and hardwood areas, remove spruce trees under 18 in DBH, limb ladder fuels to 8 ft, and thin hardwoods to a 10 ft crown spacing to form a shaded fuel break. In black spruce stands, 25 ft clumps are maintained with 30-50 ft of spacing in a mosaic pattern. | 4-7 years | MOA Parks & Recreation |
| Sahalee | 200-foot Shaded Fuel Break | Mechanical removal of standing dead and downed trees, along with low-level fuels up to 8 ft from the ground. In mixed white spruce and hardwood areas, remove spruce trees under 18 in DBH, limb ladder fuels to 8 ft, and thin hardwoods to a 10 ft crown spacing to form a shaded fuel break. In black spruce stands, 25 ft clumps are maintained with 30-50 ft of spacing in a mosaic pattern. | 4-7 years | MOA Parks & Recreation |

# Appendix D – Mitigation Recommendations

| Name | Description | Method | Maintenance | Landowners & Managers |
|---|---|---|---|---|
| Sand Dunes | 200-foot Shaded Fuel Break | Mechanical removal of standing dead and downed trees, along with low-level fuels up to 8 ft from the ground. In mixed white spruce and hardwood areas, remove spruce trees under 18 in DBH, limb ladder fuels to 8 ft, and thin hardwoods to a 10 ft crown spacing to form a shaded fuel break. In black spruce stands, 25 ft clumps are maintained with 30-50 ft of spacing in a mosaic pattern. | 4-7 years | MOA Parks & Recreation |
| South Basher | 200-foot Retreatment | Mechanical removal of standing dead and downed trees, along with low-level fuels up to 8 ft from the ground. In mixed white spruce and hardwood areas, remove spruce trees under 18 in DBH, limb ladder fuels to 8 ft, and thin hardwoods to a 10 ft crown spacing to form a shaded fuel break. In black spruce stands, 25 ft clumps are maintained with 30-50 ft of spacing in a mosaic pattern. | 4-7 years | State of Alaska |

## Fuels Reduction Retreatments

| Name | Description | Method | Maintenance | Landowners & Managers |
|---|---|---|---|---|
| East-West Connector | 200-foot Retreatment | Mechanical Retreatment, of 2025 fuel treatment, removal of standing dead and downed trees, along with low-level fuels up to 8 ft from the ground. In mixed white spruce and hardwood areas, remove spruce trees under 18 in DBH, limb ladder fuels to 8 ft, and thin hardwoods to a 10 ft crown spacing to form a shaded fuel break. In black spruce stands, 25 ft clumps are maintained with 30-50 ft of spacing in a mosaic pattern. | 4-7 years | MOA Parks & Recreation, State of Alaska |

# Appendix D – Mitigation Recommendations

## Proposed Roadside Treatments

| Name | Description | Method | Maintenance | Landowners & Managers |
|---|---|---|---|---|
| Abbott Road | 175-foot Shaded Fuel Break | 175' from centerline on the north side of Abbott Road: mechanical removal of standing dead and downed trees, along with low-level fuels up to 8 ft from the ground. In mixed white spruce and hardwood areas, remove spruce trees under 18 in DBH, limb ladder fuels to 8 ft, and thin hardwoods to a 10 ft crown spacing to form a shaded fuel break. In black spruce stands, 25 ft clumps are maintained with 30-50 ft of spacing in a mosaic pattern. | 4-7 years | MOA Parks & Recreation |
| Clarks Rd/Kings Way | 300-foot Shaded Fuel Break | 150 feet in both directions, from the centerline of the roadway, mechanical removal of standing dead and downed trees, along with low-level fuels up to 8 ft from the ground. In mixed white spruce and hardwood areas, remove spruce trees under 18 in DBH, limb ladder fuels to 8 ft, and thin hardwoods to a 10 ft crown spacing to form a shaded fuel break. In black spruce stands, 25 ft clumps are maintained with 30-50 ft of spacing in a mosaic pattern. *Special Considerations: If there is opportunity and funding, this fire break could be extended further south into HLB parcel 2-139.* | 4-7 years | Heritage Land Bank, MOA Parks & Recreation, Great Land Trust, 50 Private Property Owners |
| Elmore Roadside Treatment | 200-foot Shaded Fuel Break | On the east side of the road, 200' from centerline, mechanical removal of standing dead and downed trees, along with low-level fuels up to 8 ft from the ground. In mixed white spruce and hardwood areas, remove spruce trees under 18 in DBH, limb ladder fuels to 8 ft, and thin hardwoods to a 10 ft crown spacing to form a shaded fuel break. In black spruce stands, 25 ft clumps are maintained with 30-50 ft of spacing in a mosaic pattern. | 4-7 years | BLM, Heritage Land Bank, MOA Street Maintenance |

# Appendix D – Mitigation Recommendations

| Name | Description | Method | Maintenance | Landowners & Managers |
|---|---|---|---|---|
| Heights Hill | 150-foot Retreatment | Mechanical Retreatment, of 2025 fuel treatment, 150 feet to the east from the centerline of the roadway, removal of standing dead and downed trees, along with low-level fuels up to 8 ft from the ground. In mixed white spruce and hardwood areas, remove spruce trees under 18 in DBH, limb ladder fuels to 8 ft, and thin hardwoods to a 10 ft crown spacing to form a shaded fuel break. In black spruce stands, 25 ft clumps are maintained with 30-50 ft of spacing in a mosaic pattern. | 4-7 years | Heritage Land Bank |

## Roadside Retreatments

| Name | Description | Method | Maintenance | Landowners & Managers |
|---|---|---|---|---|
| Campbell Airstrip Road | 300-foot Retreatment | Mechanical Retreatment, of 2025 fuel treatment, 150 feet from centerline on both sides of the road, maintaining specification of removal of standing dead and downed trees, along with low-level fuels up to 8 ft from the ground. In mixed white spruce and hardwood areas, remove spruce trees under 18 in DBH, limb ladder fuels to 8 ft, and thin hardwoods to a 10 ft crown spacing to form a shaded fuel break. In black spruce stands, 25 ft clumps are maintained with 30-50 ft of spacing in a mosaic pattern. | 4-7 years | Heritage Land Bank, MOA Parks & Recreation |

# Appendix D – Mitigation Recommendations

## Southern Communities

The Southern Communities Treatment Region encompasses areas of development south of the Anchorage bowl, including the Turnagain Arm communities, Girdwood, and Portage. This region is vastly different from others in this study in terms of fuels, topography, climate and distance from mutual aid resources. This area is split between multi-generational homesteads and industry mainstays like Indian Valley Meats, Turnagain Fish Company, and other small businesses. The community of Girdwood is amid a rapid shift from generational single-family ownership to new development, second-home owners, and tourist accommodations. The large number of planned development projects presents an extraordinary opportunity to update infrastructure and expand adequate utility coverage.[1]

Pre-plans for emergency evacuation from the resort area via Alyeska Highway to the intersection at Seward Highway were investigated by Girdwood Fire and Rescue Department in 2023. These plans and their findings should be revisited and integrated into updates of Anchorage's Comprehensive Emergency Operations Plan (CEOP).

State of Alaska Division of Forestry & Fire Protection resources are available for both Initial attack and extended attack. Resources include but are not limited to: Air Attack Platforms, Retardant and water dropping air tankers, wildland fire engines, Helicopters and helitack crews, 10-person suppression modules, 20-person hand crews, Incident commanders and fire line leadership.



[1] https://anchoragechamber.chambermaster.com/news/details/alyeska-resort-receives-greenlight-for-new-ski-village-project-06-14-2024

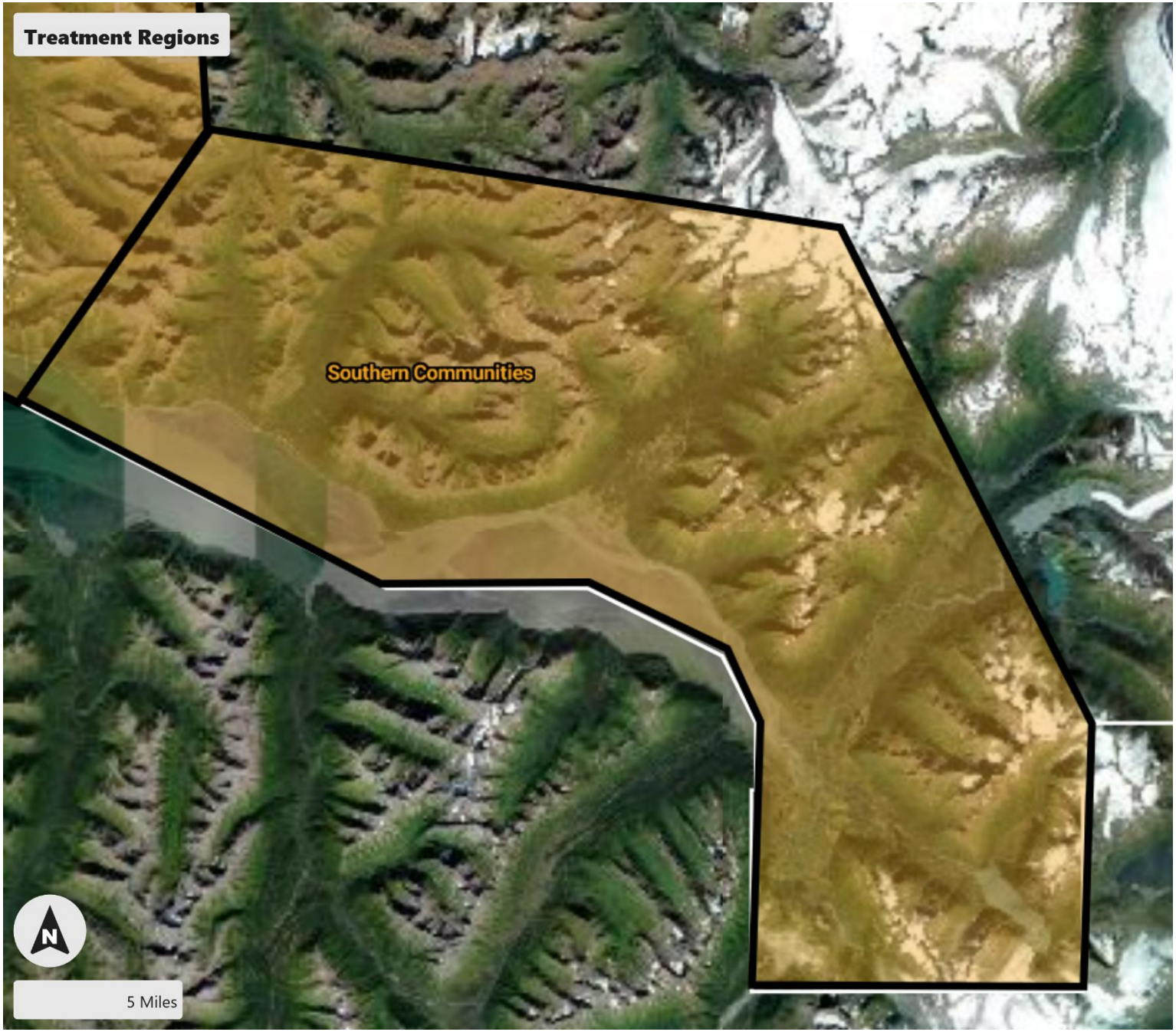



Figure 9 - Southern Communities

# Appendix D – Mitigation Recommendations

## Regional Recommendations

| Recommendation | Goals |
|---|---|
| Fuels reduction and structure hardening of critical infrastructure | Protect critical corridors, clinics, and schools, water utility, power, and communications infrastructure. |
| Increase firefighting capability | Improvements, hydrants and additions to water supply, response pre-planning by annual pre-attack plan reviews, red card training, recruiting events. |
| Apparatus Improvement | Update apparatus and create a modernization and maintenance program. |
| Improve Radio Communications | Improve radio system for adequate communication. |
| Encourage Emergency Notification Sign Up | Create and maintain an education campaign encouraging tourists/vacationers and resort patrons to sign up for emergency notification systems during their time in Alaska. |
| Bolster Evacuation Preparedness | Institute protocols & fire drills for residents and tourism-based businesses. |

# Recommended Treatments - Southern Communities

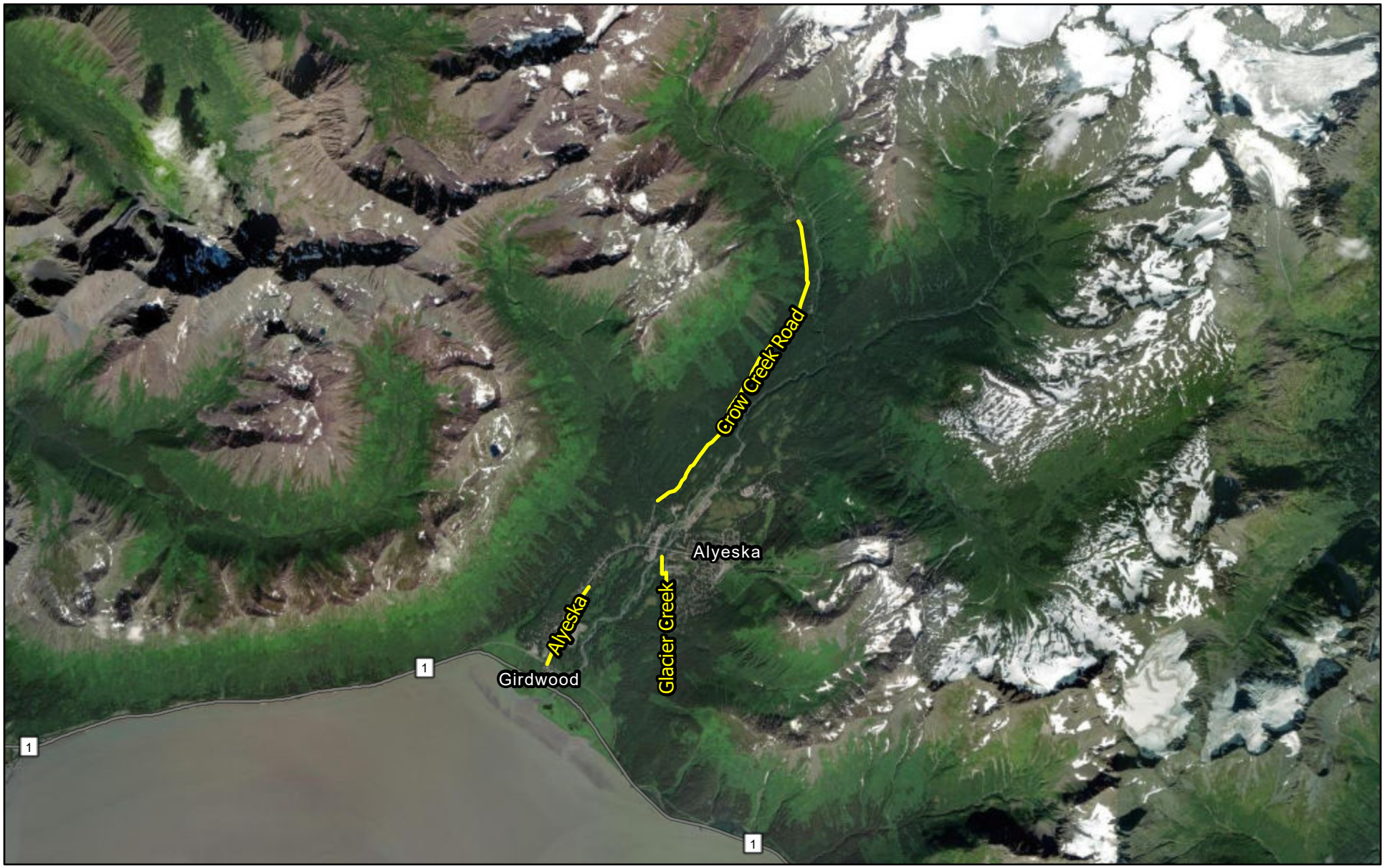



Figure 10 - Recommended Treaments for the Southern Communities

# Appendix D – Mitigation Recommendations

## Proposed Fuels Reduction Treatments

| Name | Description | Method | Maintenance | Landowners & Managers |
|---|---|---|---|---|
| Glacier Creek | 300-foot Shaded Fuel Break | Within 150 feet from private property lines, Mechanical removal of standing dead and downed trees, along with low-level fuels up to 8 ft from the ground. In mixed white spruce and hardwood areas, remove spruce trees under 18 in DBH, limb ladder fuels to 8 ft, and thin hardwoods to a 10 ft crown spacing to form a shaded fuel break. In black spruce stands, 25 ft clumps are maintained with 30-50 ft of spacing in a mosaic pattern. *Special Considerations: The majority of this land is within Heritage Land Bank (HLB) inventory (Parcels 6-057F and 6-039). Land north of Ruane Rd is intended to be developed for mixed-residential use along Alyeska Hwy. Because of that, the retention of mature Sitka Spruce and Cottonwoods is paramount in that area to bolster the success of the residential development. HLB would be prefer a more conservative fuel reduction treatment that focuses on select cutting, limbing and thinning of ground vegetation, rather than full 150ft mastication. HLB would defer preference on clearing of vegetation along Alyeska Hwy south of Ruane Rd to Girdwood Valley Service Area, Girdwood Board of Supervisors and the Girdwood Fire Chief.* | 4-7 years | Heritage Land Bank (Parcels 6-057F & 6-039), Great Land Trust |

# Appendix D – Mitigation Recommendations

## Proposed Roadside Treatments

| Name | Description | Method | Maintenance | Landowners & Managers |
|---|---|---|---|---|
| Alyeska | 200-foot Shaded Fuel Break | On the east side of the road, 200' from centerline, mechanical removal of standing dead and downed trees, along with low-level fuels up to 8 ft from the ground. In mixed white spruce and hardwood areas, remove spruce trees under 18 in DBH, limb ladder fuels to 8 ft, and thin hardwoods to a 10 ft crown spacing to form a shaded fuel break. In black spruce stands, 25 ft clumps are maintained with 30-50 ft of spacing in a mosaic pattern. | 4-7 years | AWWU, Heritage Land Bank, US Forest Service |
| Crow Creek Road | 300-foot Shaded Fuel Break & Road infrastructure improvement | Increase road maintenance/resurface intervals. 150' from centerline on both sides of the road, mechanical removal of standing dead and downed trees, along with low-level fuels up to 8 ft from the ground. In mixed white spruce and hardwood areas, remove spruce trees under 18 in DBH, limb ladder fuels to 8 ft, and thin hardwoods to a 10 ft crown spacing to form a shaded fuel break. In black spruce stands, 25 ft clumps are maintained with 30-50 ft of spacing in a mosaic pattern. | 4-7 years | Anchorage School District, Heritage Land Bank, USDA-Chugach National Forest |

# Recommended Action Items - Southern Communities


Figure 11 - Recommended Action Items for the Southern Communities

# Appendix D – Mitigation Recommendations

## Other Action Items

| Name | Description |
|---|---|
| Girdwood Water Availability | 20,000-gallon water cistern |
| Indian Creek Water Availability | 20,000-gallon water cistern |
| Rainbow Emergency Water Availability | Investigate, test and maintain water system |
| Upper Crow Creek Water Availability | 20,000-gallon water cistern |

# Community WIldfire Protection Plan

# Municipality of Anchorage

## Appendix E: Community Engagement

# Appendix E – Community Engagement

## Contents

# Appendix E – Community Engagement

# Community Engagement

Community engagement is a critical component of any Community Wildfire Protection Plan (CWPP). The primary goals of these efforts were to educate, inform, and solicit feedback from community members.

## Public Awareness & Engagement

To support public awareness and engagement around the CWPP, a dedicated webpage was created on the Municipality of Anchorage website: wildfire.muni.org/cwpp. This page was periodically updated throughout the project to provide key information, updates, and resources related to the CWPP. It also serves as the repository for the final CWPP documents, which are available for public access.

## Social Media

Social media played a vital role in outreach. Platforms such as Facebook, Instagram, and YouTube were used to share updates on the CWPP's progress, promote the community engagement survey, announce the public comment period, and encourage residents to review the draft plan and provide feedback. The Anchorage Fire Department (AFD) also uses these channels to share ongoing educational content on wildfire and structure fire safety. Interagency partners frequently amplify messages, through liking and sharing. Paid advertising campaigns were conducted to extend reach and emphasize critical information.


*Figure 1: One of many social media posts made during the CWPP process*

# Appendix E – Community Engagement

As part of the outreach strategy, AFD launched a weekly YouTube series, *Wildfire Wednesdays*, which provides practical tips and insights on wildfire preparedness and risk reduction.


*Figure 2: Image of one Wildfire Wednesday episode that focused on the CWPP*

Community members were encouraged to sign up for email updates through the Municipality's website, ensuring they received periodic alerts and announcements about the project.

## Postcard Campaigns

Postcard campaigns further expanded awareness:

- Spring Campaign: Promoted the *Ready, Set, Go!* public evacuation preparedness program, Smart 911 sign-ups, Firewise participation, ways to contribute to the CWPP, and the spring town hall. This campaign reached 19,019 addresses.
- Fall Campaign: Promoted the fall town hall, CWPP public comment period, and provided teasers for the 2026 season. This campaign reached 23,688 addresses.

These combined efforts ensured that Anchorage residents were informed, engaged, and provided with multiple avenues to participate in shaping wildfire preparedness in their community.

## Community Meetings

To complement online and mail campaigns, the Wildfire Division emphasized in-person engagement, attending more than 125 community meetings and events. The Division partnered with community groups to amplify messaging. It also hosted three events specifically focused on engaging the public in the CWPP process.

One key partner in outreach is the Wildland Urban Interface Community Action Team (WUI-CAT), a community member-led group with a five-faceted purpose statement, including advocating for mitigation funding, promoting fire education, and participating in the development and updates of Anchorage's CWPP[1]. The Wildfire Division attends the monthly WUI-CAT meetings to provide updates to be distributed to the community members the group represents and to gather feedback on priorities identified by the group. The CWPP contractor attended two WUI-CAT meetings through the course of the project to present the CWPP process, answer questions, and obtain direct feedback after the draft was released.

[1]Wildland Urban Interface Community Action Team website: https://sites.google.com/view/wuicat/about

# Appendix E – Community Engagement

The three CWPP-focused meetings were:

1. Spring Town Hall: Held May 19, 2025, at 6:30 PM at the ZJ Loussac Library and live streamed on YouTube (a recording remains available). Promotion included a postcard campaign reaching over 19,000 addresses and a Facebook ad campaign generating more than 131,000 impressions. Presentation slides were also posted online.
2. Fall Northern Communities Wildfire Open House: Held October 28, 6:00-8:00 PM at the Chugiak Volunteer Fire & Rescue Department Station 35. This event was organized in response to community feedback requesting engagement in Chugiak, Eagle River, Eklutna and surrounding neighborhoods.
3. Fall Town Hall: Held November 12, 2025, at 6:00 PM at the Z.J. Loussac Library. Promotion included an October postcard and comprehensive multimedia campaign with paid advertisements on Facebook, Instagram, Google, Hulu, Spotify, as well as a targeted email distribution. The event was live-streamed and remains available for post-event viewing on YouTube.

## Community Response

Community events were well attended and positively received, reflecting a strong public interest in wildfire preparedness and resilience. Residents consistently demonstrated a desire for more education on, and engagement opportunities related to wildfire risk reduction.

In 2025, AFD performed more than 180 free Firewise property assessments, an increase of 174 assessments compared to 2024. These assessments promote community wildfire resilience at the property level, and firefighters used each visit as an opportunity to discuss the CWPP and answer resident questions.

During the Spring Town Hall, a community member asked the expert panel what steps could be taken to ensure that the Wildfire Division becomes a permanent fixture within the Municipality's public safety framework. In response, an Anchorage Assembly member, Mayor, and AFD Fire Chief all emphasized the critical importance of maintaining and supporting a permanent Wildfire Division.

Throughout the CWPP process, the Division was recognized for prioritizing accessibility by attending meetings scheduled after normal business hours. Staff also honored every community request for meetings, presentations, or one-on-one discussions, reflecting the Division's commitment to the community.

# Appendix E – Community Engagement

Education about large-scale hazard fuel mitigation projects was provided at numerous community meetings, and more the seven Community Councils and user groups signed resolutions of support for the three major mitigation projects completed in 2025.

Several community members and organizations took advantage of the Division's "open door policy," meeting individually with staff to gain a deeper understanding of ongoing efforts and future priorities.

## Public Comment Period

The CWPP drafts were made available on November 11, commencing the public comment period which ran through November 30. Large-scale promotion of the public comment period initiated in September and included:

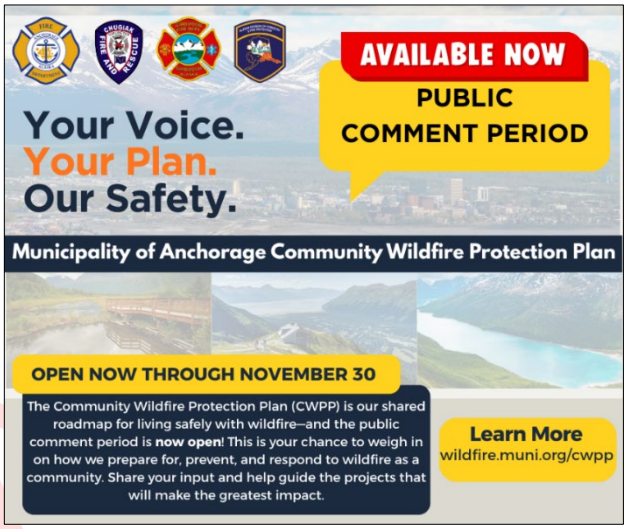



*Figure 3: Social media post announcing public comment period*

- Region-specific flyers distributed to all Community Councils, the Federation of Community Councils, and other community leadership groups, such as HOAs
- Fall postcard campaign and multiple social media announcements, including reminders near the end of the comment period
- Press releases converted into media appearances
- Announcement through the municipality's public notice process
- Reminders through AFD presentations at community council meetings
- Messaging amplification through the project team's networks, to include information distribution by Chugach Electric in a fall billing statement

# Appendix E – Community Engagement

## Community Survey


*Figure 4: Paid Facebook advertisement linking community members to community survey*

An online community survey on wildfire was conducted from March 7 through September 30, 2025. Promotion was extensive and included paid and organic social media campaigns, postcards mailed to residents in the wildland–urban interface throughout the Municipality of Anchorage, a wildfire town hall in May, multiple media engagements, placement on the Wildfire Division's webpage, references in printed materials, and announcements at more than 100 community events attended by the Division.

This analysis presents all survey questions and responses. Free-text responses were summarized, with representative quotes included where appropriate. For questions offering an "other" option, written responses were reviewed and recurring themes were integrated into the analysis. Most questions also provided educational information and links for respondents seeking additional context.

## Demographics

A total of 379 responses were received. Of these, 99% of respondents identified the Municipality as a place they live or both live and work. Responses represented 16 different ZIP codes, with most participants reporting residency within the WUI.

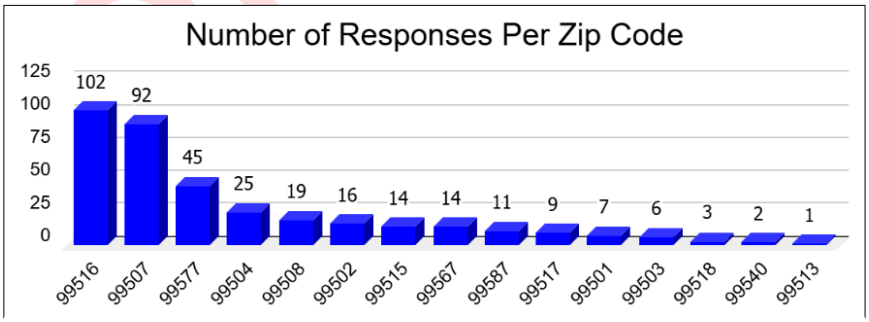



*Figure 5: Number of survey responses by zip code*

# Appendix E – Community Engagement

## Communication & Outreach

Nine survey questions addressed communication and outreach, including preferred information channels, community group participation, and familiarity with wildfire programs. These questions were designed to capture communication preferences, assess current awareness levels, and identify potential partners for engagement—findings that inform the development of a more effective outreach strategy.

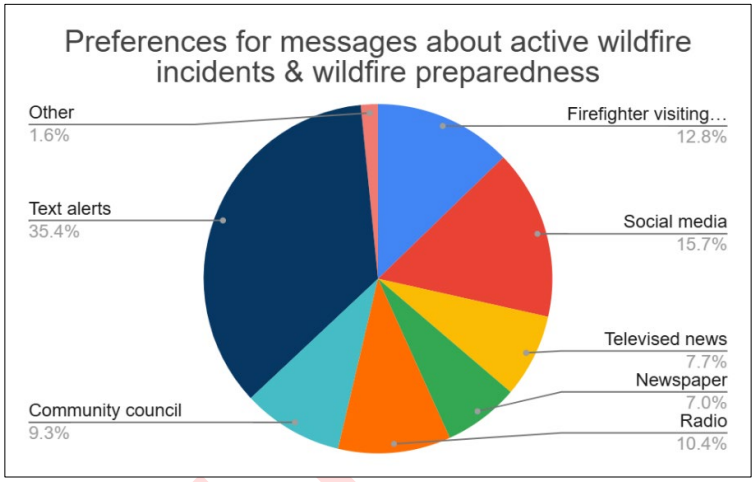



*Figure 6: Communication preferences: active incidents & wildfire preparedness*

Respondents were able to select all communication methods they prefer and indicate the one they consider most effective. For wildfire preparedness and active incident information, 35.4% of respondents identified text alerts as the most beneficial communication method. For general community outreach from the department and its partners, preferences were nearly evenly distributed; however, 30% of respondents selected social media posts as the most beneficial method.

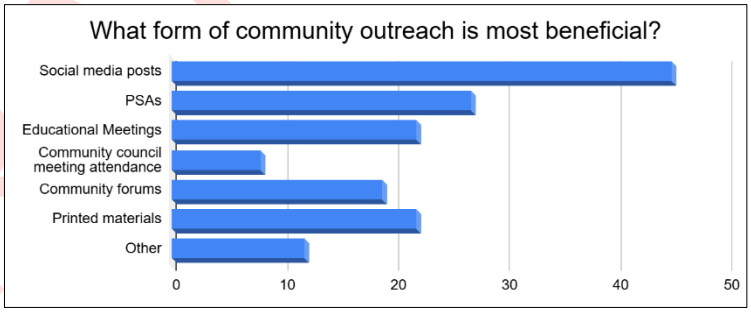



*Figure 7: Communication preferences: community outreach*

# Appendix E – Community Engagement

To assess the effectiveness of the survey's promotion, respondents were asked how they first learned about the survey. The most common response was social media, followed by email and postcards or flyers, which tied as the second most frequently cited sources.

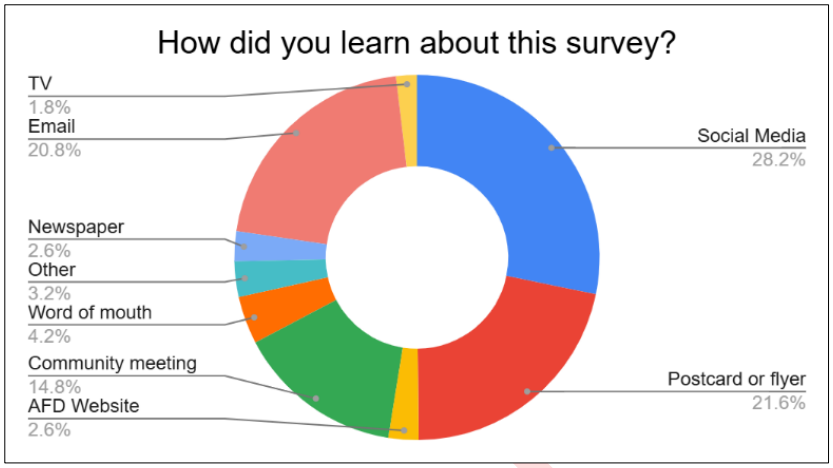



*Figure 8: Assessment of survey promotion effectiveness*

To identify opportunities for future community engagement, respondents were asked which community groups they currently participate in. The most frequently cited affiliations were Community Councils (26%) and recreation groups (25%).

To assess current community awareness of wildfire programs, two related questions were included in the survey. Respondents' understanding of Community Wildfire Protection Plans (CWPP) was most commonly rated at 3 out of 5. Among the 141 respondents who answered the question on wildfire preparedness programs, 121 indicated familiarity with Firewise Alaska and 90 indicated familiarity with Ready, Set, Go!

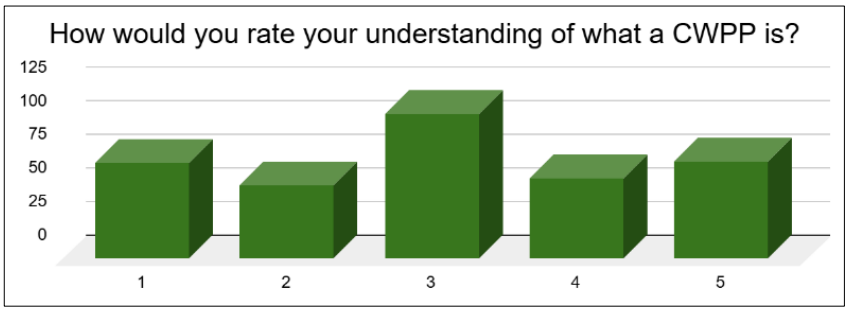



*Figure 9: Community members rated their understanding of what a CWPP is as a 3 out of 5*

# Appendix E – Community Engagement

Specific questions were included to assess awareness and implementation of the Firewise program. Participants were asked whether their property meets Firewise standards and, if not, what barriers prevent them from achieving them. Creation of defensible space is widely recognized as one of the most effective ways individual property owners can contribute to community wildfire resilience and preparedness. Only 14% of respondents indicated that their property is Firewise. Among those who reported their property as not Firewise, the three most common barriers were lack of knowledge about required actions, financial limitations, and lack of time.

Free-text responses also highlighted two recurring themes: some participants cited homeowners' association (HOA) restrictions that limit landscape modifications, while others expressed doubt that individual efforts would be meaningful without broader neighborhood participation.

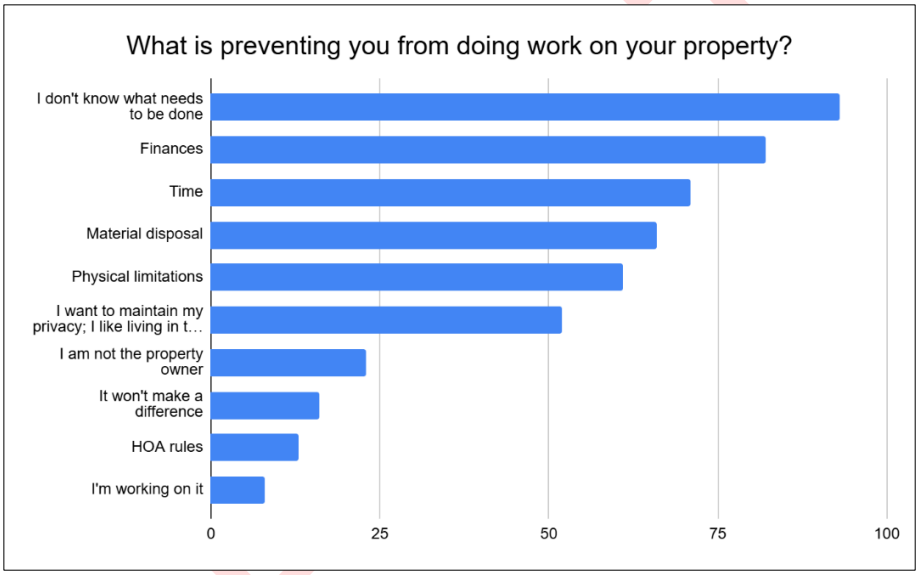



*Figure 10: Community members reported that a lack of knowledge about what actions to take and financial limitations were the primary reasons their property is not Firewise*

## Community Perception

A large portion of the survey focused on community perceptions of overall preparedness, residents' concerns, and recommendations for addressing those concerns. In addition to highlighting challenges and opportunities, respondents shared positive perceptions of local fire management and community engagement. The following narrative summarizes the free-text feedback received, complemented by charts and graphs depicting responses to questions with predefined answer options. Percentages reflect the share of respondents who provided feedback in each category. Because many respondents shared multiple types of feedback, total percentages may exceed 100%.

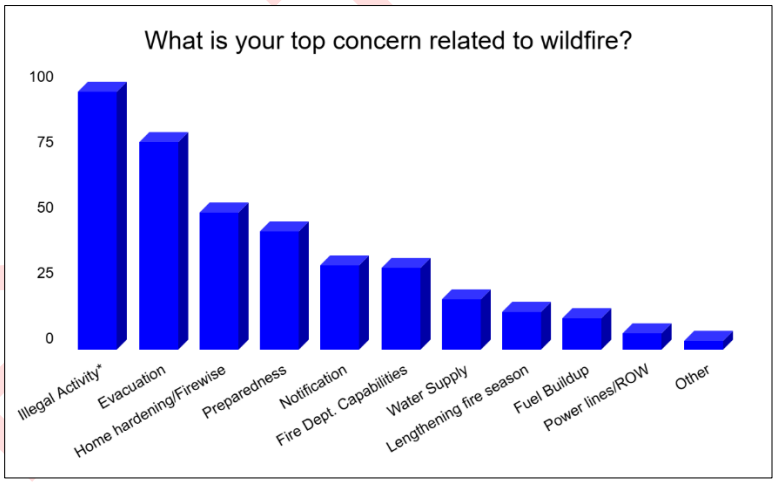
# Appendix E – Community Engagement

**Top Concerns Related to Wildfire**

1. Wildfire ignition and spread (20%): Many respondents cited the risk of wildfire starting from natural causes, human activities, or illegal fires, particularly in areas with high numbers of homeless encampments or recreational fires. Approximately 60% of these respondents specifically identified homeless encampments and illegal fires as a concern. One participant commented, *"Illegal camps in wooded areas need to be outlawed. Between fireworks and homeless, the city has a disaster waiting to happen."*

2. High fuel loads and beetle kill (24%): Dead and dying spruce trees, combined with dense vegetation, were mentioned as critical risk factors. For example, one resident noted, *"We need more firebreaks and more property owners removing brush and fire hazards. There is so much dead or sick trees in the area, and the likelihood of a fire getting out of control is high."*

3. Limited evacuation and emergency access (30%): Respondents expressed concern about neighborhoods with single access routes, especially in hillside and outlying areas. One resident stated, *"We are one road in/out. What are strategies planned in case evacuation is needed?"*




*11: Community concerns. *A wildfire started due to unauthorized or illegal activities within our parks*

4. Inadequate water supply and firefighting infrastructure (10%): Participants noted the need for additional hydrants, water storage, and equipment to support rapid wildfire response. *"AFD needs adequate water supply on the hillside in the form of temporary standing water tanks,"* one participant explained.

5. Community awareness and participation (35%): Many respondents indicated that residents are not fully aware of the risks or the actions they can take to mitigate fire threats. *"The people of Anchorage seem to be remarkably indifferent and unaware,"* a respondent wrote.

# Appendix E – Community Engagement

**Suggested Mitigation Projects and Actions**

Respondents shared a variety of ideas for mitigating wildfire risk, ranging from personal property actions to larger-scale municipal and interagency projects:

1. Defensible space and vegetation management (45%): The most frequently cited actions included creating defensible space on private properties, clearing deadfall, thinning overgrown areas, and establishing fire breaks. *"Thinning, removing dead trees, and vegetation reduction"* was a common theme across responses.

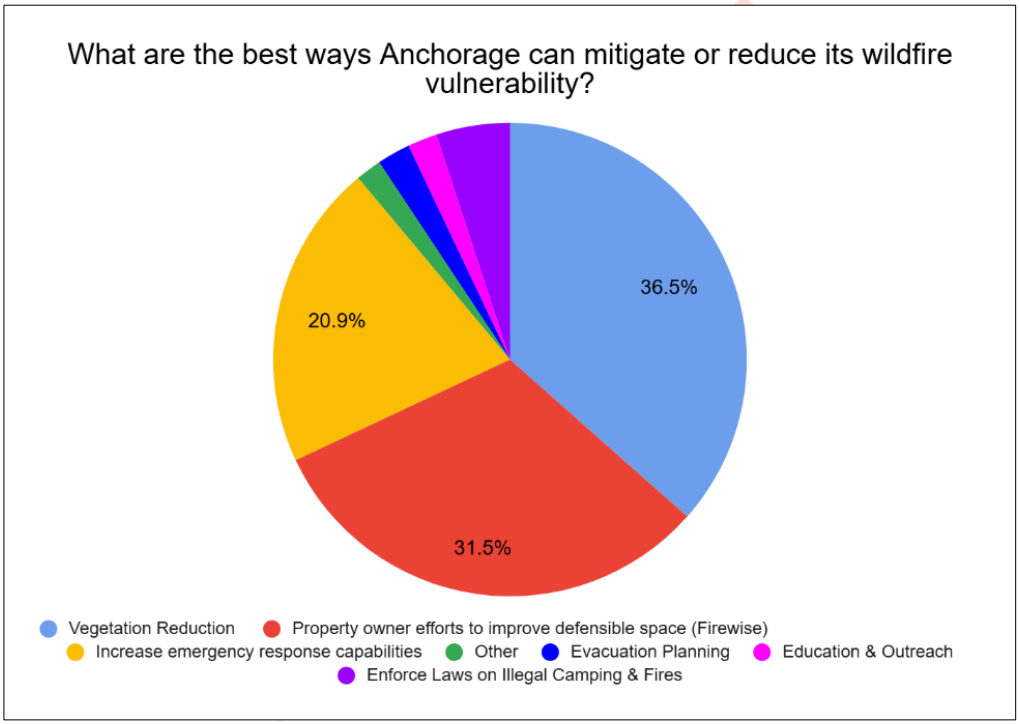



*Figure 12: Community members believe that vegetation reduction and creating defensible space on private properties are the best ways to mitigate or reduce community wildfire vulnerability*

2. Critical infrastructure protection (23%): Residents identified areas that should be prioritized for wildfire mitigation, including electrical lines, water systems, and key municipal facilities. Suggestions included *"Undergrounding electric lines, adding water storage, and keeping illegal camping out"*.

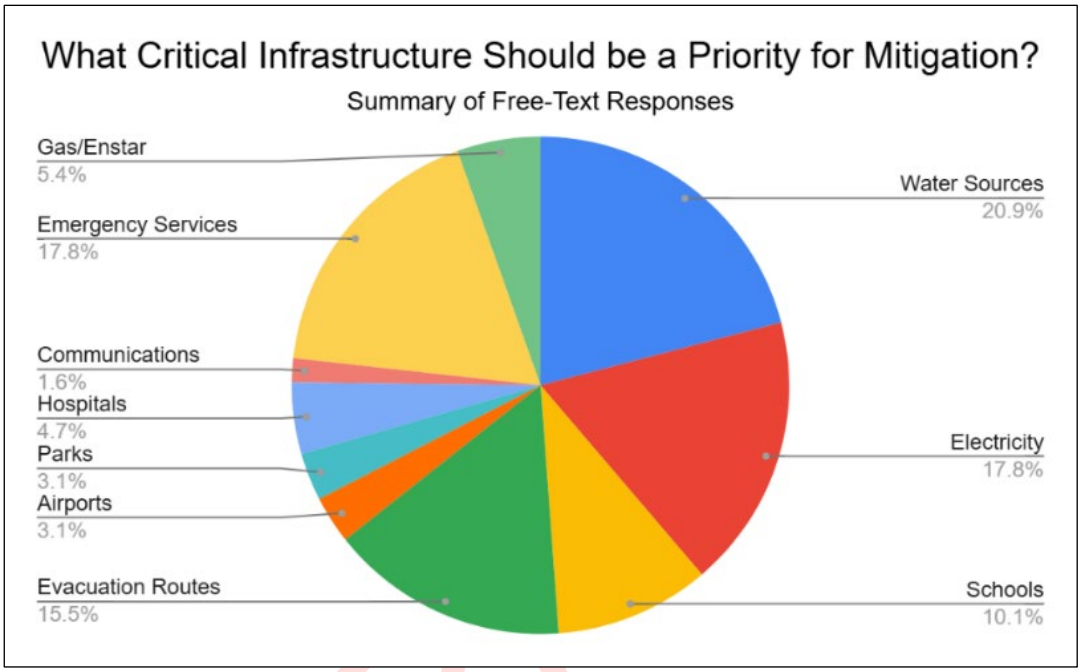



*Figure 13: Important critical infrastructure types – some respondents listed names or locations of specific infrastructure falling within these categories*

3. Community engagement and education (30%): Respondents recommended expanding public outreach through schools, workshops, and direct door-to-door communication. Several emphasized engaging youth: *"Talk to the elementary and high school students. They'll take the info home to their parents."*

4. Law enforcement and enforcement of fire restrictions (25%): Some respondents noted the importance of stricter enforcement against illegal fires and homeless campfires. *"All the homeless encampments in the woods around the city. Fires have been happening and we have been lucky they haven't spread to neighborhoods."*

# Appendix E – Community Engagement

**Perceptions About Wildfire Preparedness**

Responses indicate mixed perceptions of how prepared Anchorage is for a wildfire incident:

1. Confidence in local fire personnel (12%): Residents expressed trust in the expertise and professionalism of the Anchorage Fire Department and affiliated agencies. *"Our firefighters and wildfire fighters seem to do a pretty good job,"* and *"The best preparation is prevention, so I can't rate any higher because the rate of fires that are caused by preventable causes is too high."*

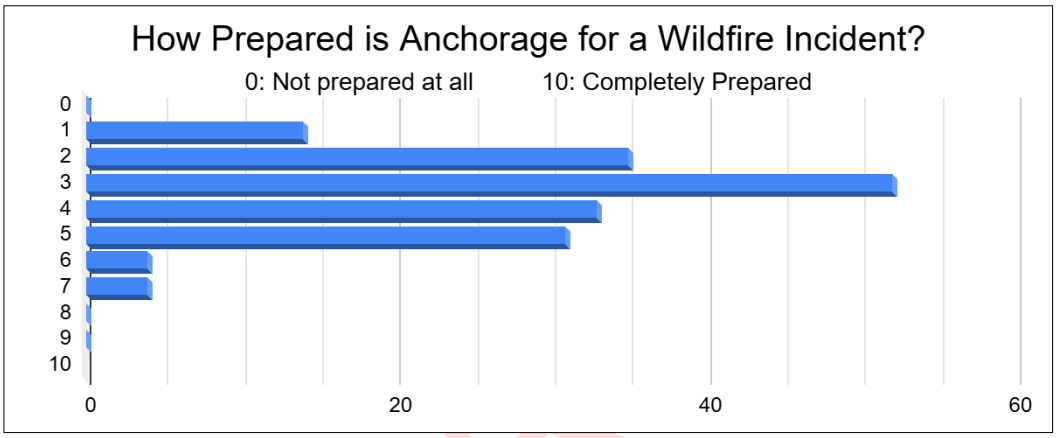



*Figure 14: Respondents rated Anchorage's overall wildfire preparedness as 3 out of 10*

2. Concerns about capacity and resources (23%): While local agencies are trusted, concerns about staffing, equipment, and water access were expressed, particularly for large-scale events or wind-driven fires. *"A large wildfire driven by winds on the hillside is beyond AFD capability."*

**Positive Feedback and Recognition**

Despite the concerns, respondents also provided positive feedback on efforts being made to reduce wildfire risk.

1. Recognition of fire personnel (40%): Respondents highlighted confidence in local fire teams and their capability to manage wildfire events. *"I have family members retired AFD; the department is great"* and *"I know AFD, GFD, and SOA Forestry do a great job."*

2. Support for education and CWPP updates (29%): Improvements in public outreach and communication was acknowledged. *"The CWPP will be a huge step forward in preparing Anchorage"* and *"We appreciate the updates from AFD at the ERVCC meetings!"*

3. Visible mitigation efforts (23%): Respondents noted that vegetation management, firebreak creation, and debris removal are being observed and appreciated in their neighborhoods. *"Dead tree removal in parks has been huge and now there's enough buzz about it that property owners might be doing more."*
4. General encouragement and gratitude (27%): Respondents shared appreciation for the work being done. *"Thank you for all your time and effort!"* and *"Your work matters and is appreciated!"*

### Summary and Implications for CWPP Implementation

The qualitative feedback illustrates that Anchorage residents are aware of wildfire risks, recognize progress, but also remain concerned about capacity, funding, and community awareness. These insights complement quantitative survey findings, offering rich context for prioritizing projects, outreach strategies, and policy actions. Key implications include:

1. Focus on vegetation management and defensible space for both private properties and public lands.
2. Prioritize critical infrastructure protection, especially in neighborhoods with limited access and high wildfire vulnerability.
3. Increase public education and engagement, leveraging schools, community councils, and targeted outreach to non-English speakers.
4. Enhance enforcement and prevention measures, particularly regarding illegal fires and homeless campfires.
5. Expand funding and technical support, including homeowner assistance programs and agency resource augmentation.
6. Establish a permanent Wildfire Division.

Collectively, this feedback reinforces the importance of multi-layered wildfire mitigation strategies that combine community involvement, agency coordination, and proactive planning to enhance resilience across Anchorage. See the recommendations section in the *Main Document* and *Appendix D: Mitigation Recommendations* for strategies developed in response to these implications.

# Appendix E – Community Engagement

## Conclusion

The extensive community engagement efforts described in this appendix—including online and mail campaigns, social media outreach, community meetings, targeted events, and the survey analysis—provided Anchorage residents multiple opportunities to learn about, participate in, and provide feedback on the CWPP process. Input collected through these efforts directly informed the identification of wildfire risks, priorities, and recommended mitigation strategies included in the plan.

The Anchorage Fire Department and project partners greatly appreciate the time, insights, and collaboration of community members, community councils, and organizations such as WUI-CAT. Their contributions ensured that the CWPP reflects the needs, concerns, and priorities of the community it is designed to serve.

Overall, this appendix demonstrates that Anchorage's CWPP was developed through a transparent, inclusive, and data-informed process, providing a strong foundation for implementing wildfire preparedness, mitigation, and resilience actions throughout the municipality.