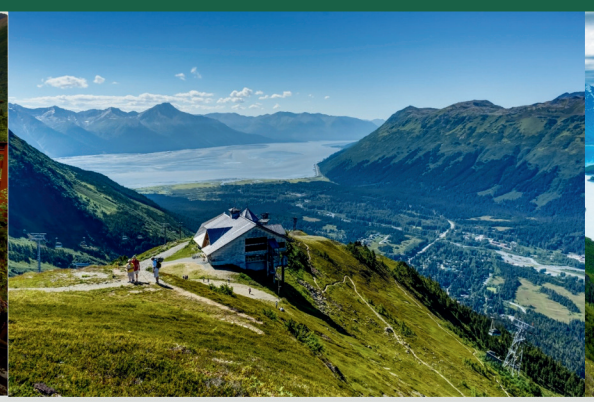
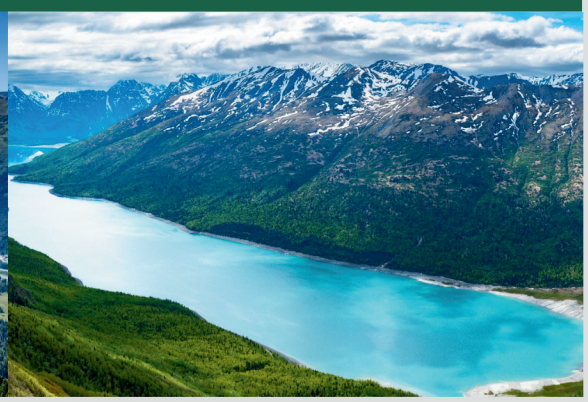
DECEMBER 2025

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.

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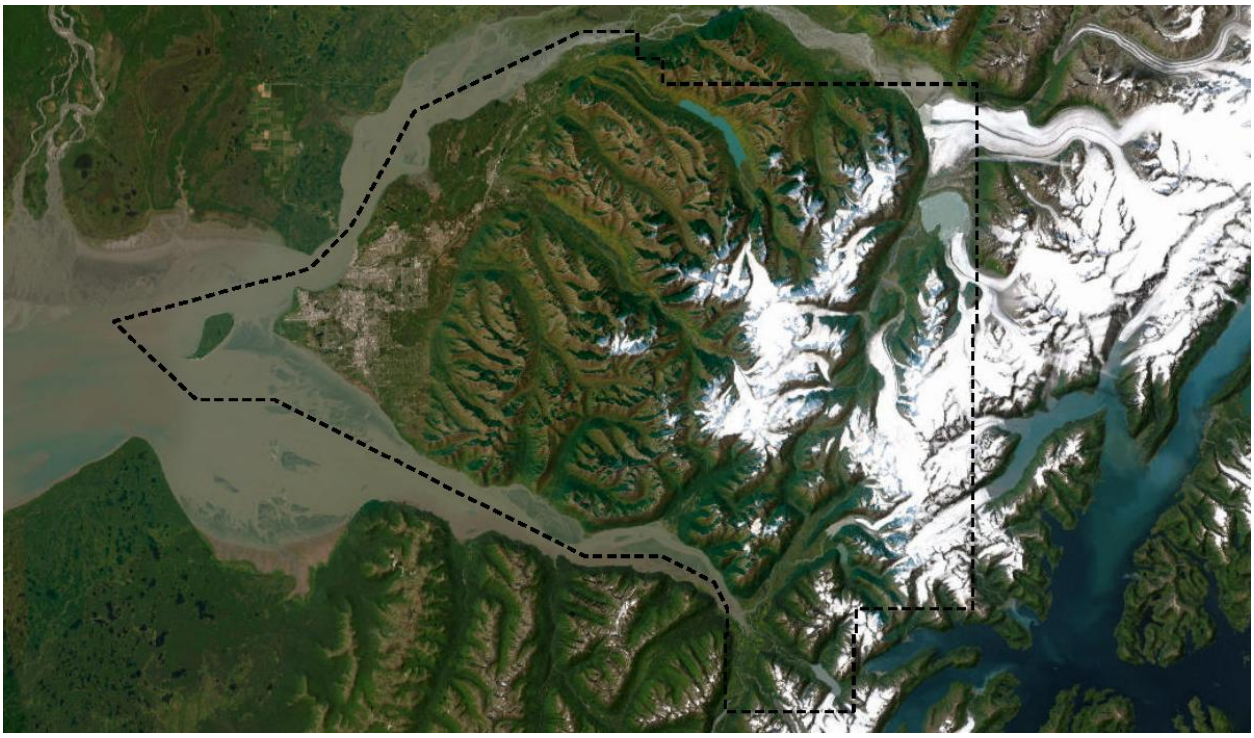


Figure 1 – Municipality of Anchorage CWPP AOI[1]

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. Wildfire activity in Alaska has risen sharply over the past 60 years. From 12.9 million acres burned between 1965-1984, totals nearly doubled to 23.4 acres from 1985-2004. The most recent period, 2005-2024, reached a record of 26.1 million acres, showing a clear trend toward larger, more volatile, and longer fire seasons.[3] 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

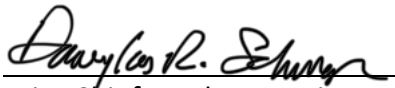
The Municipality of Anchorage Community Wildfire Protection Plan (MOA CWPP) has been developed under the following guidelines:

- 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:

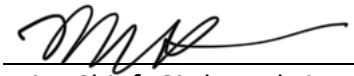
Mayor of Anchorage

Chair, Anchorage Assembly



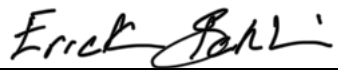
Fire Chief, Anchorage Fire Department

Fire Chief, Chugiak Volunteer Fire and Rescue Department

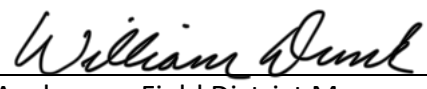


Fire Chief, Girdwood Fire and Rescue Department

Director, Anchorage Office of Emergency Management



Forest and Fire Management Officer, US Forest Service



Anchorage Field District Manager, Bureau of Land Management

Norm McDonald 12/09/2025

Deputy Director: Fire Protection, Alaska Division of Forestry & Fire Protection

In accordance with State of Alaska Division of Forestry & Fire Protection (DFFP) 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

In addition to the organizations listed above, community groups such as the Anchorage Hillside Home and Landowners Organization (HALO), Federation of Community Councils, and Wildfire Urban Interface Community Action Team (WUI-CAT) participated in the development of this plan through providing feedback and supporting community outreach.

INTRODUCTION

About this Report

This Community Wildfire Protection Plan (CWPP) was developed, as an update and enhancement of the CWPP that was last updated in 2007, for the Municipality of Anchorage in collaboration with the Anchorage Fire Department (AFD), the State of Alaska Division of Forestry & Fire Protection (DFFP), and other interagency partners.[4] 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, the term "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.

[4] https://www.muni.org/departments/fire/wildfire/documents/cwpp_lowres_jan8-08.pdf

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.[5] 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.[6]*

Additionally, the Alaska Interagency Wildland Fire Management Plan[7,] 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:

[5] https://www.fs.usda.gov/projects-policies/hfi/field-guide/web/page02.php
[6] ibid
[7] 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

- *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 economic, social, and resource values identified for protection.*[8]

Wildland fire management in Alaska is a cooperative undertaking involving federal, state, local, tribal, 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.[9]

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. .[10]

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.[11]

[8] https://fire.ak.blm.gov/content/aicc/Alaska%20Statewide%20Master%20Agreement/2.%20Alaska%20Statewide%20Operating%20Plan/Alaska%20Statewide%20Operating%20Plan.pdf
[9] Ibid
[10] https://ready.alaska.gov/Documents/Mitigation/SHMP/2023 State of Alaska Hazard Mitigation Plan.pdf
[11] https://ready.alaska.gov/Documents/Mitigation/SHMP/2023 State of Alaska Hazard Mitigation Plan.pdf

Jurisdiction agencies (as identified in the AMA) 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.[12]

Protecting agencies (as identified in the AMA) 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).[13]

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.*

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

3. *Safe, Effective, Risk-based Wildland fire Response – All jurisdictions participate in making and implementing safe, effective, efficient risk-based wildland fire management decisions.*[14]

Ultimately, the Community Wildfire Protection Plan (CWPP) process aligns with the goals outlined by the National Cohesive Strategy and the State of Alaska FAP, and offers prescriptive recommendations based on feedback gathered at the community level, while also referencing Fire Management Response Guidance from the Alaska Interagency Wildland Fire Management Plan (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.[15] 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.

[14] https://www.forestsandrangelands.gov/documents/strategy/natl-cohesive-wildland-fire-mgmt-strategy-addendum-update-2023.pdf
[15] 2020 Census-Census Tract Reference Map

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.

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 *Appendix C: Methodology* and *Appendix A: Suppression Planning Units*.

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.[16] 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.

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

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 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)[17].

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

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

- *Appendix A: Suppression Planning Units.* 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.[18] 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.[19]

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 differences are presented in the sections

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

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.

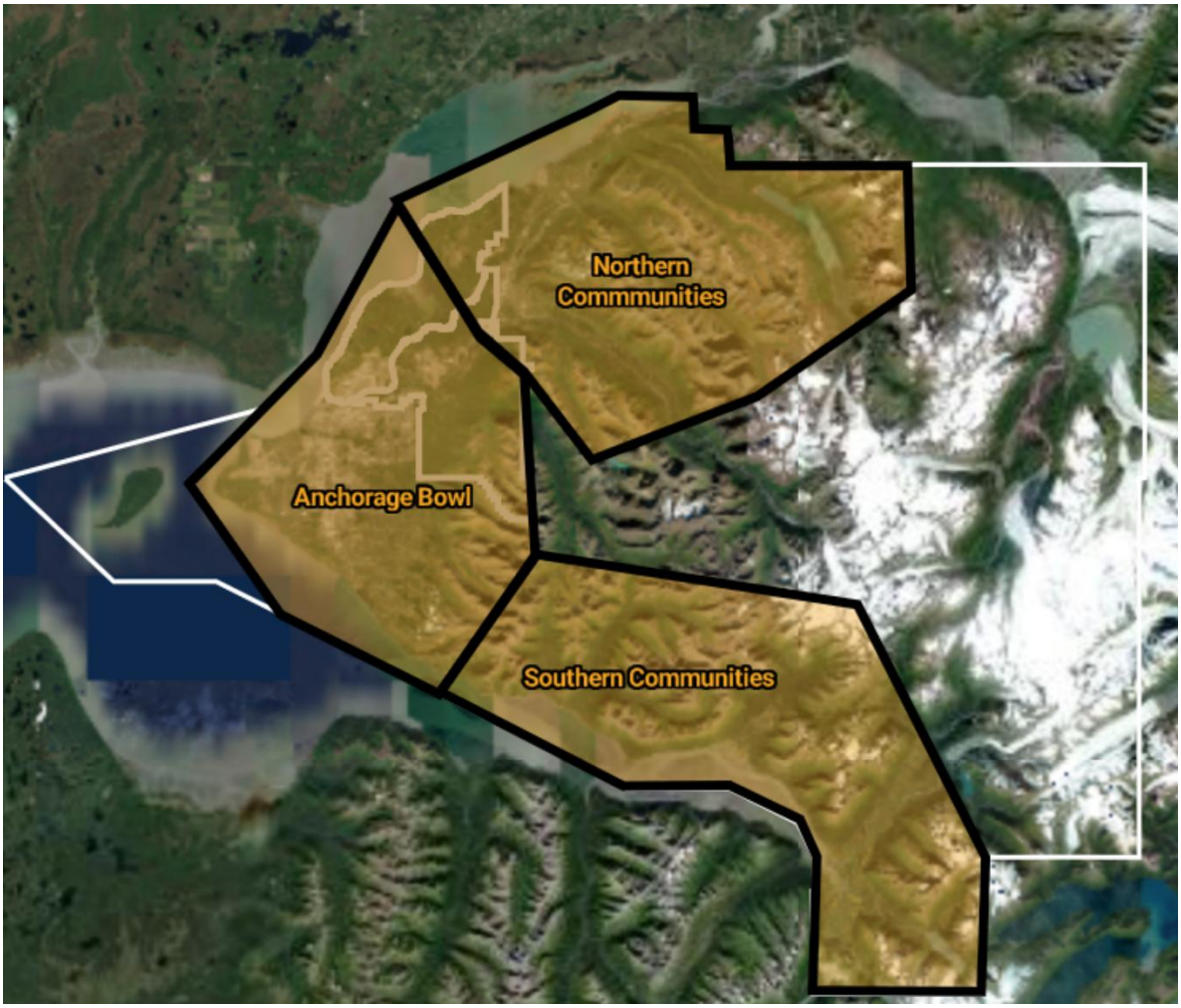


Figure 2 – MOA Treatment Regions[20]

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.

[20] 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.[21] 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. Wood forests containing white spruce, black spruce, paper birch, and aspen. Depending on fuel composition and structure, these areas can support rapid fire spread and facilitate crown fire transition. 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.[22]

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.[23] 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.[24]

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

Anchorage is also home to Joint Base Elmendorf-Richardson (JBER), a US Military installation which encompasses 73,041 acres and maintains $15 billion in built infrastructure. JBER provides expeditionary combat support and training to nearly 12,000 deployable Soldiers and Airmen, ensuring JBER remains The estimate of economic impact totals over $4.2 million for fiscal year 2024 as of December 20, 2024.[25]

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.[26] 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.[27] 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.

[25] https://www.jber.jb.mil/Portals/144/Info/EconomicImpact/FY24%20JBER%20EIA%20-%20Full%20Report.pdf
[26] U.S. Census Bureau. *Decennial Census* (2020).
[27] 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[28]

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

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

Anchorage Community Councils

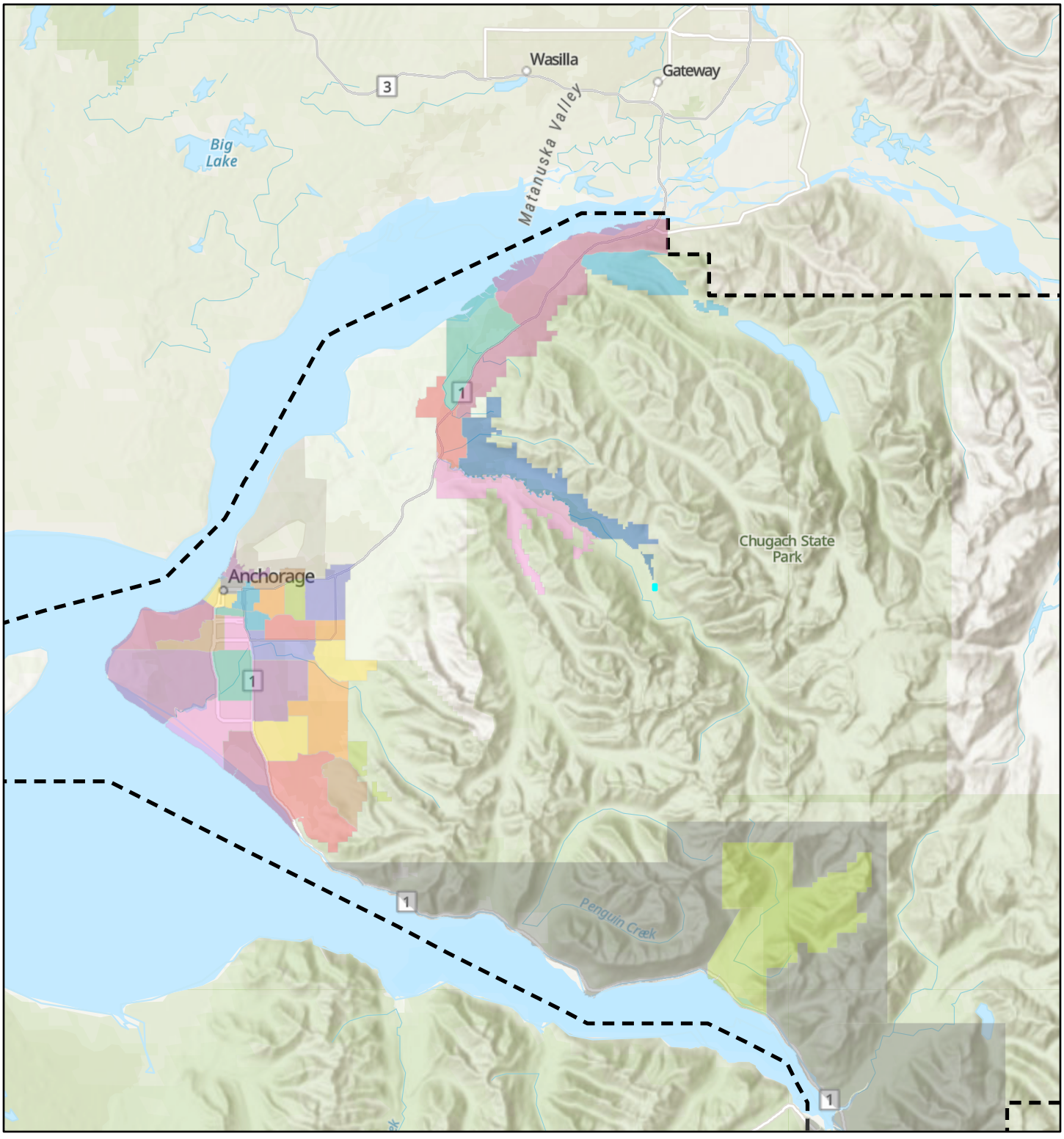


Figure 3 - MOA Community Councils

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

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.[29] [30] The State of Alaska manages extensive lands in the Chugach State Park system and along critical transportation corridors.[31] 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.[32]

Table 2 - Land Ownership Distribution in the MOA[33]

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

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

BLM AK Administered Lands, Public Land Administration, Anchorage Bowl

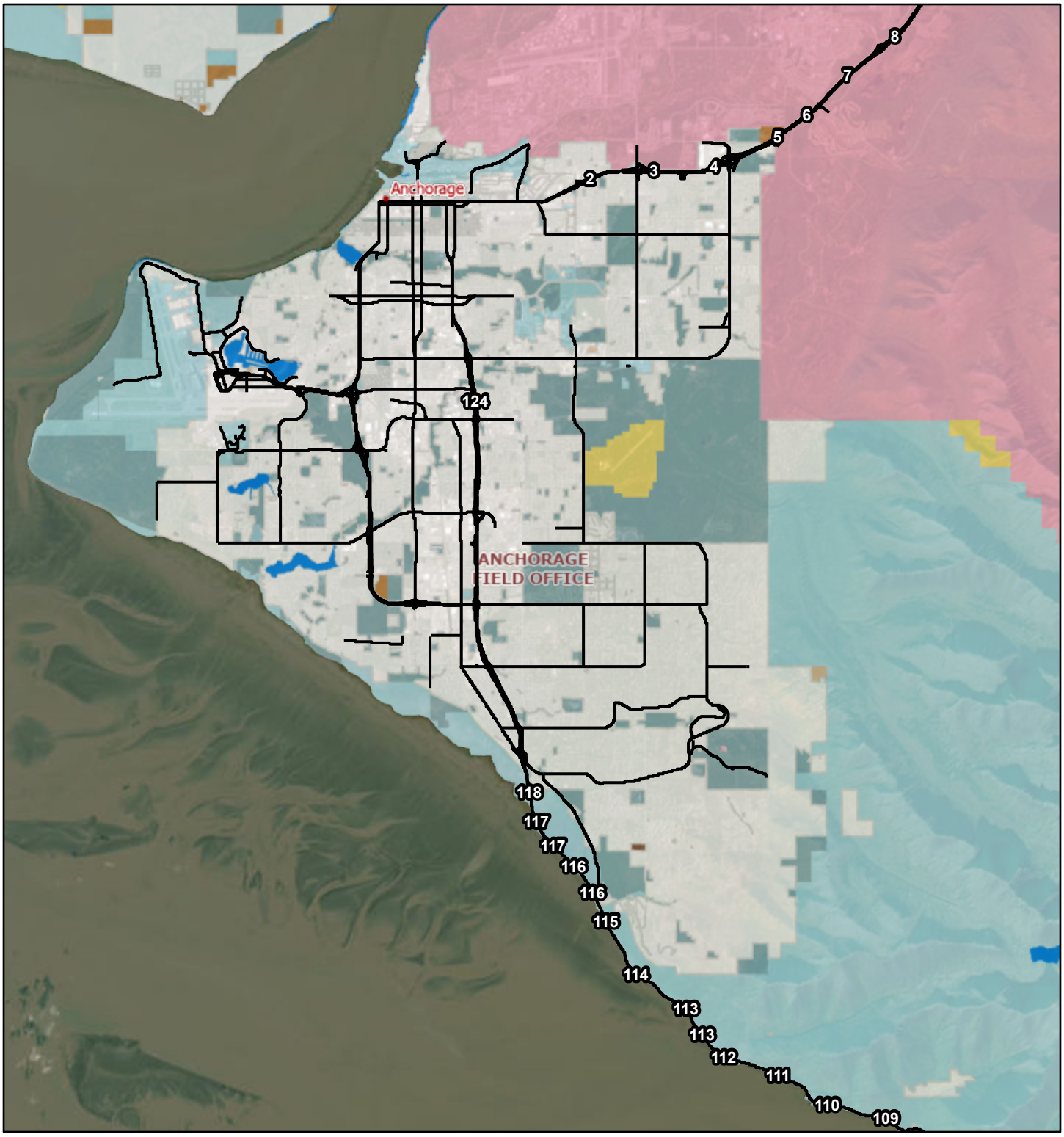


Figure 3 - BLM AK Administered Lands - Anchorage Bowl

AK Place Name
Federally Listed Tribe Location
Road (DOT)
BLM AK Administrative Unit Boundary (Label)
BLM AK Administered Lands (SMA)
Bureau of Land Management
Department of Defense
Other Federal
State
Local Government
Native Allotment
Native Lands
Private
Water

This map is maintained by BLM. All ownership boundaries should be confirmed with landowners and managers within and adjacent to the boundaries of mitigation projects as part of the planning process prior to project start.

BLM AK Administered Lands, Public Land Administration, Northern Communities

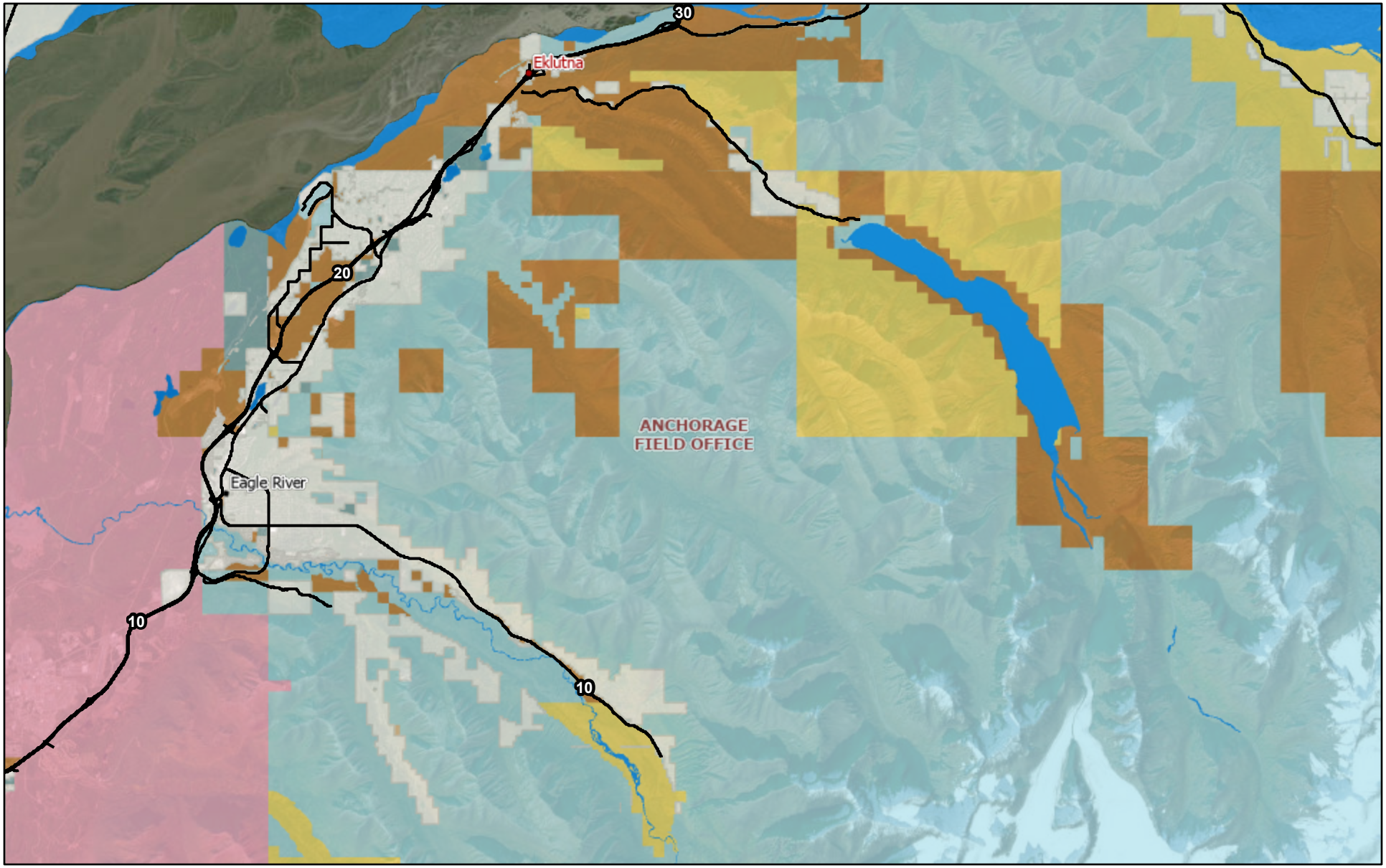


Figure 4 - BLM AK Administered Lands - Northern Communities

AK Place Name
- Place Name
- Federally Listed Tribe Location
- Road (DOT)
- BLM AK Administrative Unit Boundary (Label)

BLM AK Administered Lands (SMA)
- Bureau of Land Management
- Department of Defense
- Other Federal
- State
- Local Government
- Native Allotment
- Native Lands
- Private
- Water

This map is maintained by BLM. All ownership boundaries should be confirmed with landowners and managers within and adjacent to the boundaries of mitigation projects as part of the planning process prior to project start.

BLM AK Administered Lands, Public Land Administration, Southern Communities

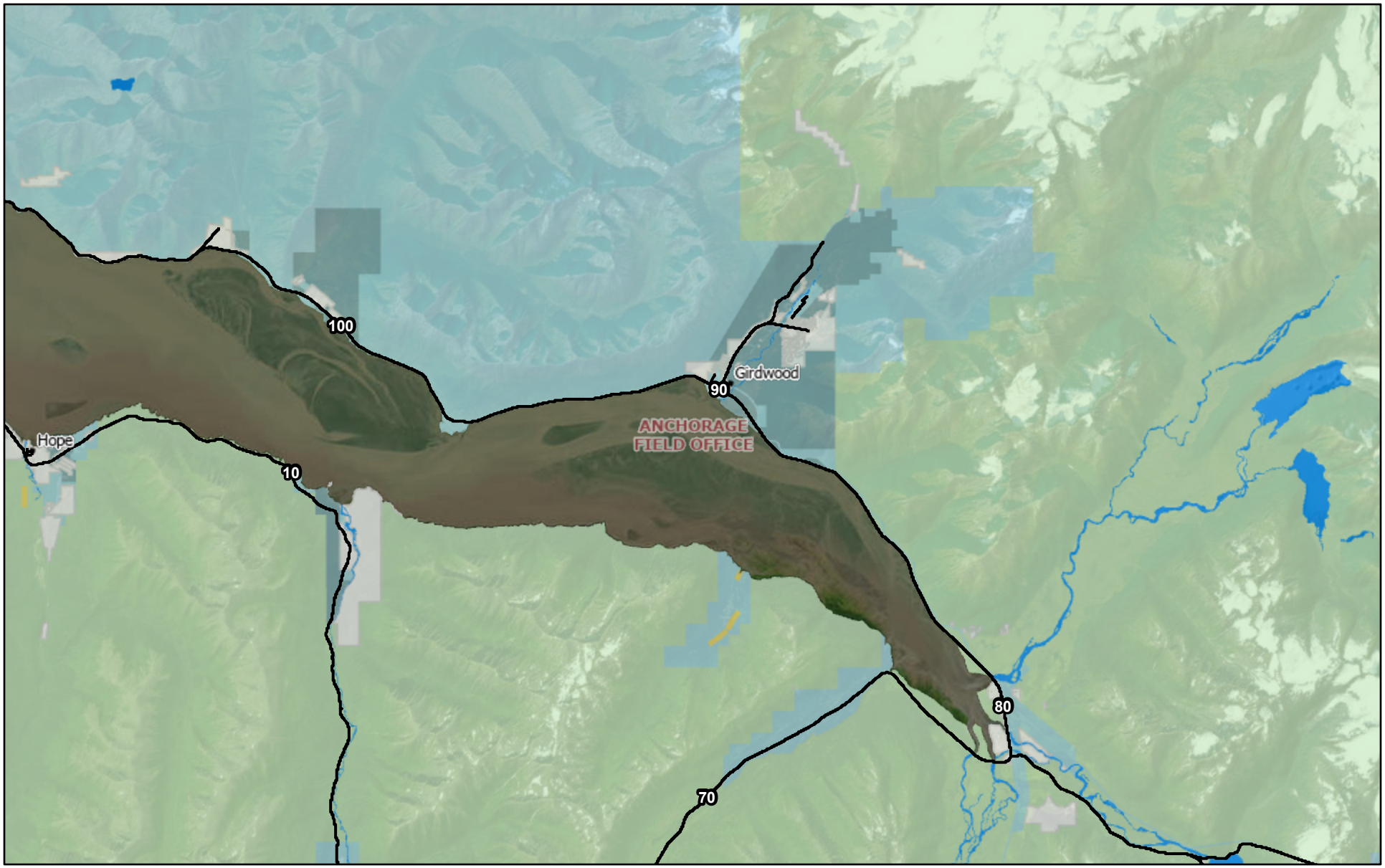


Figure 5 - BLM AK Administered Lands - Southern Communities

AK Place Name
- Place Name
- Road (DOT)
- BLM AK Administrative Unit Boundary (Label)

BLM AK Administered Lands (SMA)
- Bureau of Land Management
- Forest Service
- Other Federal
- State
- Local Government
- Native Lands
- Private
- Water

This map is maintained by BLM. All ownership boundaries should be confirmed with landowners and managers within and adjacent to the boundaries of mitigation projects as part of the planning process prior to project start.

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.[37] 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. The Chugach State Park Plan includes activities for removal of fire hazards and fire suppression and mitigation.[38]

[37] https://dnr.alaska.gov/parks/aspunits/chugach/chugachindex.htm
[38] https://dnr.alaska.gov/parks/plans/chugach/finalplan/cspmp_2016_complete.pdf

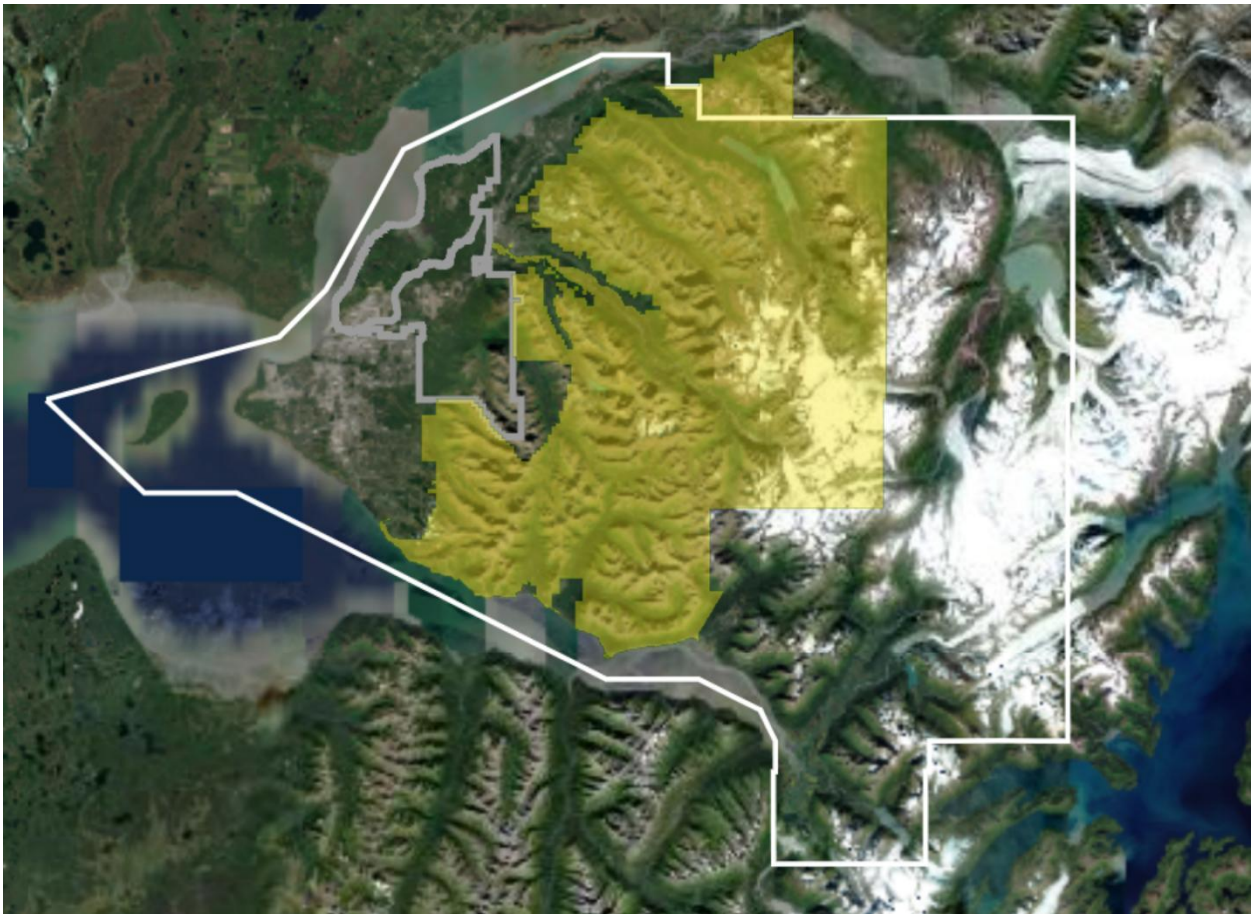


Figure 7 – Chugach State Park[39]

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.[40] 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

[39] https://gis.data.alaska.gov/datasets/66eb4a8d00384f32a14582f2c0de0329_0/explore
[40] 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.

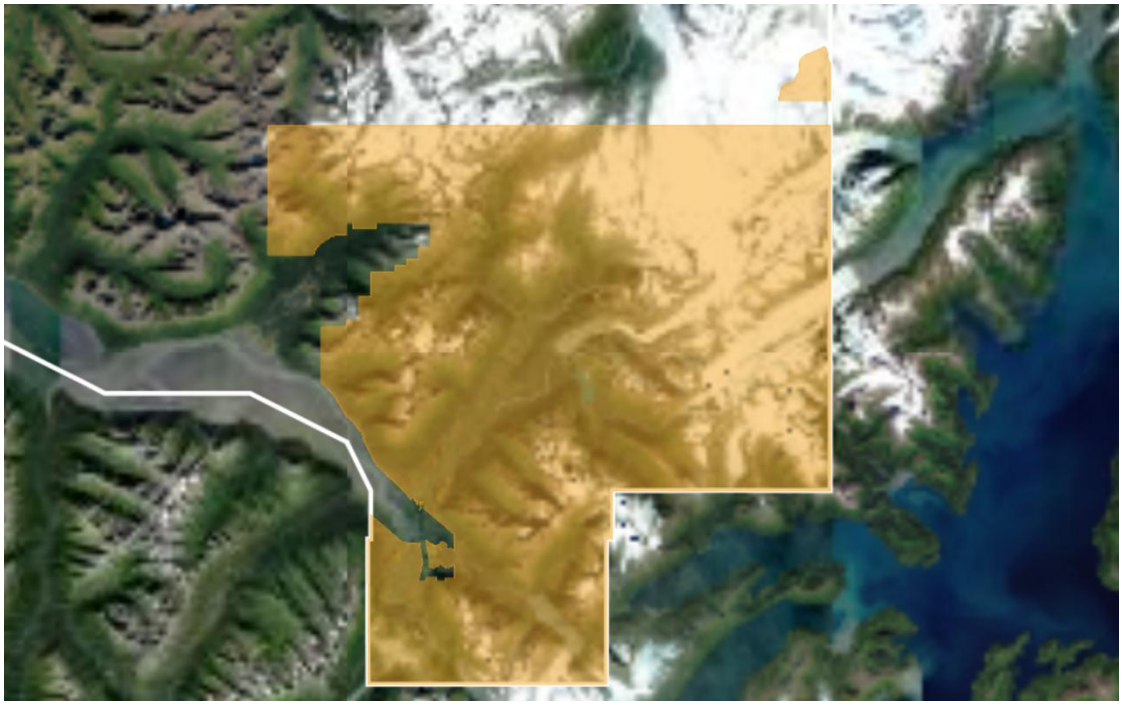


Figure 8 - Chugach National Forest[41]

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.[42]

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.

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

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 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.[43] 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.

The Hillside District Plan provides information on the complexity of water and wastewater presented to the Abbott/Elmore, Lower Hillside, Birch, Upper Hillside, DeArmoun, Glen Alps, South Rabbit Creek, Bear Valley, and Potter Heights SPUs.[44] "There are 39 public well water systems in the Hillside District: 19 community systems and 20 non-community systems."

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

[43] https://www.anchoragecreeks.org/anchorage-s-waterways
[44] https://www.muni.org/departments/ocpd/planning/publications/hillside%20district%20plan/hillsidedistrictplan-april2010-web.pdf

crossing some of Anchorage's most populated neighborhoods.[45] 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 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.[46]

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. [47]

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

[45] Municipality of Anchorage, Watershed Management Services. *Campbell Creek Watershed Study* (2009).
[46] https://www.muni.org/Departments/operations/streets/Service/SiteAssets/Pages/GirdwoodBoardofSupervisors/Girdwood%20Valley%20Trails%20Management%20Plan%202020%20Revision.pdf
[47] https://eklutnahydro.com/wp-content/uploads/2020/03/NWS-Eklutna-Hydrology-Report_Draft.pdf

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 JBER to Cook Inlet. [48]

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.[49]

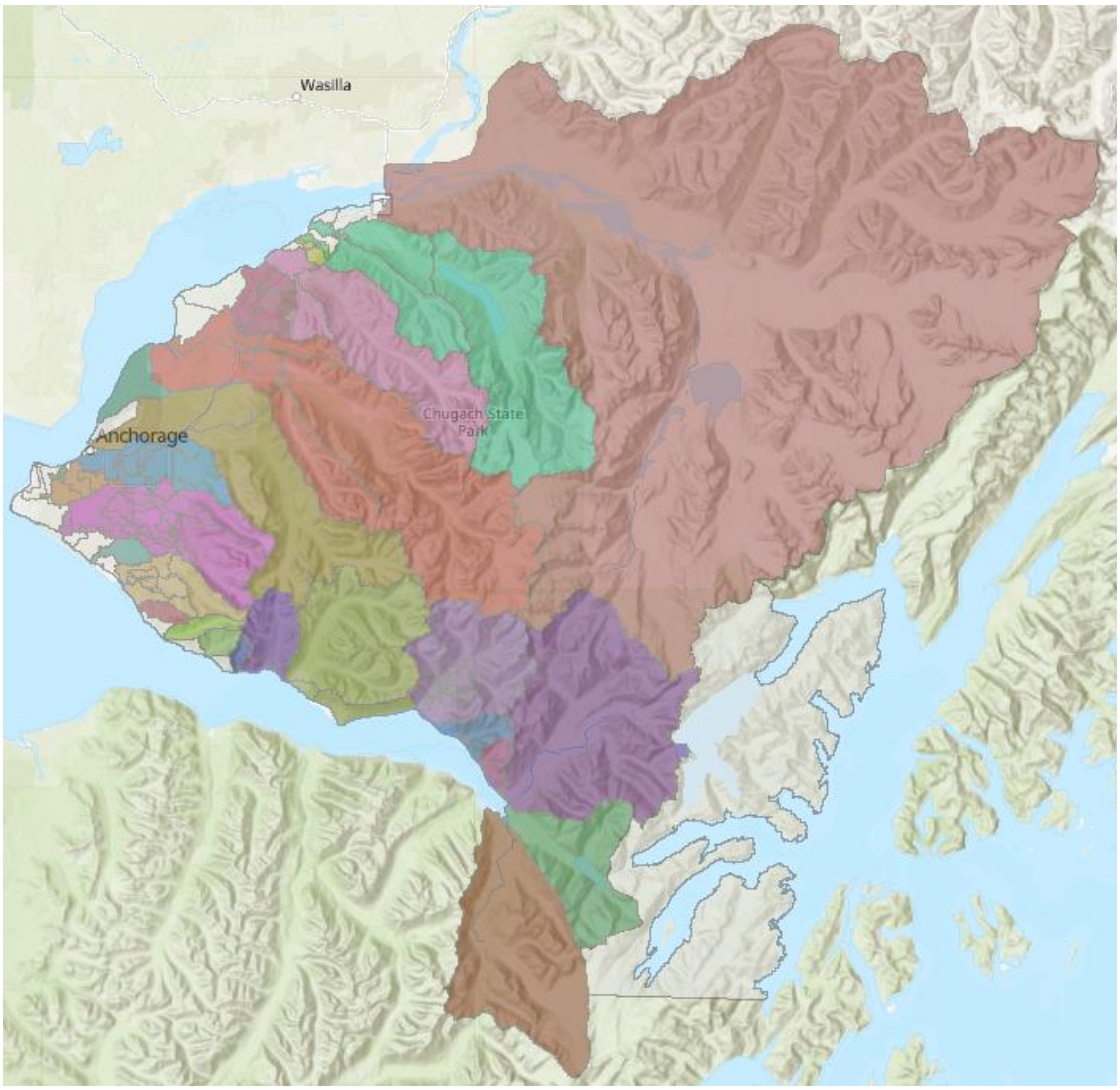


Figure 9 – Watersheds of MOA[50]

[48] 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

[49] Data sources: Anchorage Waterways Council, Municipality of Anchorage Hydrology Section, U.S. Geological Survey, Anchorage Water and Wastewater Utility (AWWU).

[50] https://www.arcgis.com/apps/webappviewer/index.html?id=6a8cf6cdc1af4a38b45f580bfd5624f2

Infrastructure and Public Services

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.[51]

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 JBER and DFFP 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.

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

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 and management. Identifying where vulnerabilities overlap with wildfire risk areas is central to protecting both critical systems and the residents who depend on them.[52]

Climate and Vegetation

Anchorage's climate is transitional, shaped by both coastal influences from the Gulf of Alaska and continental conditions from the Interior. The median snow depth levels recorded at Anchorage Ted Stevens International Airport show that snowpack typically persists from November through mid-April. [53] Summers were nine days longer in 1990-2020 period compared to the previous 30-year period, while the season is becoming warmer and drier.[54] 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 40-55 inches of rainfall and 150-200 inches of snow[55]. Conversely, the remainder of Anchorage receives 16-17 inches of rainfall and 75-80 inches of snow.[56]

Alaska contains approximately 120 million acres of forestland which is divided into two main zones:

- Boreal Forest
    - Coniferous: Coniferous trees make up the primary component of the boreal forest across its range. Dominated by white spruce found on warm, well-drained sites and black spruce found on poorly drained, often permafrost-laden, soils.
    - Deciduous: Dominated by balsam poplar and quaking aspen on floodplains of meandering rivers.
- Coastal Temperate Rain Forest
    - The vast majority of this forest is in an old-growth condition. Old-growth forests are created by high-frequency, low-intensity disturbances (typically wind-throw) and feature a multilayered canopy, large old trees, a well-developed understory, and abundant dead and down trees.
    - Conifers dominate. The most abundant species is western hemlock, followed by Sitka spruce. Other important species include mountain hemlock, Alaska yellow cedar, and western red cedar.

[52] Data sources: Anchorage Fire Department (2023), Municipality of Anchorage Office of Emergency Management, Anchorage Water and Wastewater Utility, Chugiak and Girdwood Volunteer Fire Departments.
[53] https://www.weather.gov/aprfc/snow_depth# Anchorage Ted Stevens International Airport Annual Snow Depth Plot 1953-02-23 to 2025-11-18
[54] https://uaf-accap.org/wp-content/uploads/2020/08/climate-dispatch-july-2020_8_5_compress.pdf
[55] https://weatherspark.com/y/246/Average-Weather-in-Girdwood-Alaska-United-States-Year-Round
[56] https://www.usclimatedata.com/climate/anchorage/alaska/united-states/usak0012

Anchorage is within the Cook Inlet region which is considered a transition zone between the interior boreal forest and the coastal temperate forest. Additionally, the Chugach Mountain Range hosts alpine tundra and shrublands at higher elevations, with dense stands of mountain hemlock found intermixed with boreal forest up to the transition to tundra. See the Alaska Wildlife Action Plan (2025) for more information on the vegetation species in and around Anchorage.[57]

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.

The Fuel Model Guide to Alaska Vegetation (2018) provides important information in correlation of forest types and Wildfire Risk, describing both forest types.[58]

- Boreal Forest: The high burnability of black spruce is driven by ladder fuels and resinous needles and lichen. During periods of drought or later in the summer, these deciduous stands may not be an effective barrier to fire spread. While deciduous trees are generally less flammable than spruce, their protective qualities diminish significantly under severe weather conditions, allowing fire to spread across the broader boreal landscape.
- Coastal Temperate Rain Forest: one of Alaska's least fire-prone ecosystems, with wildfire risk confined to low-intensity surface fires that only occur when moisture conditions are unusually low.

Due to the wildfire risk associated with different vegetation types, hazardous fuels and black spruce data are being mapped and tracked. For more information on how these fuels relate to the SPUs see *Appendix C: Methodology*.

According to the USDA Climate Hubs:

> *Wildfires are a natural part of boreal forest and tundra ecosystems in Alaska. [Changes in climate are] increasing the risk of large, frequent, and severe wildfires as rapidly warming temperatures and longer growing seasons affect Alaska. Larger, more frequent, and more severe wildfires threaten lives, infrastructure, and resources.*
>
> *Wildfire severity differs across ecosystems, from low-severity burns set by Alaska Native communities to low-frequency, high-severity crown fires of the boreal forest. However, fire frequency and burned area throughout Alaska are exceeding those of historical fire regimes. From 2000 to 2020, 2.5 times more acres burned than in the previous 20 years, and 3 of the 4*

[57] https://www.adfg.alaska.gov/static/species/wildlife_action_plan/appendix5_forest_habitats.pdf

[58] https://fire.ak.blm.gov/content/admin/awfcg_committees/Fire%20Modeling%20and%20Analysis/AK%20Revised%20Fuel%20Model%20Guide%20May%202018.pdf

highest-acreage fire years have occurred since 2000. Most of this increase in area burned has been in tundra and boreal forest. Unlike boreal forest and tundra, Alaska's temperate rainforests rarely experience fire and have not yet seen an uptick in the number, size, or severity of wildfires.

By 2050, burned area is projected to increase by 24 to 169% in Alaska. Changes in climate will cause longer wildfire seasons, increased fire frequency, size, and total area burned, and possibly increased wildfire severity.[59]

[59] https://www.climatehubs.usda.gov/hubs/northwest/topic/climate-change-and-wildfire-alaska

Wildfire Smoke

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.[60] 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 Impacts

Wildfire smoke affects all residents, but some groups face much greater impacts 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

[60] 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.[61] [62] 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, wildfire smoke 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 and delay or suspend aerial activity for any or all airports within the MOA. 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.[63] 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.

[61] Mountain View Targeted Neighborhood Plan (2016). Municipality of Anchorage Planning Department.
[62] https://akfederalfunding.org/city/anchorage-west-fairview/
[63] 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. [64]

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.

[64] 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 white spruce, black spruce, birch, cottonwood, 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 WUI creating heightened risks for homes, infrastructure, and public safety.[65]

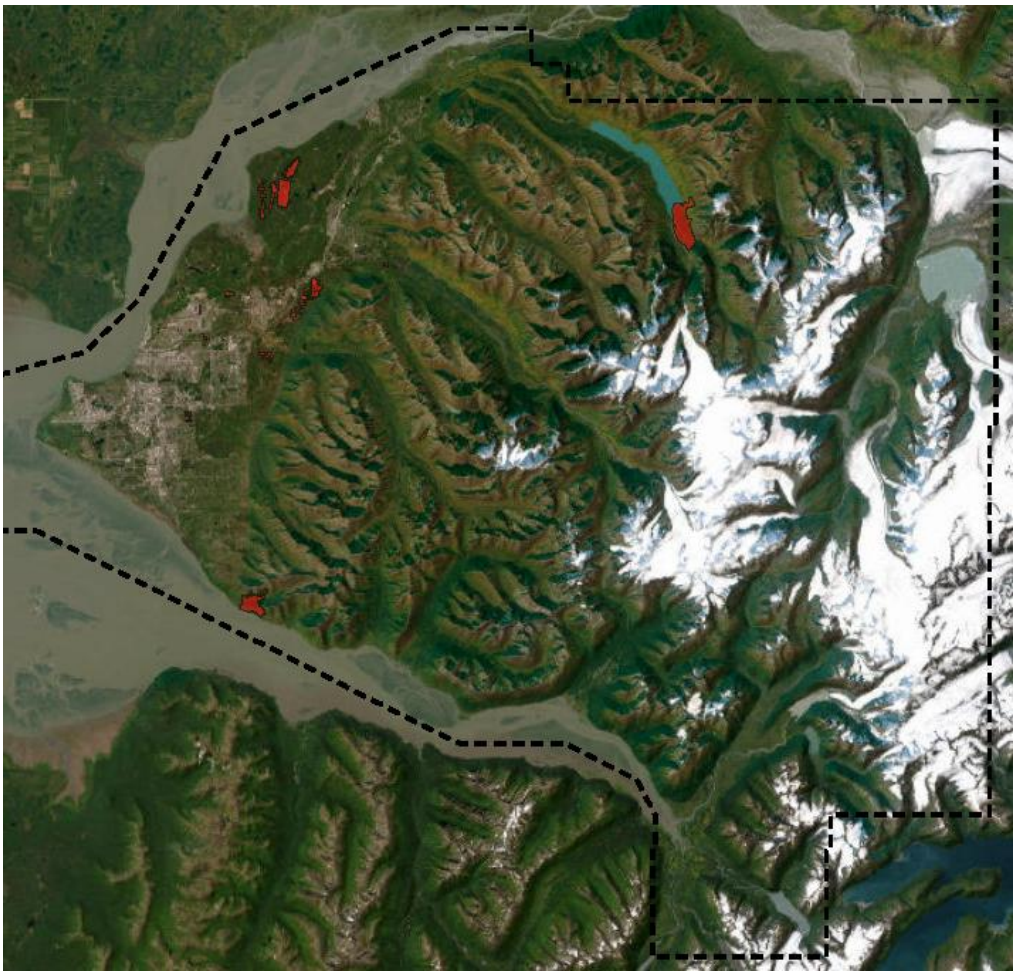


Figure 10 - MOA Fire History (includes both wildfires and prescribed fires)[66]

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

According to the MOA All Hazards Mitigation Plan completed in 2022, "No declared wildfire disasters have been identified to date in the MOA. However, the potential exists. Every year, the AFD puts out dozens of fires that could be disastrous if not contained early."[67] 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 fire 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.

Since the late 1970's, annual temperatures have increased by more than 3 degrees Fahrenheit. These warmer temperatures have resulted in drier vegetation and lengthened Alaska's fire season, producing larger, more intense fires statewide and more frequent smoke impacts in Anchorage.[68] 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 risk awareness and response capacity.

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[67] https://www.muni.org/Departments/OEM/Plans/Documents/Final%20MOA%20All%20Hazards%20Mitigation%20Plan%202022.pdf

[68] International Arctic Research Center, University of Alaska Fairbanks. *Alaska's Changing Environment: Documenting Alaska's Physical and Biological Changes Through Observations* (2019).

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.[69] 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.

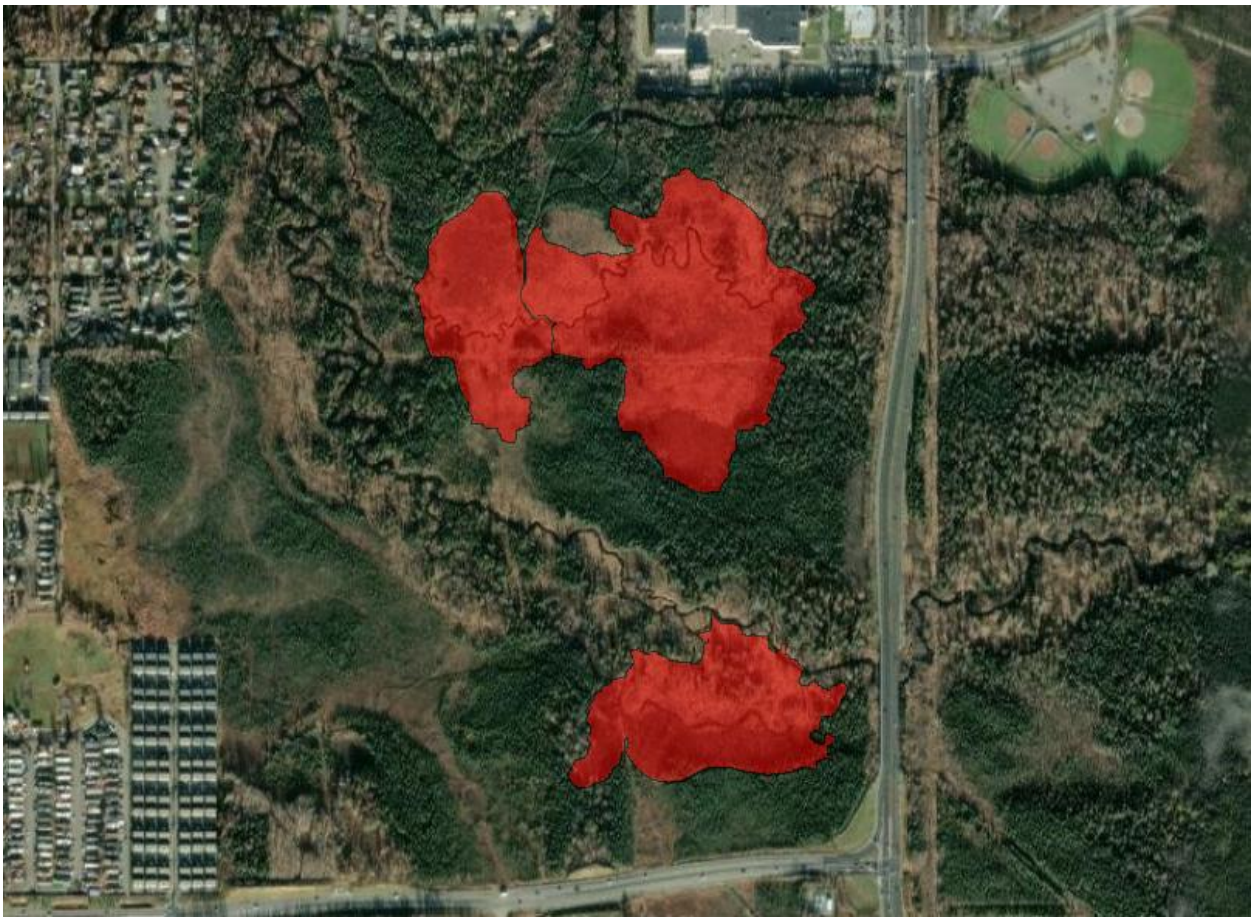


Figure 11 – Campbell Creek: Piper, MLK and Elmore Road Fire Perimeters[70]

[69] https://akfireinfo.com/2019/07/03/firefighters-begin-mopping-up-25-acre-wildfire-in-east-anchorage/
[70] https://experience.arcgis.com/experience/1170079e0aac464c87a0a5eb280cd6a4

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 DFFP, 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.[71]

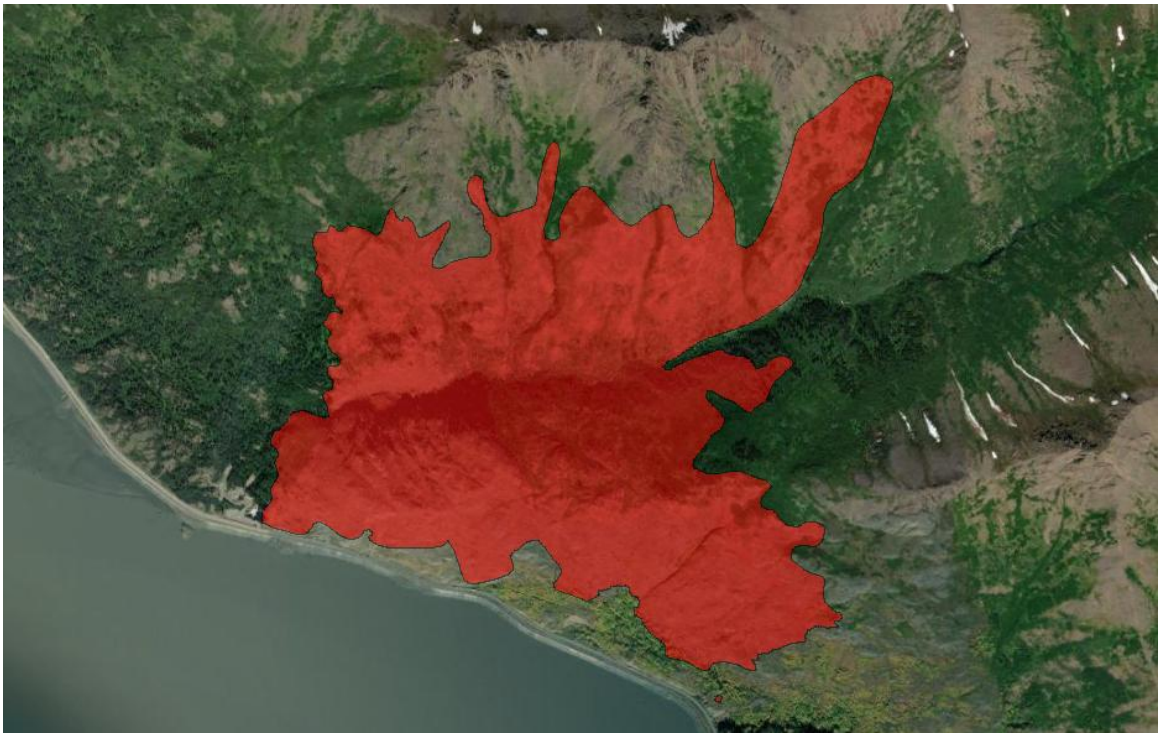


Figure 12 – McHugh Fire[72]

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

- **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.[73]

- **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[74]. 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 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.

[73] https://www.adn.com/alaska-news/anchorage/2016/05/27/wildfire-burns-in-eagle-river/
[74] https://eklutnavalley.home.blog/2022/06/30/wildfires-of-eklutna-valley/

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.[75]

- **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 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.[76]

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.

[75] https://www.frames.gov/documents/alaska/docs/Level_III_Assessment_for_Shanta_Creek_Fire_7_19.pdf
[76] https://storymaps.arcgis.com/stories/549a014cfcff49eab2affe8b07e42acf

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.

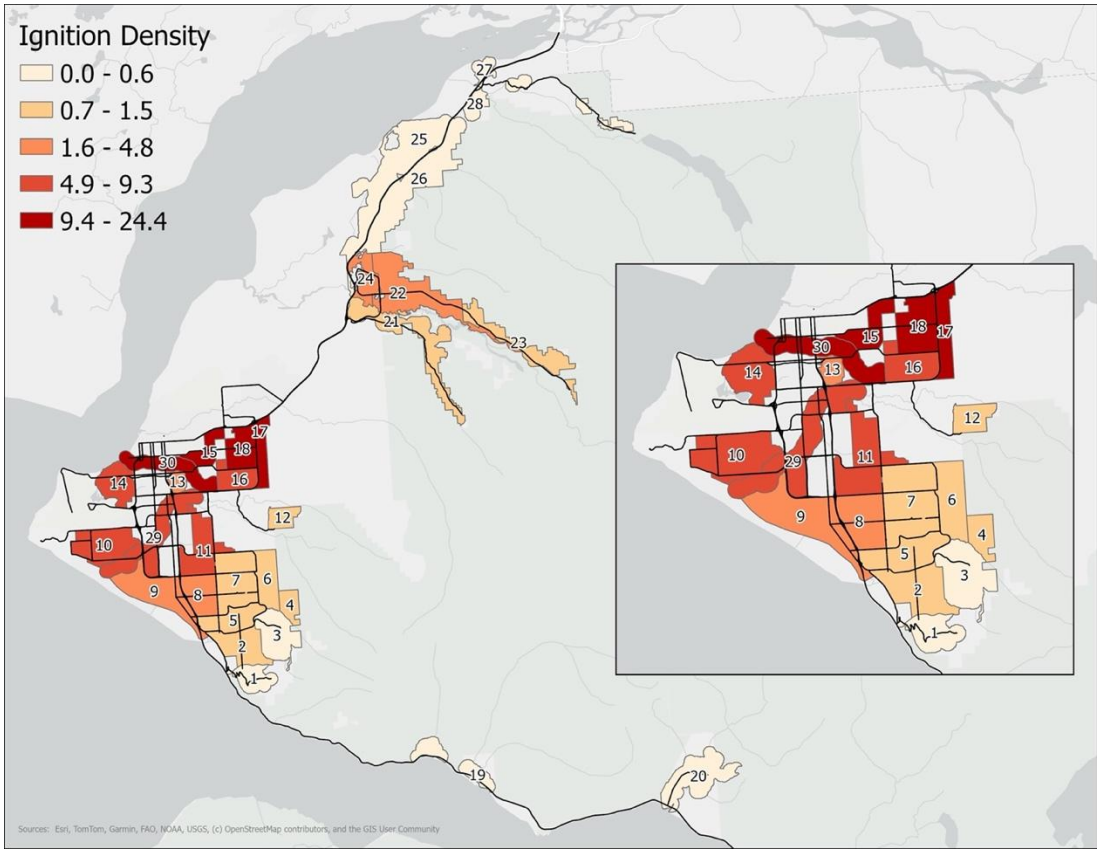


Figure 13 - Ignition Map 2001 to 2021 (AFD Data)

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) DFFP 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 AFD working alongside DFFP, JBER, CVFRD, and GFRD 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 aided in the recognition of the unique characteristics of the MOA topography, vegetation, and wildfire risk.**

The Interagency Fuel Treatment Decision Support System (IFTDSS) is a product of the U.S. Forest Service Missoula Fire Sciences Laboratory.[77] 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)[78]. 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
- Wind Speed and Direction

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

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 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).[79] 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 analyst at the National Park Service

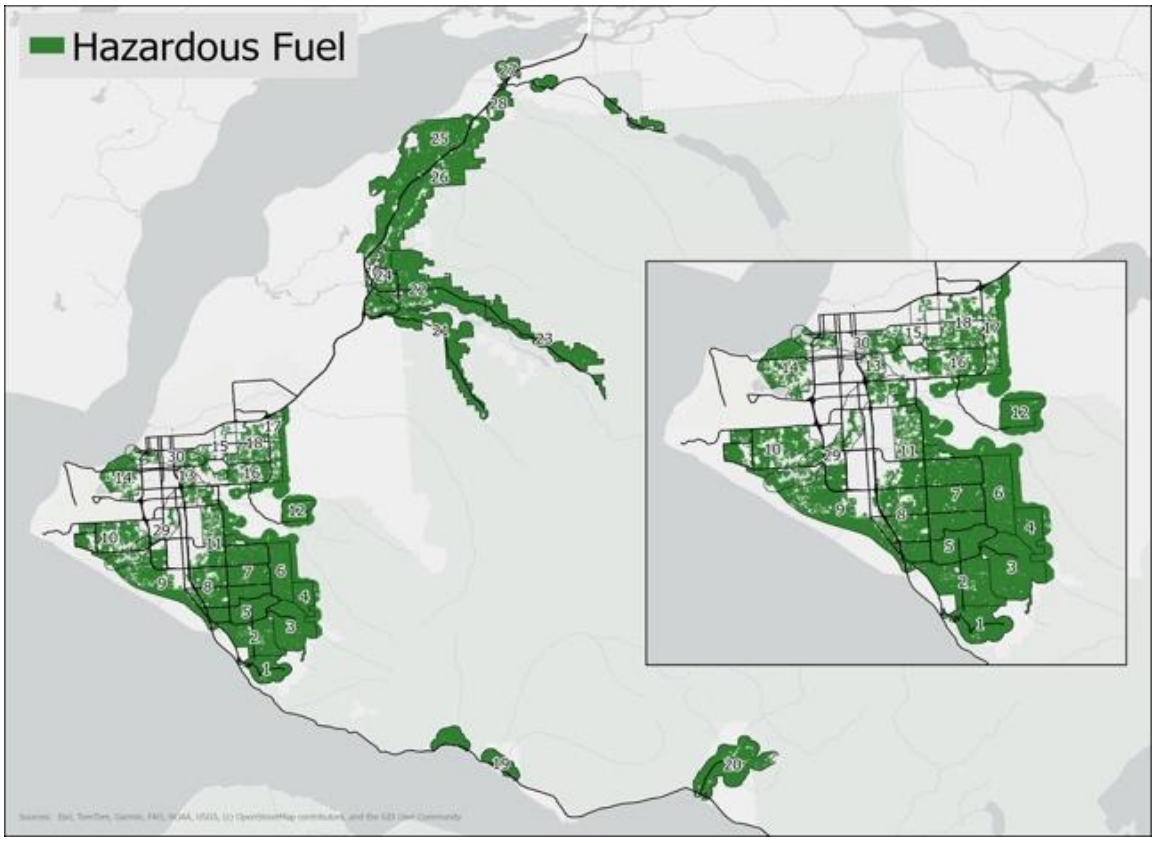


Figure 14 - Hazardous Fuels

79 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

(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 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

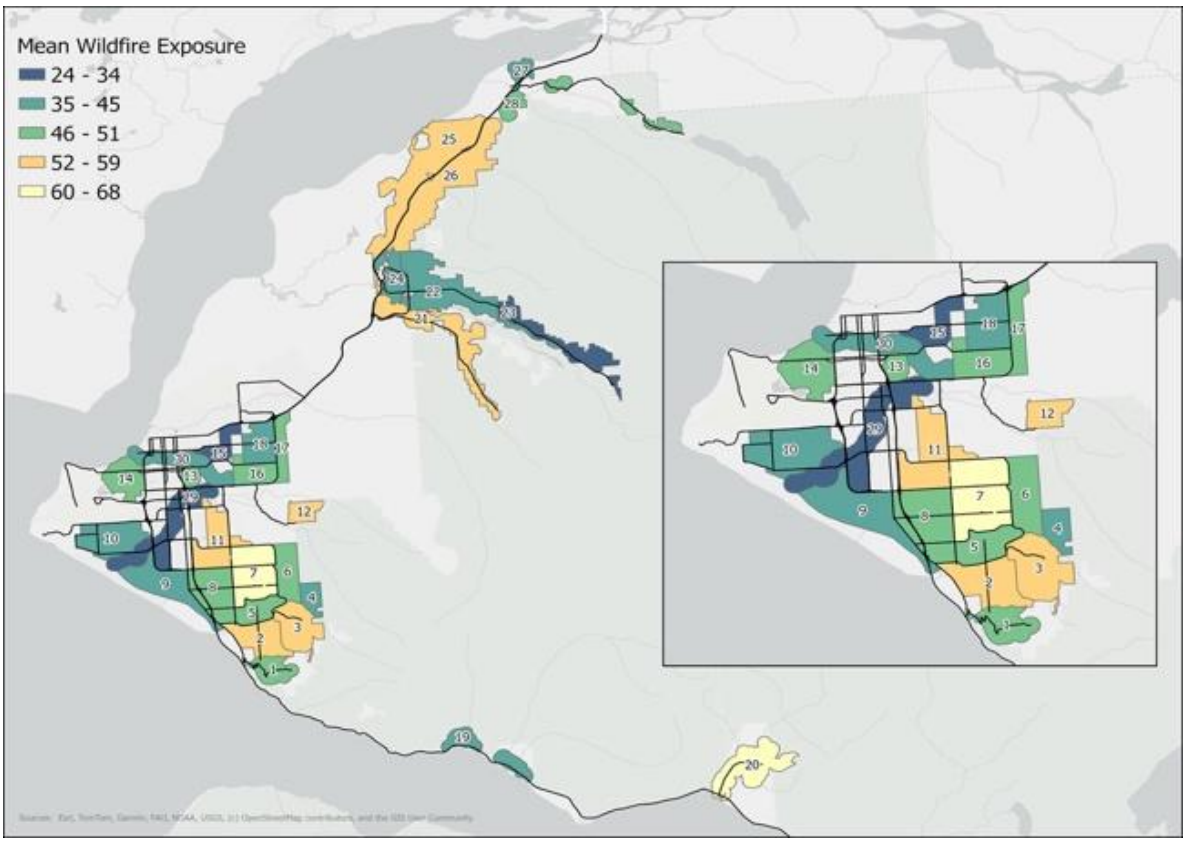


Figure 15 - Mean Wildfire Exposure (Average by SPU)

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 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 DFFP.

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) [80]. 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.

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. Figure 15 presents the SPUHR classifications for all SPUs in this study area.

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

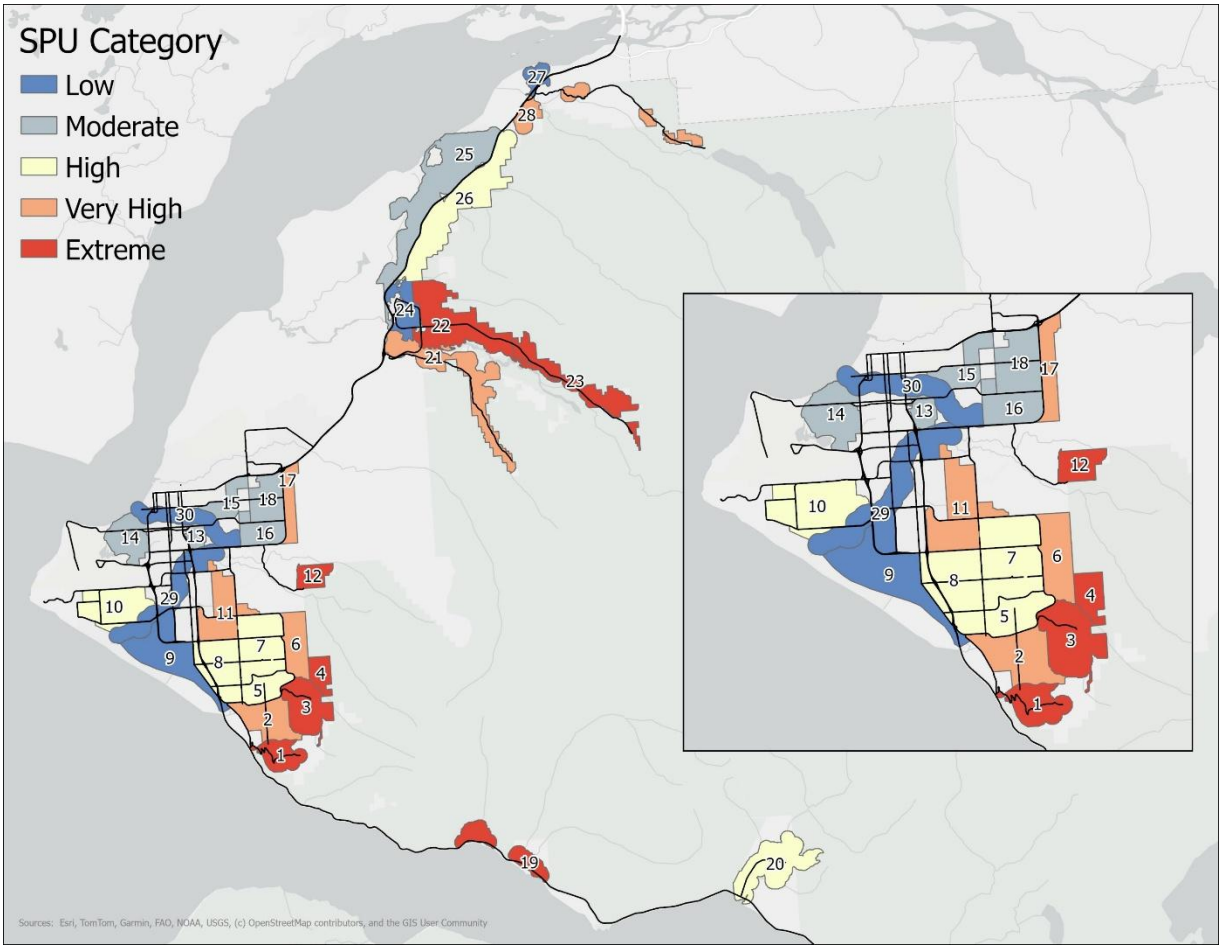


Figure 15 – SPU Map and Hazard Rating Table

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.

Areas of Special Interest, JBER and TSAIA/Kincaid

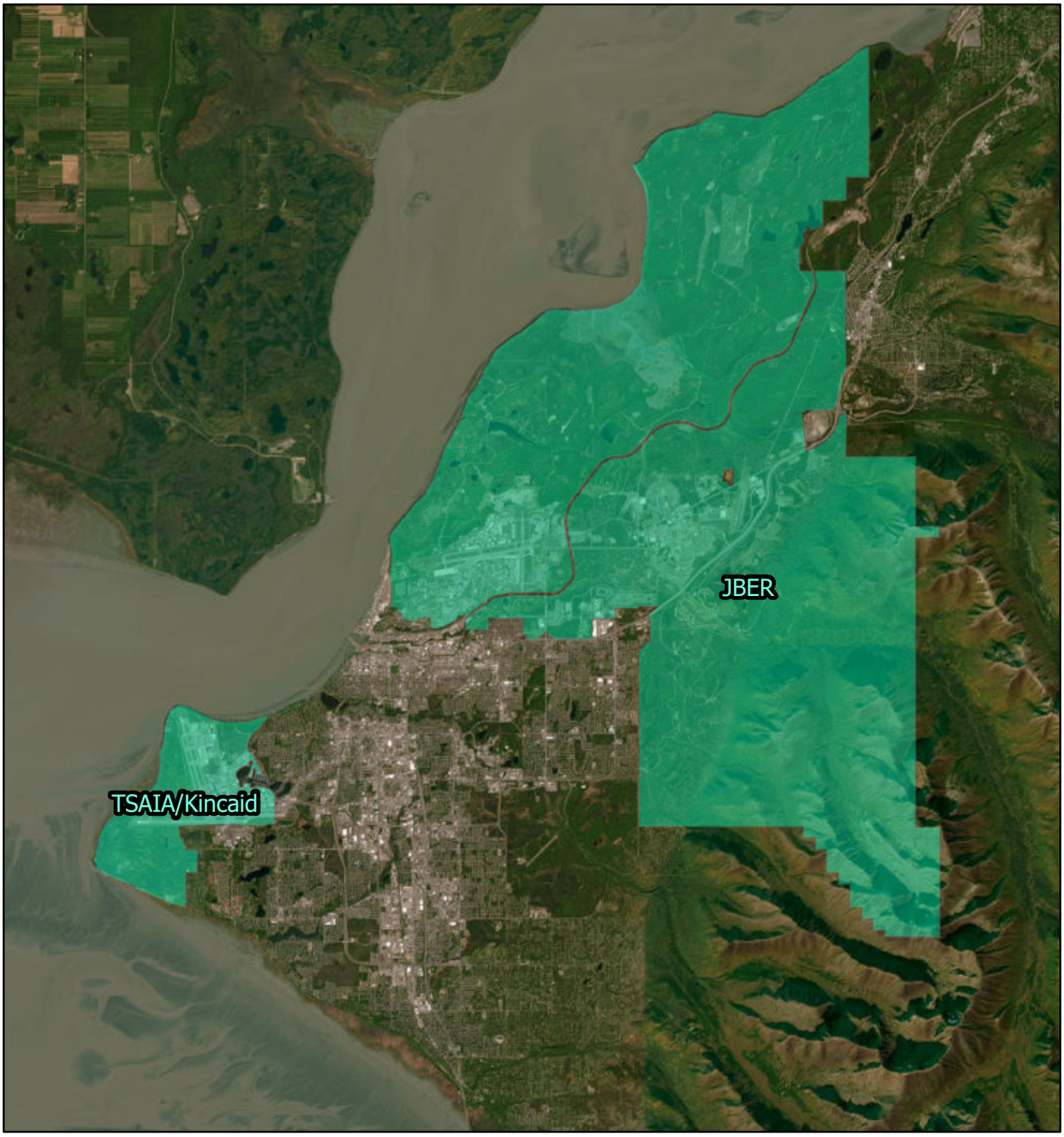


Figure 17 - Areas of Special Interest, JBER and TSAIA/Kincaid

Joint Base Elmendorf-Richardson (JBER)

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.[82]

JBER has been identified as an ASI because it is within the MOA and is a source of fire starts year-round that could impact adjacent SPUs, but recommendations were not made on JBER property as they have their own wildfire management strategy. This strategy was reviewed during the process of developing this CWPP and JBER personnel consulted to affirm alignment between municipal and federal strategies. Prescribed fires are conducted by JBER personnel as part of their wildfire management strategy which is outlined in the JBER Wildland Fire Management Plan that was updated in 2025. A fire history spreadsheet is maintained by the installation, and fire perimeters for prescribed burns were provided by JBER which were included in the Figure 10 – Fire History Map. Although this plan does not make recommendations for treatments on JBER property, JBER collaborates with external partners to identify and develop mitigation projects. In addition to their own wildfire planning, mitigation, and management activities, they remain actively engaged in the MOA working toward a common goal of wildfire resilience.

Located immediately upslope and outside the JBER ASI is the Arctic Valley Ski Area, operated by the non-profit Anchorage Ski Club. Arctic Valley is a year-round recreation destination that provides alpine skiing and snowboarding in winter and extensive hiking and trail access in summer. It serves thousands of residents and visitors annually and contributes to Anchorage's outdoor recreation economy and quality of life. Although not part of the installation, Arctic Valley could be influenced by wildfire that could originate within or adjacent to the ASI and would be significantly affected by a large wildfire in this area. Its proximity underscores the shared risk across jurisdictional boundaries and the importance of coordinated wildfire prevention, mitigation, and response. While this CWPP does not make recommendations for JBER, the installation's collaboration with the MOA and other partners directly supports the resilience of surrounding high-value community assets such as Arctic Valley.

82 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

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. [83]

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 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. [84]

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[85]

83 https://www.muni.org/Departments/parks/Pages/Kincaid.aspx
[84] https://dot.alaska.gov/anc/passengers-about.shtml
[85] https://dot.alaska.gov/aias/assets/AEDC-Lake-Hood-Seaplane-Base-Impacts-Report.pdf

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.

Areas of Special Interest, Portage Valley

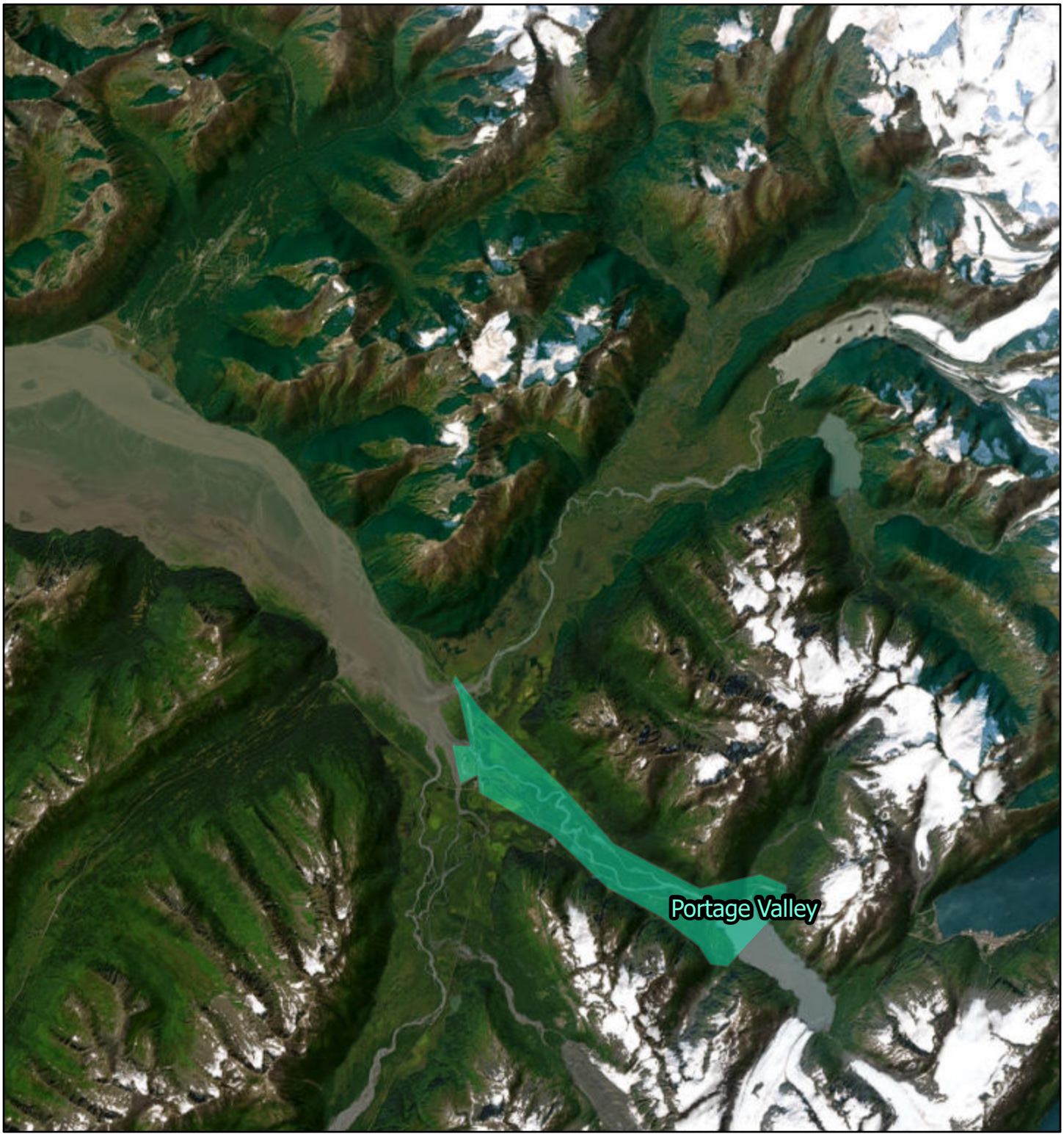


Figure 18 - Areas of Special Interest, Portage Valley

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 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.[87]

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. [88] This activity highlights the need for effective waterfront management and hazard protection of the railroad and highway in Portage Valley connecting Anchorage to Whittier.

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

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 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 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 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.[89] 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.

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

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

Communication infrastructure, including cell towers and radio networks, provides 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 3 - 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	Upper hillside neighborhoods, 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.

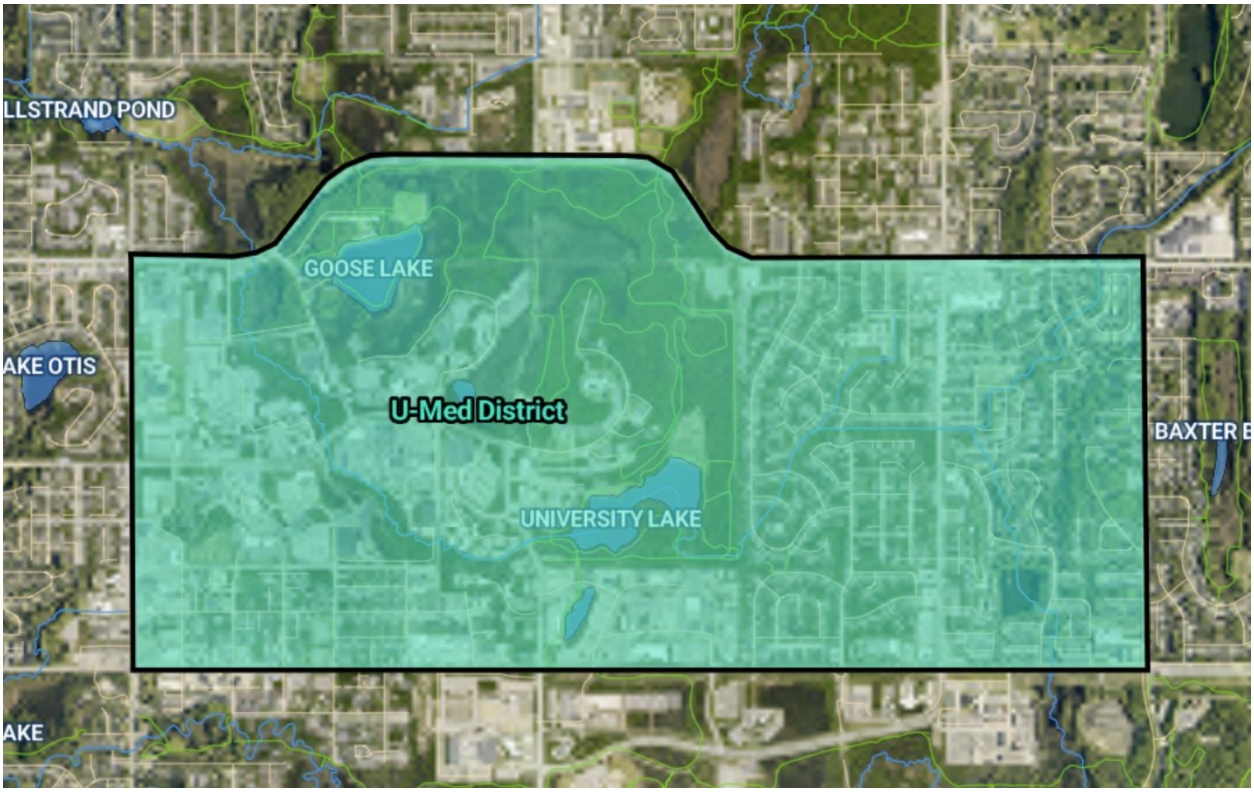


Figure 18 – University Medical District[90]

University Medical (U-Med) District: 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 Medical Center, Southcentral Foundation, and the University of Alaska Anchorage (UAA).[91] 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.

90 https://www.google.com/maps/place/umed+district+anchorage/data=!4m2!3m1!1s0x56c896fd3d6cd053:0x2b32aa82c28e6a7a?sa=X&ved=1t:155783&ictx=111

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

Other important structures and services include:

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

Anchorage School District Properties

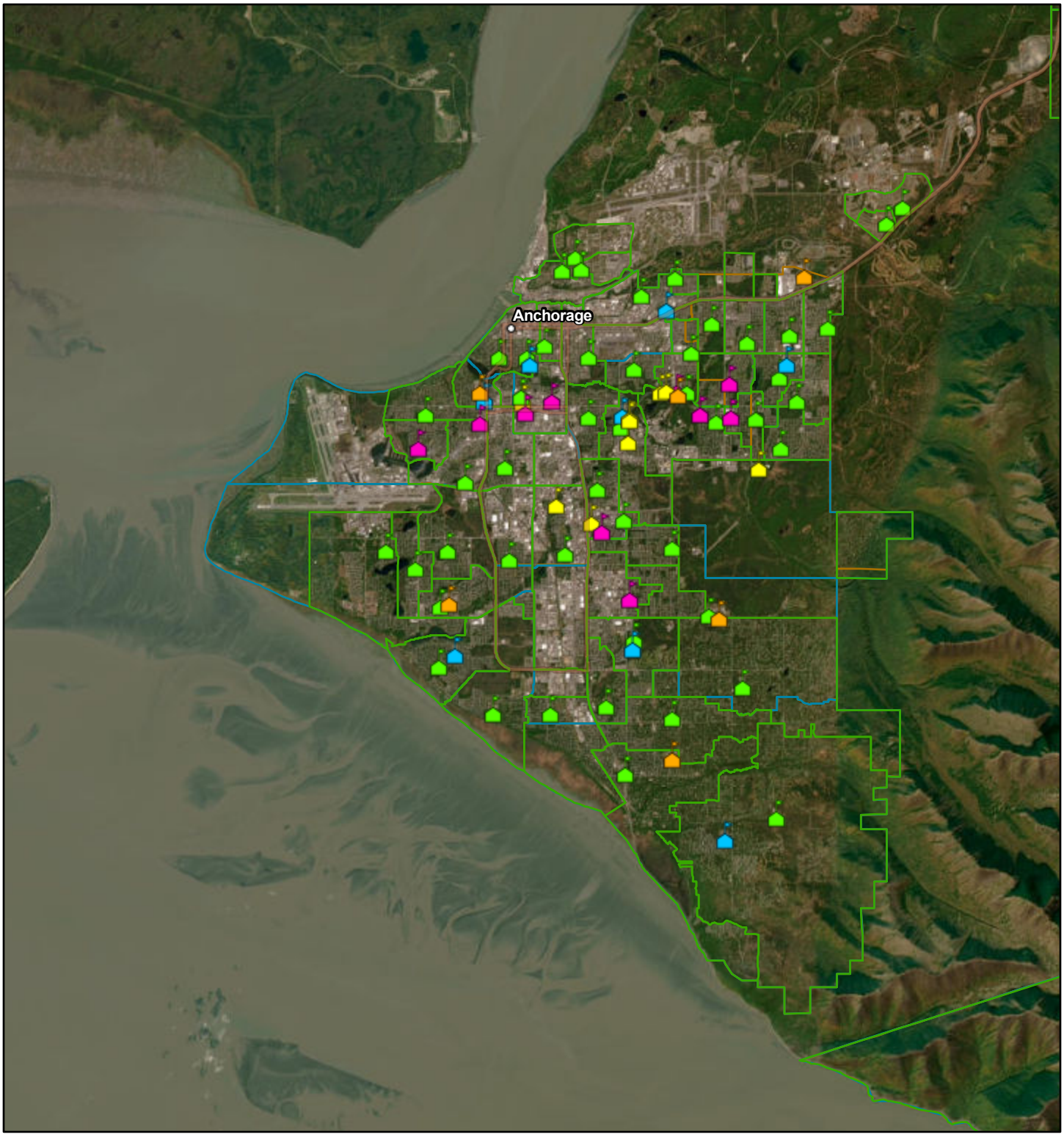


Figure 19 - ASD Schools, Anchorage Bowl

Anchorage School District Properties

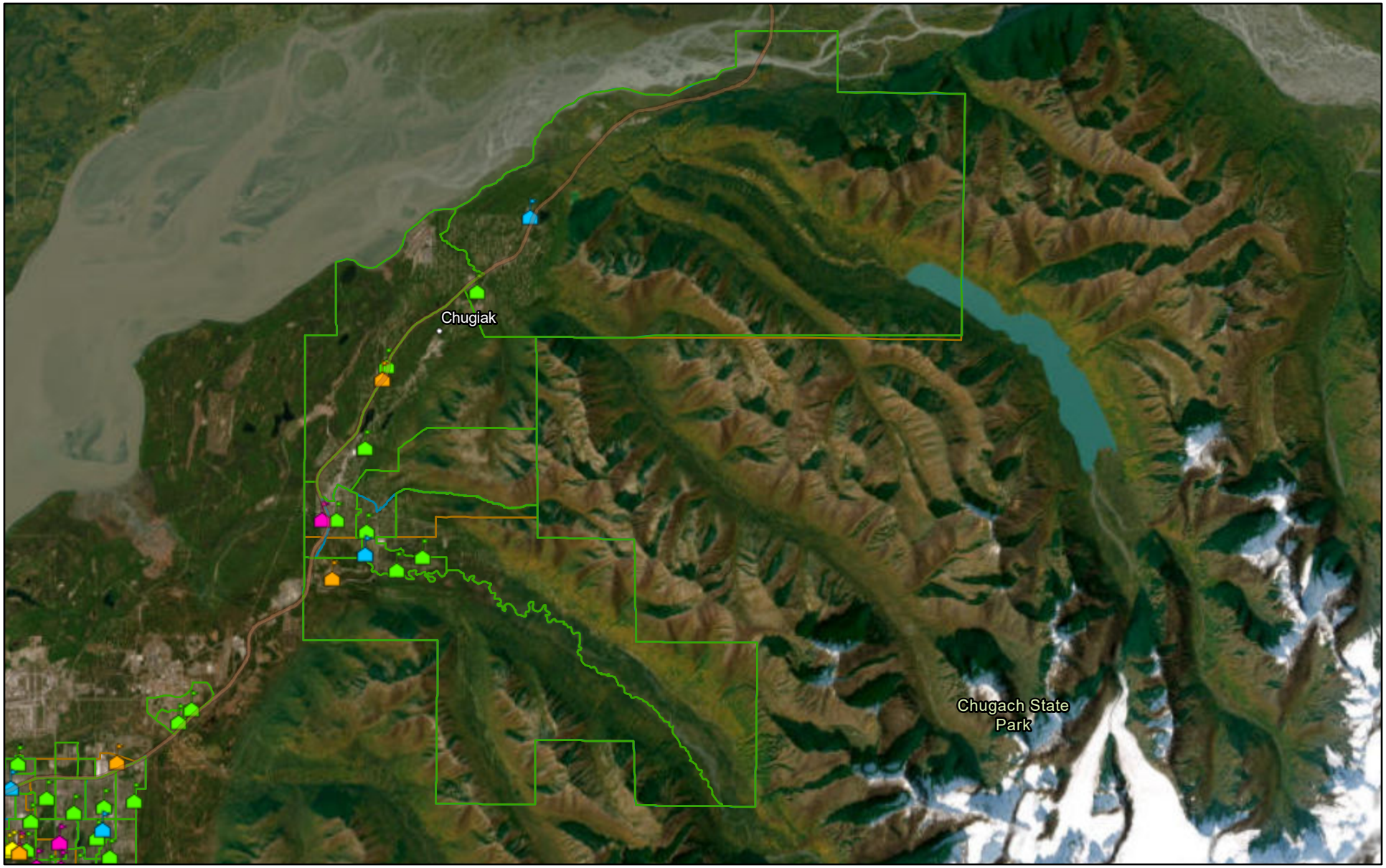


Figure 20 - ASD Schools, Northern Communities

ASD Schools

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

Anchorage School District Properties

Figure 21 - ASD Schools, Southen Communities

ASD Schools

Elementary

ASD Elementary School Attendance Areas

ASD Middle School Attendance Areas

ASD High School Attendance Areas

Fire Stations

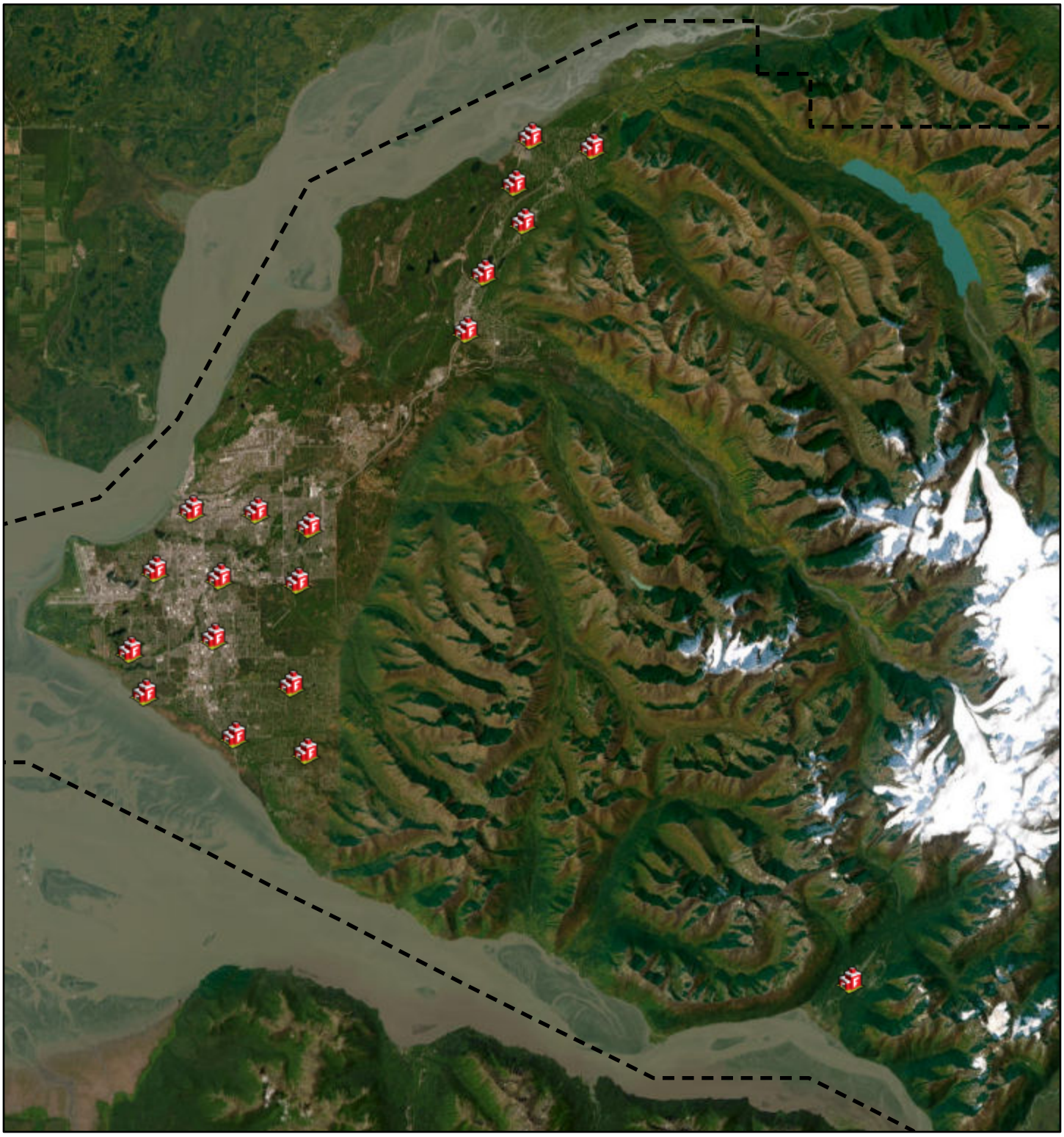


Figure 22 - Fire Stations

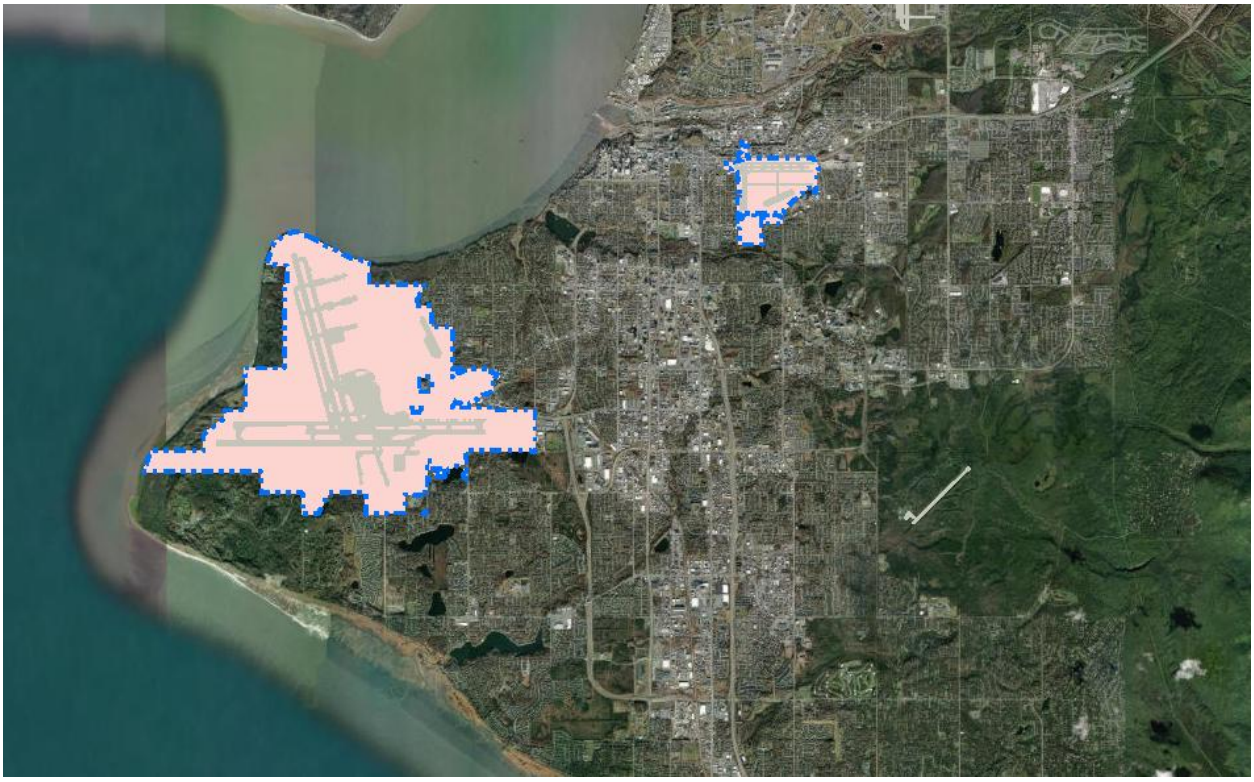


Figure 23 - MOA Airport Boundaries, Anchorage Bowl[96]

[96] https://data-muniorg.hub.arcgis.com/datasets/muniorg::airport-boundaries/explore

Figure 24 – MOA Airport Boundaries, Northern Communities[97]

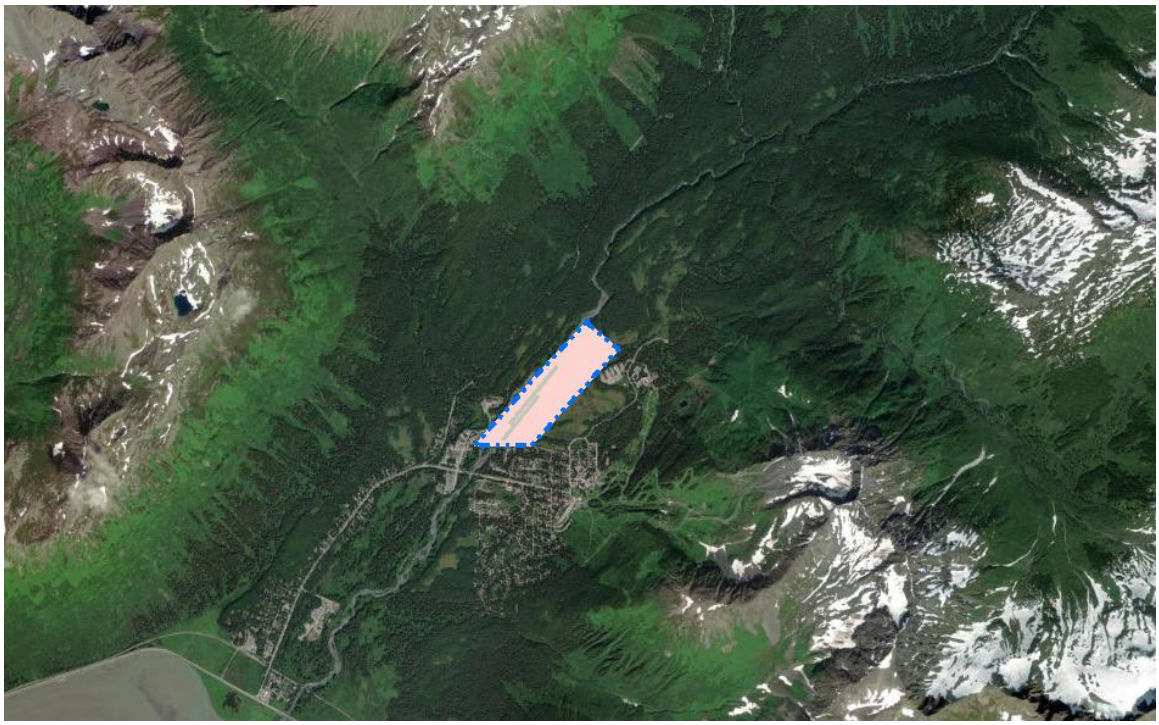


Figure 25 – MOA Airport Boundaries, Southern Communities[98]

[97] https://data-muniorg.hub.arcgis.com/datasets/muniorg::airport-boundaries/explore
[98] https://data-muniorg.hub.arcgis.com/datasets/muniorg::airport-boundaries/explore

Anchorage 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.[99] All infrastructure should be evaluated as potential sites for hazard fuels mitigation, defensible space creation, and structure hardening.

[99] 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 26 – Fire Service Areas, Anchorage Bowl, AFD Service Area (green)[100]

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

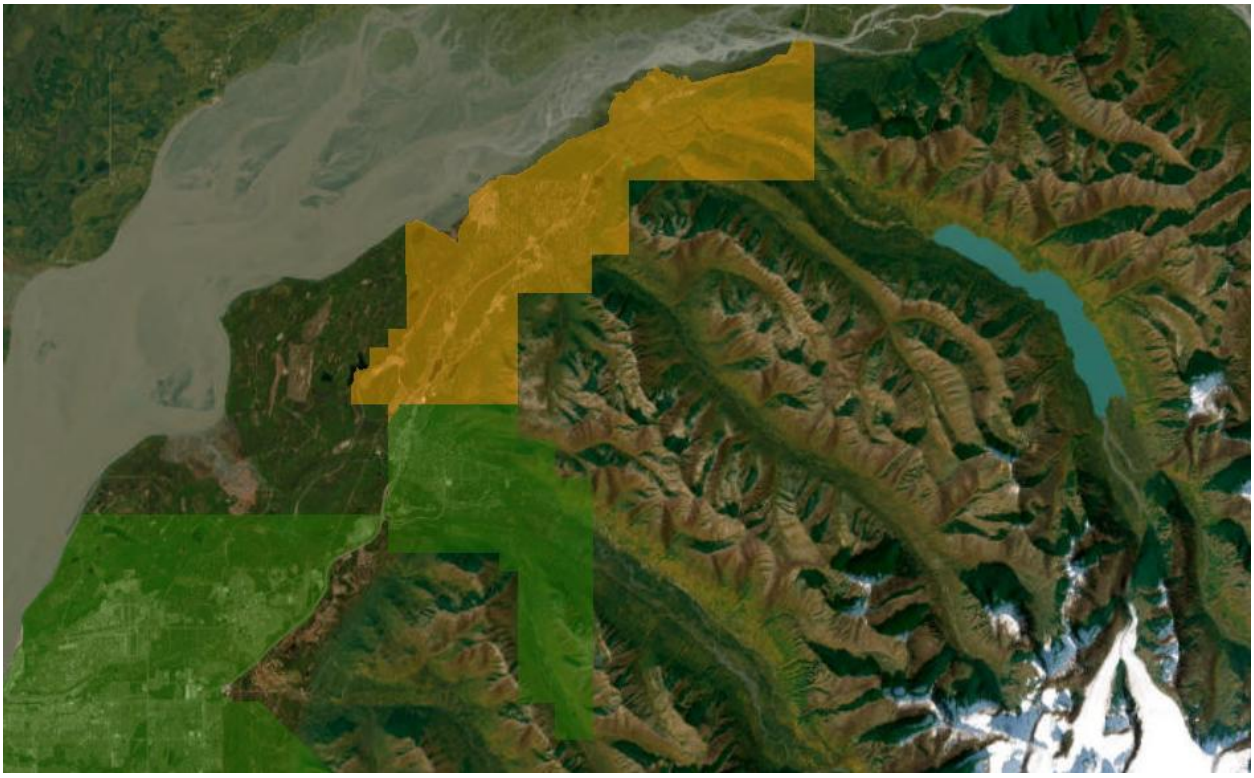


Figure 27 – Fire Service Areas, Northen Communities, AFD Service Area (green) & CVFRD (yellow)[101]

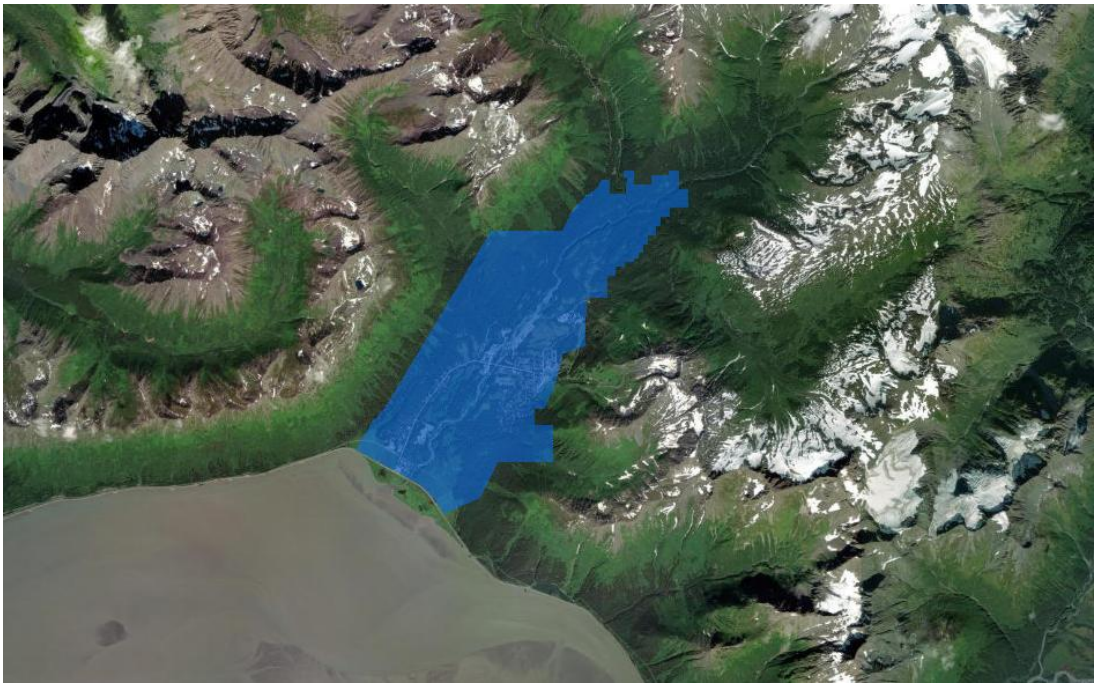


Figure 28 - Fire Service Areas, Southern Communities, GFRD Service Area (blue)[102]

[101] https://experience.arcgis.com/experience/1170079e0aac464c87a0a5eb280cd6a4
[102] https://experience.arcgis.com/experience/1170079e0aac464c87a0a5eb280cd6a4

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 responses under mutual-aid agreements with AFD and DFFP.
- **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.
- **DFFP** holds primary suppression jurisdiction for wildland fires across the entirety of the Municipality, including areas outside of local fire service boundaries. DFFP leads wildfire response in coordination with AFD, CVFRD, and GFRD to ensure unified command and efficient resource deployment.

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. According to the MOA All Hazards Mitigation Plan completed in 2022, "fire response systems are well prepared to deal with wildfires so large numbers of injuries or fatalities are not expected."[103]

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.

103 https://www.muni.org/Departments/OEM/Plans/Documents/Final%20MOA%20All%20Hazards%20Mitigation%20Plan%202022.pdf

While efforts should begin now, 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. In the AWWU Strategic Plan, one of their strategic goals is to "engage in efforts by Municipal and other stakeholders that address economic development," which includes creation of a task force to work with the MOA Office of Economic and Community Development.[104] AWWU remained actively engaged and responsive throughout the CWPP process. Although there is work being done, there are still a number of residents living in WUI communities that do not have access to AWWU water services.

[104] 2016 – 2021 AWWU Strategic Plan

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 DFFP 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.

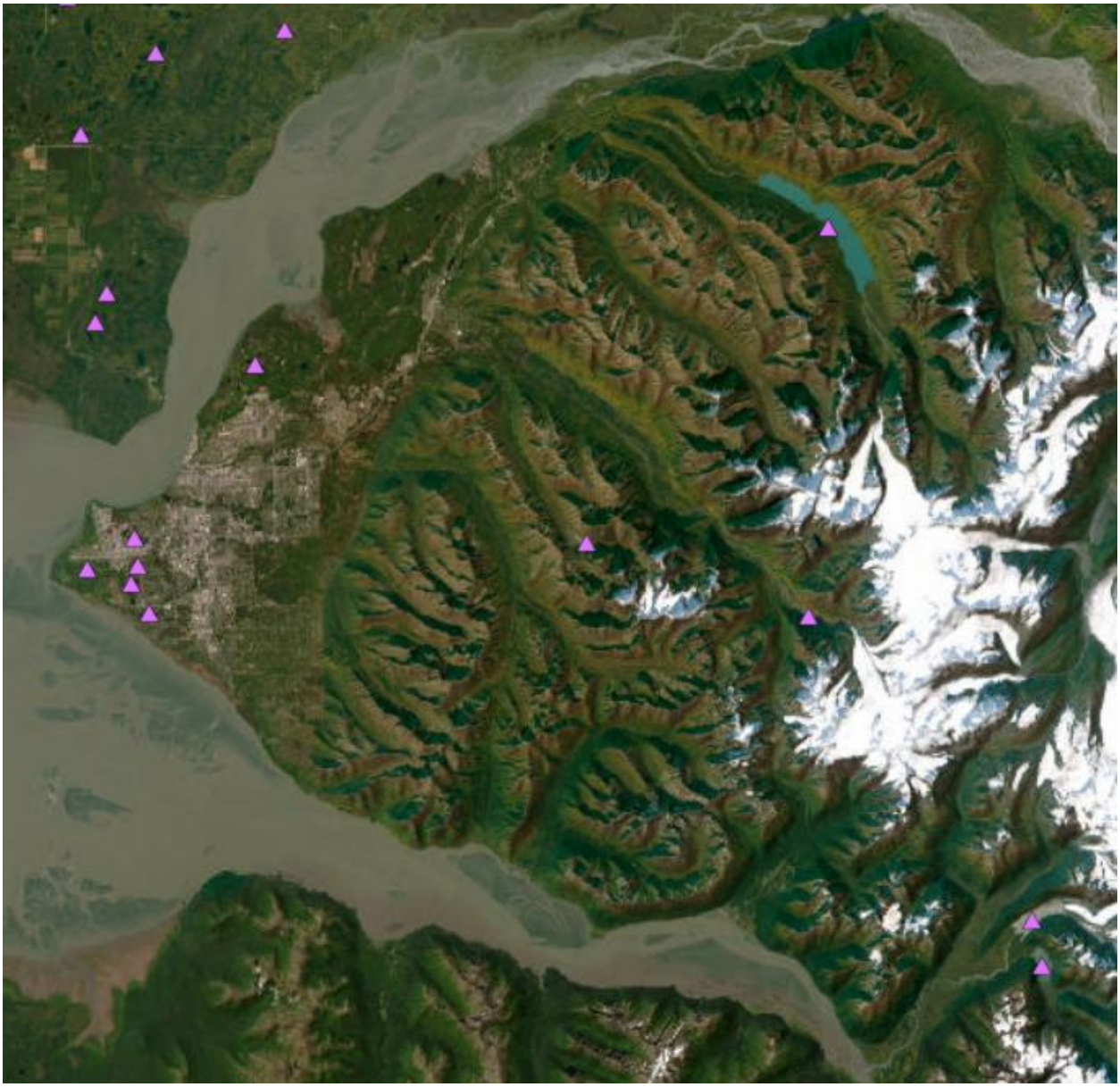


Figure 29 – Large Water Supplies Identified by BLM[105]

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

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 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.

Fire Hydrants - Anchorage Bowl

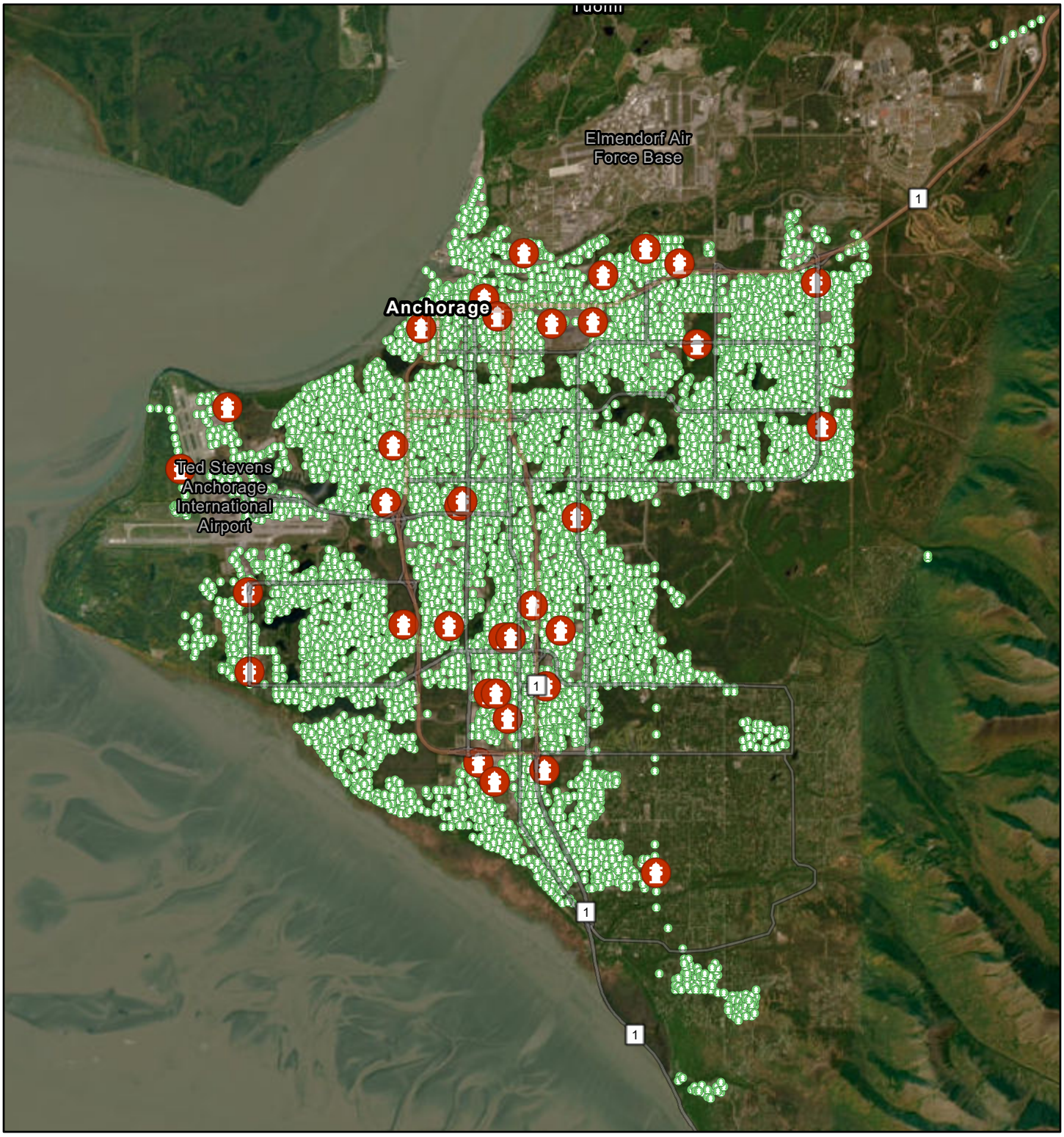


Figure 31 - AWWU Hydrants, Anchorage Bowl

Redtop Hydrants

Hydrants

Fire Hydrants - Northern Communities

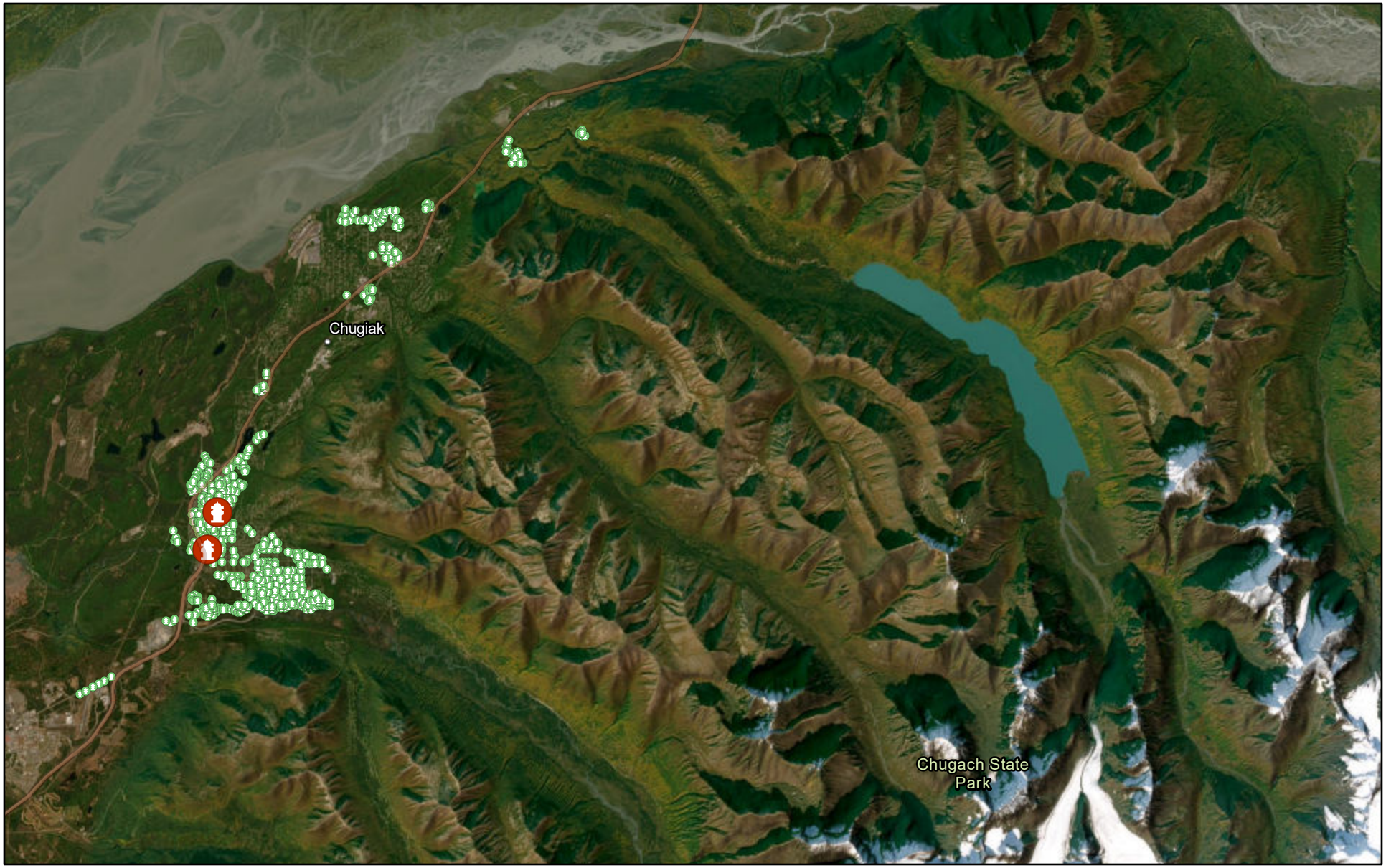


Figure 32 - AWWU Hydrants, Northern Communities

Redtop Hydrants

Hydrants

Fire Hydrants - Southern Communities

Figure 33 - AWWU Hydrants, Southern Communities

Redtop Hydrants

Hydrants

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:

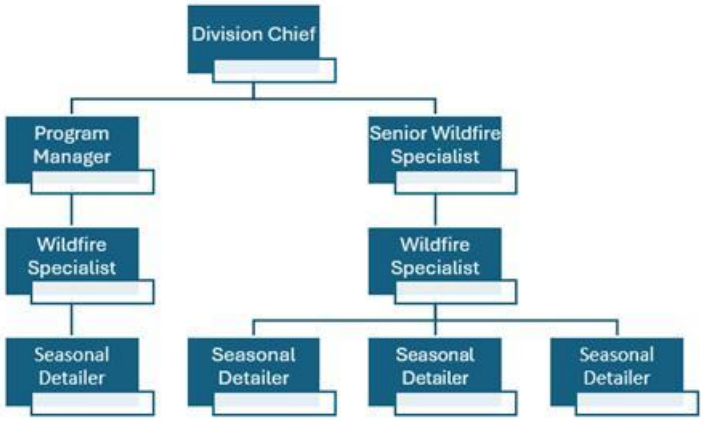
- Community Assistance – Mitigation/prevention, education, and outreach programs that build local wildfire readiness.
- Fire Planning – Apply science-based management strategies to guide suppression operations safely and effectively.
- Interagency Coordination – Coordinate with municipal departments and interagency partners on an annual basis to perform strategic response and evacuation planning.
- 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 MOA departments' 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.[109]

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, DFFP)
- 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, DFFP)

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

[109] 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.

Surveys that have been sent to Anchorage residents repeatedly show that this issue is top of their minds. Residents agreed that wildfire safety is a problem in the survey distributed as part of the Hillside District Plan, and the community engagement survey distributed as part of the CWPP found the same results.[110] For more information on the survey results, see *Appendix E: Community Engagement*.

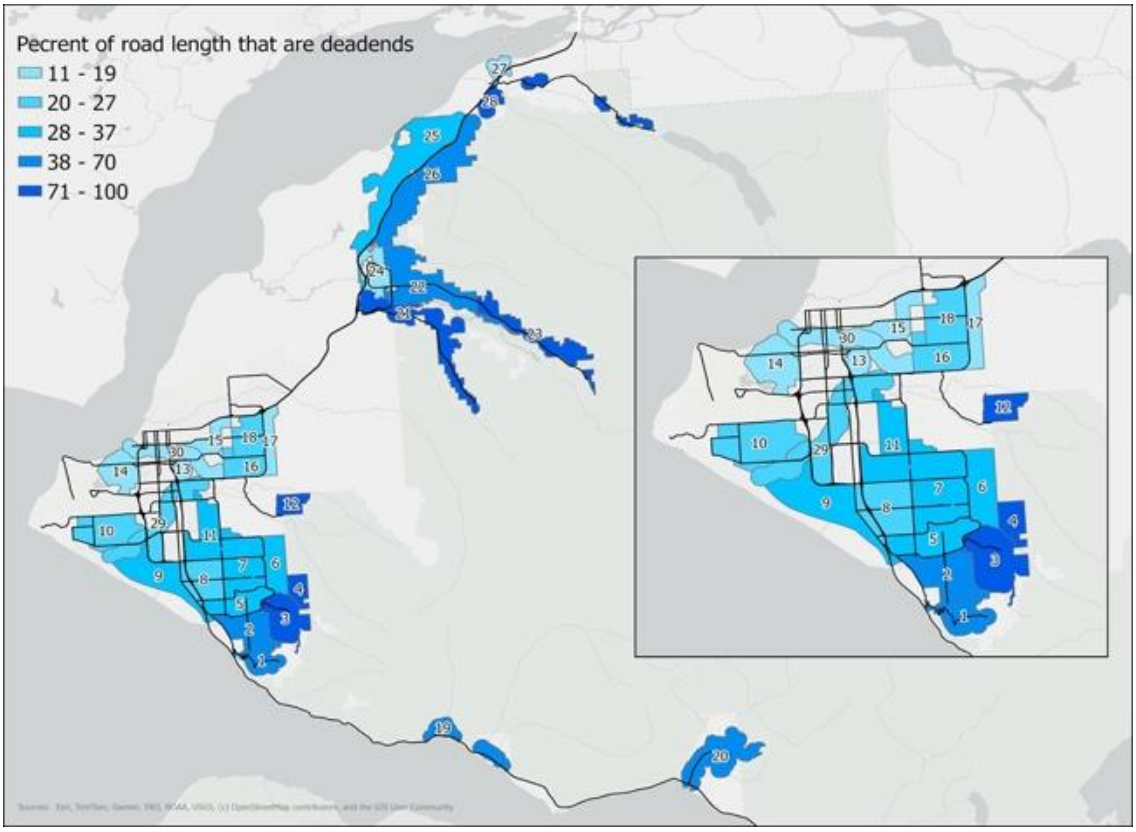


Figure 33 – Percentage of Dead-End Roads in SPU[111]

[110] https://www.muni.org/departments/ocpd/planning/publications/hillside%20district%20plan/hillsidedistrictplan-april2010-web.pdf
[111] https://experience.arcgis.com/experience/53c5785ac0644842b4fe45da002fa339

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 DFFP.

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.[112]

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.*

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

- *Evacuate individuals at risk from wildfire.*
- *Establish perimeters around areas of high risk and enact road closures on threatened or impacted roadways.*
- *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 is an issue for responders. Some markers that are present are not of proper size, material, or position to be effectively seen during a wildfire incident. 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 alerting systems and evacuation procedures, but these events do not reach 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 of the MOA, 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

A thorough analysis of wildfire egress issues is provided in the Anchorage Wildfire Exposure and Egress Study. According to the study, “Solutions include developing alternate egress routes;

preparing homes through Firewise inspections (AWFCG 2009) and treatments; practicing evacuation drills in neighborhoods; improving public notification systems; and working within your community with neighbors and community councils to help each other prepare. Roll up your sleeves and get involved before an emergency happens. Everyone's help is needed!"[113]

Recommendations for the entire MOA include:

- 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.[114]
- 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 and Boards of Supervisors should collaborate with their designated representatives in the Wildland Urban Interface Citizens Advisory Team (WUI-CAT) to plan and conduct community-led evacuation drills. These drills should include community council members gathering to discuss potential evacuation challenges, practice various evacuation routes, and discuss neighbor-to-neighbor communications, such as phone trees. Regular coordination between Community Councils/Boards of Supervisors 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.

[113] Dr. Jennifer Schmidt, Advancing Wildfire Preparedness and Planning in Anchorage: Wildfire Exposure and Egress Study

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

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 property owner mitigation. The National Cohesive Wildland Fire Management Strategy[115] provides an approach to living with wildfire combining landscape-scale fuel treatments, property owner mitigation, fire science, safety and evacuation, and suppression. Programs like Firewise USA and Fire Adapted Communities (FAC) complement this strategy.

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*.

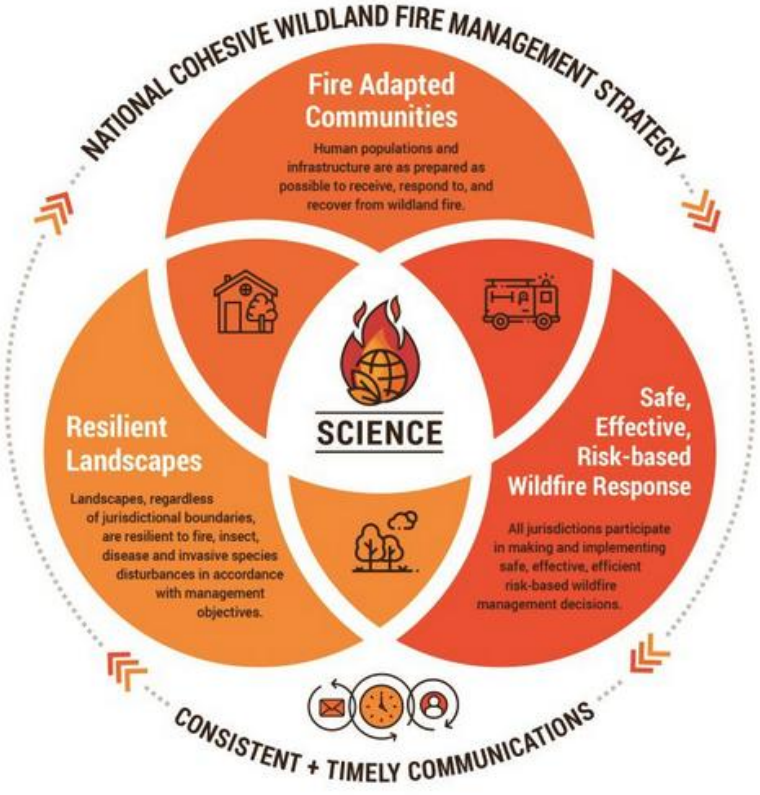


Figure 34 - National Cohesive Wildland Fire Management Strategy

Critical Implementation Recommendation: Support and increase staff of AFD Wildfire Division to support property owner 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.

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

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, property owner mitigation through home hardening and defensible space, and second, stand-level fuel treatments through agency and interagency projects.

Property Owner Mitigation – Home Hardening and Defensible Space

The importance of property owners 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, property owner participation and personal privacy limitations vary widely between differing areas and populations.

A complete discussion of HIZ recommendations for property owners is provided in *Appendix B: Resident Handbook.* There are also great resources available from the DFFP 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.

Hazard Fuel Mitigation 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 property owners 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 35 - 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. Some invasive plant species have been found colonizing burned areas post-fire and aquatic plant species such as Elodea, that negatively affects salmon fisheries, may be spread from one body of water to another as a result of fire suppression activities.[116] [117] The bark-boring beetle infestation has been a significant problem in parts of Alaska in recent years causing tree mortality, and recommendations for keeping trees healthy outlined in *Appendix B: Resident Handbook* can create defensible space and protect the trees against beetles.[118] The DNR Division of Agriculture Plants Materials Center developed a Strategic Plan for Invasive Weed & Agricultural Pest Management and Prevention in Alaska to address the issue of invasive species in Alaska.[119] Anchorage Parks & Recreation, Eagle River/Chugiak Parks & Recreation, and Girdwood Parks & Recreation perform invasive species management on many parks throughout the MOA.

ANC-CISMA (Anchorage Cooperative Invasive Species Management Area) is guided by the philosophy that "invasive species do not respect land ownership and boundaries."[120] The ANC-CISMA Invasive Plant Strategic Plan (2024) outlines how landowners and managers can coordinate and collaborate on invasive species management. Information for the public is available via a story map.[121]

Firebreaks & Fuel Breaks

A firebreak is, "a natural or constructed barrier used to stop or check fires that may occur, or to provide a control line from which to work," and a fuel break is, "a natural or manmade change in fuel characteristics which affects fire behavior so that fires burning into them can be more readily controlled."[122].

In Anchorage's forested environments, firebreaks and fuel breaks 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. Firebreaks, where feasible, should be designed to improve access for suppression resources to otherwise difficult or inaccessible areas.

[116] https://www.uaf.edu/ursa/research-day/2025-rca-day/posters_rca25/Adams_2025%20RCA.pdf
[117] https://dnr.alaska.gov/ag/akpmc/invasives/pdf/2015ElodeaAnchorageProject.pdf
[118] https://alaskatreesolutions.com/beetle-kill-info/
[119] https://dnr.alaska.gov/ag/akpmc/invasives/pdf/Strategic_Plan_for_Invasive_Weed_Management_Alaska.pdf
[120] https://www.anchorageinvasives.org/invasives
[121] https://storymaps.arcgis.com/stories/0eacb76401bb49c8aece1678f951d3d6
[122] https://www.nwcg.gov/publications/pms205/nwcg-glossary-of-wildland-fire-pms-205

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.

Fuel breaks are more visually appealing therefore they tend to receive more support from residents and stakeholders. "Unlike firebreaks, fuel breaks may still burn. The key to remember is that these areas can slow the spread of a fire because they are managed to provide far less fuels to carry the flames."[123]

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 firefighters and other emergency personnel in both structural and wildland firefighting methods and tactics.

Mitigation Methods and Techniques

The projects recommended in this plan, whether property owner 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 DFFP 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 environmentally sensitive 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.

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. The Basic Principles of Forest Fuel Reduction Treatments includes a slash management discussion for options to mitigate surface fuel loads created by fuel management. [124] This method of fuel reduction is labor-intensive, time consuming, significantly more expensive, and requires continuous treatment for long-term effectiveness.

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,

[123] https://www.nrcs.usda.gov/sites/default/files/2022-09/stelprdb1167385-fuel-and-firebreaks.pdf
[124] Agee and Skinner, 2005 https://research.fs.usda.gov/treesearch/36541

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. For more information on structure hardening, see *Appendix B: Resident Handbook*.

Mechanized Methods

The optimal approach to vegetation management is determined by the 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 called 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 property owner 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 property owners, with wood lots open only a few months in summer. These restrictions significantly limit the property owners' 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 concentration of fuels, 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

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:

Figure 36 - Roadside Mowing Treatment

- Clear all limbs overhanging the road to create at least 14 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 grass adjacent to the road.

To support public safety, agencies responsible for road maintenance must ensure that right-of-way easements are regularly cleared to allow reliable evacuation and emergency responder access.

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 in the United States that occurred during that period (Western Fire Chiefs Association).[125]

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 of 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.

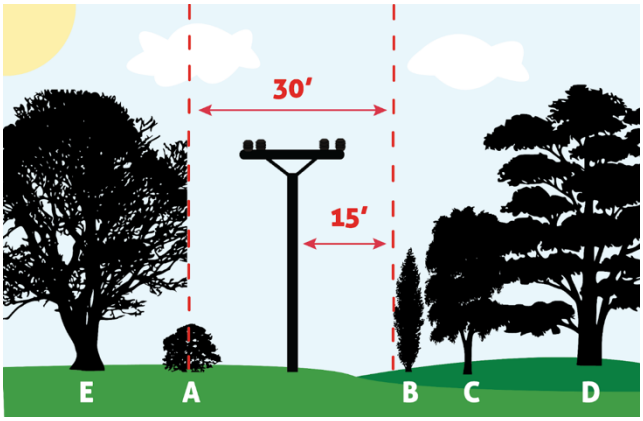


Figure 37 - Powerline Clearance

Electric lines that lead to a residence or building are called "house-drops" and are the responsibility of the individual property owner. 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 government agencies and utilities working closely with large landowners. The USFS, BLM, and DFFP are experts on these types and methods and should be consulted for any treatment on all projects outside of the property owner's property.

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

[125] https://wfca.com/wildfire-articles/power-lines-and-wildfires/

RECOMMENDATIONS

The recommendations which follow are grouped by General, Property Owner, 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: Mitigation Recommendations* 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 DFFP 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 DFFP 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 establishing 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.[126] 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.[127]

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.[128]

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.

[126] https://www.tetoncountywy.gov/FAQ.aspx?QID=168
[127] https://codes.iccsafe.org/content/IWUIC2024V1.0
[128] https://codes.iccsafe.org/content/IFC2018P6

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. Girdwood experiences warmer winters, slightly cooler summers, and receives significantly more precipitation; it receives 40-55 inches of rainfall and 150-200 inches of snow. [129] Conversely, the remainder of Anchorage receives 16-17 inches of rainfall and 75-80 inches of snow, a factor not currently reflected in the mapping.[130] Additionally in Bear Valley, mapping indicated grass fuels as more dominant than 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.

[129] https://weatherspark.com/y/246/Average-Weather-in-Girdwood-Alaska-United-States-Year-Round
https://www.usclimatedata.com/climate/anchorage/alaska/united-states/usak0012

Property Owner 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 property owner 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***.**

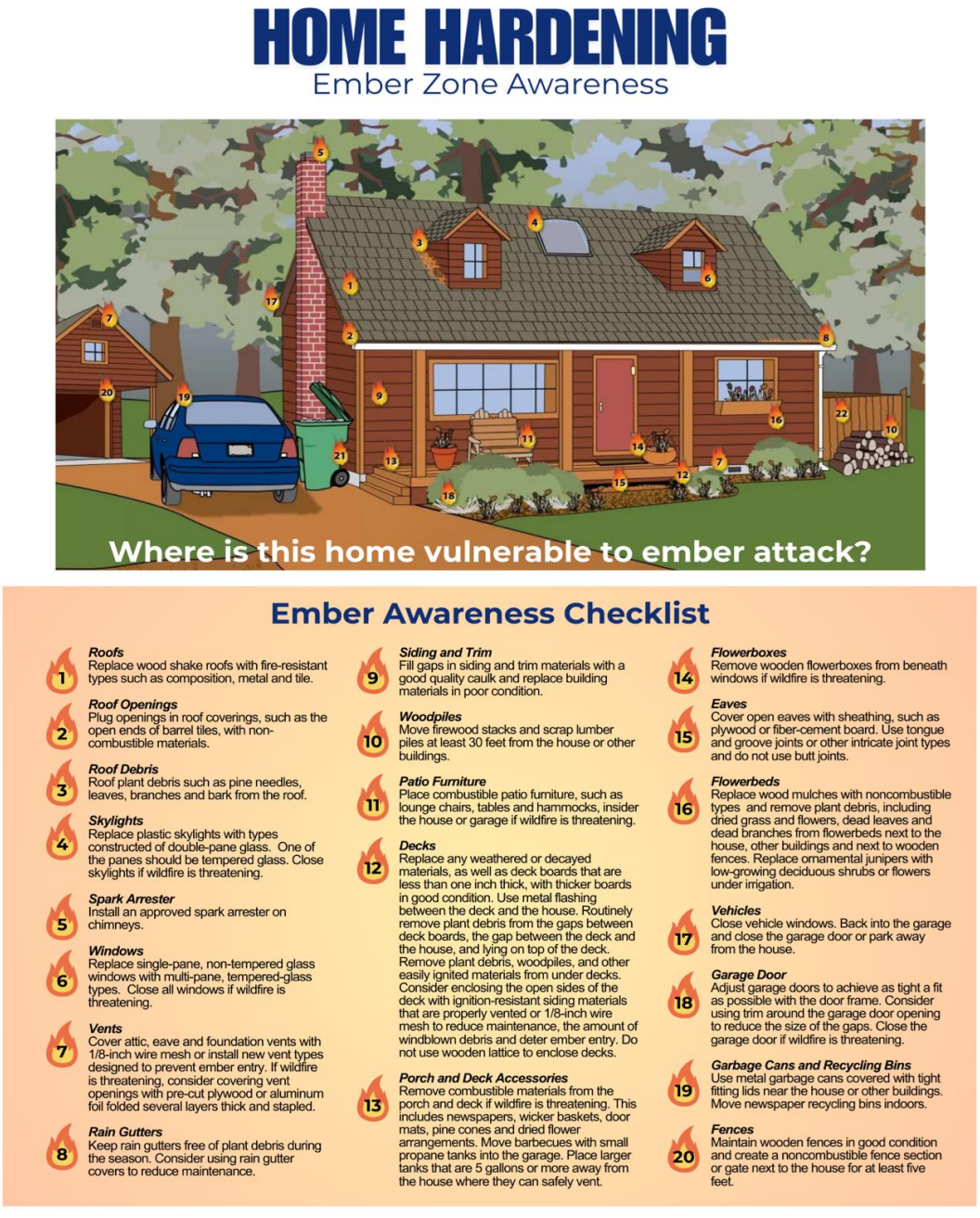


Figure 38 - Home Hardening Graphic

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 for 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.

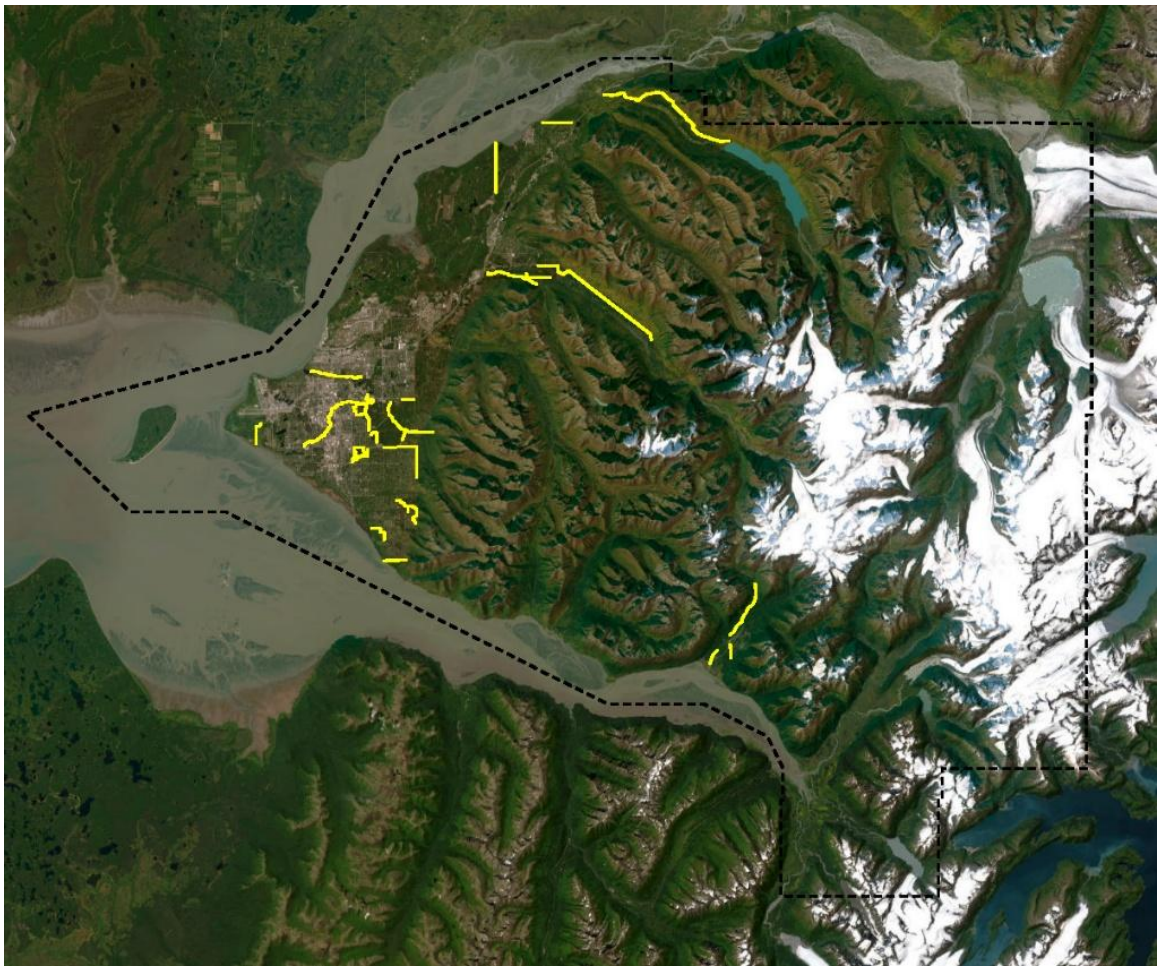


Figure 39 – Recommended Treatments Map[131]

[131] 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

REPI Program

The Readiness and Environmental Protection Integration (REPI) Challenge is a competitive funding program administered by the U.S. Department of Defense (DOD) under the broader REPI Program. This program has funded wildfire mitigation activities in the past. There are two programs that Alaska can qualify for: REPI Challenge and REPI Pacific. REPI Challenge applicants can be anywhere in the United States.

https://www.repi.mil/Buffer-Projects/REPI-Challenge/

REPI Pacific applicants must be in Hawaii, the Marianas Region, and Alaska.

https://www.repi.mil/Buffer-Projects/REPI-Pacific/

DFFP 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 DFFP, which manages and forwards proposals to the Council of Western State Foresters.

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

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