City of Cordova

2025 Local Hazard Mitigation Plan

CITY OF CORDOVA
2025 LOCAL HAZARD MITIGATION PLAN

EXECUTIVE SUMMARY

Hazard mitigation planning is a process that helps communities reduce the impacts of disasters on people and places before a disaster occurs. It involves identifying hazards, understanding vulnerabilities, and developing long-term risk-reduction strategies. For nearly 25 years, hazard mitigation planning has been driven by a federal law, known as the Disaster Mitigation Act of 2000 (DMA 2000), which emphasizes the need for state, tribal, and local entities to closely coordinate hazard mitigation planning and implementation efforts. It also provides the legal basis for the Federal Emergency Management Agency (FEMA) to require state, tribal, and local entities to develop hazard mitigation plans to receive certain types of federal disaster assistance. These requirements are defined in FEMA's State and Local Mitigation Planning Policy Guides and the Tribal Mitigation Plan Review Guide.

To meet the requirements of the DMA 2000, the City of Cordova has updated its 2018 Local Hazard Mitigation Plan (LHMP). Hazards addressed in this plan include avalanche, climate change, drought, earthquake, erosion, flood, hazardous materials, landslide, severe weather, technological, tsunami, volcano, and wildfire.

The 2025 LHMP includes 38 mitigation actions that will help the City tackle the impacts from, and increase resilience to, natural and climate-related hazards. The actions and strategies identified in the plan were developed by members of the steering committee; were previously identified in other City plans, programs, and studies; or have been highlighted as success stories and best management practices elsewhere. They include Cordova Center backup generator; updating City emergency plans; Cordova's mapping system updates; public awareness; communications trailer; community resiliency hubs; heavy equipment for snow/debris removal, avalanche mapping; avalanche events record-keeping; Sheridan Glacier and Sheridan River studies; Cordova Water and Sewer Master Plan Update; water system vulnerabilities; building inspectors; engineering assessment of earthquake vulnerability; assessment and retrofit building; encourage community partners in preparation activities; Stabilize Break Water Avenue, Power Creek Road slope stabilization and repairs; setbacks for new structures; repair, replace and maintain storm drain systems; Six-Mile Subdivision drainage system; continue to comply with National Flood Insurance Program and facilitate Flood Insurance Rate Map updates; hospital flood proofing, complete watershed mapping; structure elevation and/or relocation; update and replace existing streamflow and rainfall gauges; funding for riverbank protection; conditional ownership and management of Eyak Lake Weir; Meals Lake Dam Repairs, identify and organize local resources, hazardous material trainings, hazardous material drills and exercises; continue to participate in StormReady; continue to participate in Tsunami Ready; update and expand communications; fire and emergency service vehicles, training, and equipment; water use and filtration limits; and ash masks.

To ensure that the mitigation actions are implemented, and that the overall 2025 LHMP remains relevant, City of Cordova will administer a system to track disasters that have occurred; community assets that have been damaged; public outreach that has been conducted; mitigation actions that have been implemented and the goals that they address documented; new and/or updated studies, reports, and maps that have been published; and changes that have made and/or that need to be made to the current or future LHMP. This process, along with a multi-department approach to planning integration and ongoing community engagement, will enable the City to effectively implement priority mitigation actions that will improve the City's health and wellness, community, and education and environment.

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LIST OF ACRONYMS AND ABBREVIATIONS

ºF	degrees Fahrenheit
AECOM	AECOM Technical Services, Inc.
BRIC	Building Resilient Infrastructure and Communities
CFR	Code of Federal Regulations
CTC	Cordova Telephone Coop
DMA 2000	Disaster Mitigation Act of 2000
EHS	Extremely Hazardous Substance
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
GIS	geographic information system
HMA	Hazard Mitigation Assistance
HMGP	Hazard Mitigation Grant Program
LHMP	Local Hazard Mitigation Plan
M	Magnitude
mph	miles per hour
NASA	National Aeronautics and Space Administration
NCRF	National Coastal Resilience Fund
NFIP	National Flood Insurance Program
NOAA	National Oceanic and Atmospheric Administration
SFHA	Special Flood Hazard Area
U.S.	United States
USCGC	Unites States Coast Guard Cutter

1.0 INTRODUCTION

1.1 HAZARD MITIGATION PLANNING

Hazard mitigation planning is a process that helps communities reduce the impacts of disasters on people and places before a disaster occurs. It involves identifying hazards, understanding vulnerabilities, and developing long-term risk-reduction strategies. For nearly 25 years, hazard mitigation planning has been driven by a federal law, known as the Disaster Mitigation Act of 2000 (DMA 2000), which emphasizes the need for state, tribal, and local entities to closely coordinate hazard mitigation planning and implementation efforts. It also provides the legal basis for the Federal Emergency Management Agency (FEMA) to require state, tribal, and local entities to develop hazard mitigation plans to receive certain types of federal disaster assistance. These requirements are defined in FEMA's State and Local Mitigation Planning Policy Guides and the Tribal Mitigation Plan Review Guide.

1.2 2025 LOCAL HAZARD MITIGATION PLAN SYNOPSIS

To meet the requirements of the DMA 2000, the City of Cordova is updating its 2018 Local Hazard Mitigation Plan (LHMP). Additional previous plans include the 2013 LHMP Update and the 2008 LHMP. Hazards addressed in this plan include avalanche, climate change, drought, earthquake, erosion, flood, hazardous materials, landslide, severe weather, technological, tsunami, volcano, and wildfire. The 2025 LHMP is organized to follow FEMA's 2025 Local Mitigation Plan Review Tool (Appendix A), which demonstrates how hazard mitigation plans meet the DMA 2000 regulations. As such, specific planning elements of this review tool are in their appropriate plan sections.

The 2025 LHMP structure has been updated to include the following sections:

- **Section 2 Planning Process** provides an overview of the planning process, starting with a timeline. It identifies planning team members and describes their involvement with the planning process. This section also details stakeholder outreach and public involvement. In addition, it provides an overview of the existing plans and reports, and how those documents were incorporated into the 2025 LHMP. Documentation that supports the planning process is provided in Appendix A.
- **Section 3 Community Description** provides information about Cordova's location, geography, history, demographics, economy, and critical facilities. Supporting figures are provided in Appendix B.
- **Section 4 Risk Assessment** describes each of the hazards addressed in this plan. Hazard figures are provided in Appendix B. This section also describes the City's vulnerability to each hazard and impacts.
- **Section 5 Mitigation Strategy** provides a hazard-mitigation-specific capability assessment. It also describes the mitigation goals, potential mitigation actions, and a finalized mitigation action plan. A detailed description of each mitigation action is provided in Appendix C.
- **Section 6 Plan Maintenance** describes continued public participation and outlines how the plan will be implemented, integrated into other documents, and updated in 5 years. An Annual Review Tracker is in Appendix D.
- **Section 7 Plan Update** describes the changes in development and priorities and provides an update on mitigation actions identified in the 2018 LHMP and how the 2018 LHMP was integrated into other planning documents.
- **Section 8 Plan Adoption** provides information about the formal adoption. The adoption resolution is provided in Appendix E.

- Appendices include Appendix A – Planning Process, Appendix B – Figures, Appendix C – Mitigation Strategy, Appendix D – Plan Maintenance, and Appendix E – Adoption Resolution.

2.0 PLANNING PROCESS

This section addresses Element A of the Local Mitigation Plan Regulation Checklist.

Element A: Planning Process	
A1.	Does the plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement §201.6(c)(1))
A1-a.	Does the plan document how the plan was prepared, including the schedule or time frame and activities that made up the plan's development, as well as who was involved?
A1-b.	Does the plan list the jurisdiction(s) participating in the plan that seek approval, and describe how they participated in the planning process?
A2.	A2. Does the plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? (Requirement §201.6(b)(2))
A2-a.	Does the plan identify all stakeholders involved or given an opportunity to be involved in the planning process, and how each stakeholder was presented with this opportunity?
A3.	Does the plan document how the public was involved in the planning process during the drafting stage? (Requirement §201.6(b)(1))
A3-a.	Does the plan document how the public was given the opportunity to be involved in the planning process and how their feedback was included in the plan?
A4.	A4. Does the plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement §201.6(b)(3))
A4-a.	A4-a. Does the plan document what existing plans, studies, reports and technical information were reviewed for the development of the plan, as well as how they were incorporated into the document?

2.1 OVERVIEW OF THE 2025 LHMP PLANNING PROCESS

The development of the 2025 LHMP was a collaborative effort between the City of Cordova, the consultant AECOM Technical Services, Inc. (AECOM), and a planning team. The planning process officially kicked off in November 2024 and ended in [month year]. A timeline of the major planning tasks and milestones by month is provided in Table 2-1. A list of the planning team members and how they contributed to the development of the plan is provided in Table 2-2.

Table 2-1: LHMP Timeline

Date	Tasks	People Involved
November 11, 2024	First LHMP planning team meeting; project overview Initial information collected: hazards to be profiled	LHMP project manager, consultant
December 19, 2024	Second planning team meeting; previous LHMP mitigation actions reviewed	LHMP project manager, consultant, planning team
January 6, 2025	Initial public outreach via Facebook and initial stakeholder involvement via email	LHMP project manager

Date	Tasks	People Involved
February 28, 2025	Third planning team meeting; continuation of review of previous LHMP mitigation actions discussed	LHMP project manager, consultant, planning team
March 2025	Hazard figures created; hazard impact assessments drafted Draft mitigation actions developed	consultant
May 2025	Internal Draft LHMP	LHMP project manager, consultant, planning team
October 2025	Public Draft LHMP Follow-up public outreach and stakeholder involvement	LHMP project manager, consultant, public
	Final Draft LHMP	LHMP project manager, consultant, Alaska Division of Homeland Security and Emergency Management, FEMA Region 10
	Adoption of Final LHMP	LHMP project manager, City of Cordova City Council

Table 2-2: Planning Team

Name	Title and Affiliation[1]	Contribution
Kevin Johnson	Public Works Director, City of Cordova	Planning team lead; attended all meetings, provided updates on previous LHMP actions, reviewed draft mitigation actions.
Heather Brannon	Emergency Management Coordinator, City of Cordova	Former planning team member before position changed; provided detailed notes on current hazards and data sources and recommendations for mitigation actions.
Kim Roeland	Planner, AECOM Technical Services	Consultant; prepared plan, including hazard figures, risk assessment tables, mitigation strategies, and Draft and Final LHMP.

2.2 OPPORTUNITIES FOR STAKEHOLDERS

On April 17, 2025, the LHMP project manager reached out to stakeholders via email (Appendix A) regarding the 2025 LHMP and invited them to participate in the planning process. Stakeholders included the Alaska Department of Transportation, Cordova Electric Cooperative, Cordova Telecom, Native Village of Eyak, Copper River Watershed Project, Cordova School District, U.S. Forest Service, and Cordova Avalanche Center. No stakeholder comments were received.

The LHMP project manager reached out to the stakeholders again via email on [date], inviting them to review and provide comments about the Public Draft LHMP (Appendix A). On [date], a copy of the draft plan was sent to [X].

2.3 PUBLIC INVOLVEMENT

On January 6, 2025, the City of Cordova posted information about the 2025 LHMP kickoff on the City's website and on the City's Facebook page. Also, on January 6, 2025, the City sent out a notice on the public notices email list to over 700 recipients. No public comments were received.

On XXX, 2025, the City of Cordova posted information about how to review the Draft 2025 LHMP on the City's website and on the City's Facebook page. Also, on XXXX, 2025, the City sent out a notice on the public notices list to over 700 recipients. Finally, on XXXXX, the City prepared a notice for the agenda packet for Planning Commission and City Council meetings, held on XXXX. [Comments were submitted concerning XXXX].

Screenshots of Cordova's public involvement are provided in Appendix A.

2.4 REVIEW AND INCORPORATION OF EXISTING PLANS AND REPORTS

A list of the major relevant plans and reports reviewed and incorporated into the 2025 LHMP is provided in Table 2-3.

Table 2-3: Existing Plans and Reports

Plans and Reports	Information to Be Incorporated into the 2025 LHMP
Alaska State Hazard Mitigation Plan Update (2023)	Information on statewide trends and the nature for all hazards are incorporated into the hazard profile and risk assessment sections
Alaska Baseline Erosion Assessment, Erosion Information Paper – Cordova, Alaska (USACE 2007)	Background erosion information is incorporated into the hazard profile and impacts section
Alaska's Changing Environment (Thoman and Walsh 2019)	Information on statewide climate change observed trends used in the climate change hazard profile and impacts section
Alaska Chapter of the Fifth National Climate Assessment (Huntington et al. 2023)	Statewide climate change trends and projections used in the climate change hazard profile and impacts section
2023 American Community Survey	Information for community profile
Alaska Department of Environmental Conservation's Statewide Oil and Hazardous Substance Spills Database	Information for the hazardous materials hazard
City of Cordova, Alaska Local Hazards Mitigation Plan Update (2018)	Information on community trends and the nature for all hazards are incorporated into the hazard profile and risk assessment sections
City of Cordova Comprehensive Plan (2008, 2019)	Economic information for community description
Cordova Priority Climate Action Plan (2023)	Climate change information incorporated into hazard profile; climate change actions considered for mitigation strategies addressing climate change
Cordova, Alaska, Department of Community, Commerce, and Economic Development, Division of Community and Regional Affairs (DCRA 2021).	Information for community description
Copper River Highway Transportation Master Plan (October 2023)	Transportation information for community description
National Aeronautics and Space Administration (NASA) Sea Level Evaluation and Assessment Tool	Information for climate change hazard profile
National Oceanic and Atmospheric Administration (NOAA) Sea Level Rise Viewer	Information for climate change hazard profile

Plans and Reports	Information to Be Incorporated into the 2025 LHMP
National Drought Mitigation Center	Information for drought hazard profile
Statewide Threat Assessment: Identification of Threats from Erosion, Flooding, and Thawing Permafrost in Remote Alaska Communities (Denali Commission 2019)	Background erosion, flooding, and permafrost information is incorporated into the hazard profiles
University of Alaska Fairbanks Climate Adaptation Science Center	Information for climate change hazard profile
Alaska Volcano Observatory	Information for volcano hazard profile

3.0 COMMUNITY DESCRIPTION

This section describes the location, geography, and history; demographics; economy; and critical facilities of the Cordova community.

3.1 LOCATION, GEOGRAPHY, AND HISTORY

Cordova is located at the southeastern entrance of Prince William Sound in the Gulf of Alaska (Figure 1). The community was built on Orca Inlet at the base of Eyak Mountain. It lies 52 air miles southeast of Valdez and 150 miles southeast of Anchorage at approximately 60.5403, North Latitude, and -145.7588, West Longitude (Sec. 28, T015S, R003W, Copper River Meridian). The area encompasses 61.4 square miles of land and 14.3 square miles of water. Cordova is in the Cordova Recording District.

Cordova falls within the gulf coast maritime climate zone, characterized by a rainy atmosphere, long, cold winters, and mild summers. Cordova lacks prolonged periods of freezing weather at low altitudes and is characterized by cloudiness and frequent fog. The combination of heavy precipitation and low temperatures at high altitudes in the coastal mountains of southeastern Alaska accounts for the numerous mountain glaciers.

The area has historically been home to the Alutiiq and migrating Athabascan and Tlingit Native Alaskans who called themselves Eyaks. Alaska Native of other descents also settled in Cordova—Eyak Natives living near the shore of the lake, and Alutiiq Natives living along the coastal areas of Prince William Sound, were guaranteed a food source with the return of the salmon each spring. Orca Inlet was originally named "Puerto Cordoba" by the Spanish explorer Don Salvador Fidalgo in 1790. By 1887 two canneries were operating in the Odiak Slough area. Soon other fisheries developed and multiplied, and by the 1920s, Cordova became known as the "Razor Clam Capital of the World." One of the first producing oilfields in Alaska was discovered at Katalla, 47 miles southeast of Cordova, in 1902. The town of Cordova was named in 1906 by Michael Heney, builder of the Copper River and Northwestern Railroad, and the city was formed in 1909. Cordova became the railroad terminus and ocean shipping port for copper ore from the Kennecott Mine up the Copper River. The first trainload of ore was loaded onto the steamship "Northwestern," bound for a smelter in Tacoma, Washington, in April 1911. The Bonanza-Kennecott Mines operated until 1938 and yielded over $200 million in copper, silver, and gold. The Katalla oil field produced until 1933, when it was destroyed by fire. Fishing became the economic base in the early 1940s.

3.2 DEMOGRAPHICS

The 2020 U.S. Census population was 2,609 residents. The most recent 2023 Department of Community, Commerce, and Economic Development–certified population is 2,540 with the median age of 37.8. The population is 72.73 percent white, 10.19 percent Asian, 12.27 percent two or more races, 3.83 percent American Indian or Alaskan Native, and less than 1 percent Black or African American, Native Hawaiian or Pacific Islander, or other. The male and female composition is approximately 49.69 percent and 50.31 percent, respectively. The 2023 American Community Survey reported 862 housing units occupied, and an additional 281 which are vacant (e.g. seasonal, rental or unoccupied), for a total of 1,143 units.

3.3 ECONOMY

The economy of the area is primarily based on commercial fishing with a large fishing fleet for Prince William Sound and several fish processing plants. Cordova's major commercial fishing focus is on salmon (Copper River red salmon and pink salmon). Mariculture and kelp farming is an emerging industry in Cordova. According to the Comprehensive Plan (2019), new wintertime fishery opportunities include cod, shrimp, herring, and halibut. Additionally, commercial and recreational use activities in southeastern Prince William Sound have been increasing, bringing more sports fishers and visitors utilizing local charter boats

and lodges. According to the 2019 Comprehensive Plan, Cordova's top industries are local government (24%), trade transportation and utilities (20%), and manufacturing (including seafood processing) (16%) The U.S. Coast Guard maintains an Air Support Facility 13 miles out of town adjacent to Mudhole Smith Airport, and the U.S. Coast Guard buoy tender *Sycamore* is home ported in Cordova. The U.S. Forest Service also has personnel in Cordova.

Cordova is accessed by plane or boat and receives year-round barge and seasonal state ferry services (not available generally October through the winter). The U.S. Coast Guard Cutter *Fir* (USCGC Fir) services and maintains navigation aids around the Gulf of Alaska providing essential services to commercial vessel traffic in Prine William Sound including Cordova. The State-owned Cordova Municipal Airport and Merle K. (Mudhole) Smith Airport have daily flights, and a State-maintained road across Copper River Delta provides access to the east, though it has been closed past mile 37 since 2011.

According to the 2023 American Community Survey, the median family income is $88,538, and the unemployment rate is 10.9 percent.

3.4 CRITICAL FACILITIES

Critical facilities are essential for life, safety, and economic viability in Cordova. In Cordova, critical facilities include the Cordova Center, airports, harbor, ferry terminal, reservoir, power plants, schools, water treatment plant, lift and pump stations, landfill and refuse transfer station, communications facilities, medical center, offices, and shops (Table 3-1, Figure 2). These critical facilities focus on City-owned facilities and infrastructure.

Table 3-1: Critical Facilities

Type	Description
Communication	Cordova Telephone Cooperative (CTC) Main Building, Tripod Hill Cell Towers, CTC Earth Station, CTC Heney Ridge Microwave Site, and CTC Subsea Cable Landing
Government	Cordova Center (includes City Hall), City public works shop / equipment yard
Education	Mt. Eyak Elementary, Mt. Eccles Elementary School, Cordova Junior / Senior High School, District Office, Innovative Learning Program, maintenance shop
Solid Waste	Refuse transfer station, landfill
Utilities	Water tanks, treatment plants, power plants, pump stations, lift stations, reservoir and weir, dam, settling ponds, treatment plant buildings and shops
Road/Air/Marine Transportation	Two airports (Cordova Municipal Airport and Mudhole Smith Airport), two docks (City T Dock and Ocean Dock) small boat harbor, ferry terminal
Medical and Public Safety	U.S. Coast Guard air and boat stations, public safety building (includes Cordova Police Department, Alaska State Troops, Fire and Emergency Medical Services), 5-Mile Public Safety Sub-Station, Cordova Medical Center, Ilanka Community Health Center

4.0 RISK ASSESSMENT

This section addresses Element B of the Local Mitigation Plan Regulation Checklist.

Element B: Risk Assessment	
B1.	Does the plan include a description of the type, location, and extent of all natural hazards that can affect each jurisdiction(s)? (Requirement § 201.6(c)(2)(ii))
B1-a.	Does the plan describe all natural hazards that can affect the jurisdiction(s) in the planning area, and does it provide the rationale if omitting any natural hazards that are commonly recognized to affect the jurisdiction(s) in the planning area?
B1-b.	Does the plan include information on the location of each identified hazard?
B1-c.	Does the plan describe the extent for each identified hazard?
B1-d.	Does the plan include the history of previous hazard events for each identified hazard?
B1-e.	Does the plan include the probability of Future events for each identified hazard? Does the plan describe the effects of future conditions, including climate change (e.g., long-term weather patterns, average temperature, and sea levels), on the type, location and range of anticipated intensities of identified hazards?
B1-f.	For participating jurisdictions in a multi-jurisdictional plan, does the plan describe any hazards that are unique to and/or vary from those affecting the overall planning area?
B2.	Does the plan include a summary of the jurisdiction's vulnerability and the impacts on the community from the identified hazards? Does this summary also address National Flood Insurance Program (NFIP)-insured structures that have been repetitively damaged by floods? (Requirement 44 CFR § 201.6(c)(2)(ii))
B2-a.	Does the plan provide an overall summary of each jurisdiction's vulnerability to the identified hazards?
B2-b.	For each participating jurisdiction, does the plan describe the potential impacts of each of the identified hazards on each participating jurisdiction?
B2-c.	Does the plan address NFIP-insured structures within each jurisdiction that have been repetitively damaged by floods?

4.1 HAZARD IDENTIFICATION

Hazard identification consists of describing the nature of the hazard, disaster history, location, extent/severity, and probability of future events. Hazard identification profiles have been developed for each of the hazards addressed in Section 4.1.1 through Section 4.1.13: avalanche, climate change, drought, earthquake, erosion, flooding, hazardous materials, landslide, severe weather, technological/cyber threat, tsunami, volcano, and wildland fire. The hazards profiled for this LHMP are discussed in alphabetical order and not hazard classification. The order does not signify level of risk.

4.1.1 Avalanche

Table 4-1: Avalanche

Profile	Description
Nature	A snow avalanche is a downhill mass movement of snow. Their size, run-out distance, and impact pressure vary. Large avalanches have the potential to kill people and wildlife, destroy infrastructure, level forests, and bury entire communities. Snow avalanche formation is influenced by precipitation type and intensity, wind direction and speed, sensible heat, and radiation heating or cooling of snow. Significant avalanche cycles (multiple avalanches naturally releasing across an entire region) are generally caused by long periods of heavy snow, but avalanche cycles can also be triggered by rain-on-snow events, rapid warming in the spring, and earthquakes. An avalanche releases when gravity-induced shear stress on or within the snowpack becomes larger than its shear strength. The shear strength is reduced by the presence of weak layers or interfaces in the snowpack, such as buried faceted snow crystals or density differences between snow layers. Triggers can be natural (e.g., rapid weight accumulation during or just after a snowstorm or rain event, warming temperatures, and seismic shaking) or artificial (e.g., human weight or avalanche-control artillery). There are four distinct avalanche types in Alaska that occur under varying snowpack and weather conditions. Each avalanche type is named based on its snow release characteristics: • Cornice collapse • Loose snow avalanche • Slab avalanche • Slush avalanche/flow • Glide avalanche Cornice collapse occurs when an overhanging snow mass breaks, separates, or is released. Cornices form on ridge crests or shoulders adjacent to gullies due to wind blowing the snow. The cornice is an indicator of predominant wind directions, as the cornice is formed on the lee (i.e., downwind) side of topographic features. Over time, the cornice can develop weaknesses in its structure and its attachment to the slope may fail. A cornice collapse often triggers a loose snow or slab avalanche as it adds sudden and significant stress onto the snowpack below. Loose snow avalanches, also known as point releases, initiate with a small amount of non-cohesive (loose) snow and quickly grow larger as they move downhill and entrain more snow. This type of avalanche typically carries relatively small amounts of powder snow and virtually no other debris. However, a loose snow avalanche may trigger a larger slab avalanche on the same slope. A slab avalanche releases as a block of cohesive snow when snow particles have stuck together to form one or more resistant layers. There is a wide range of slab characteristics possible, from “soft” slab (weakly cohesive snow) to “hard” slab (very cohesive snow), and from “storm” slab (release of recently deposited storm snow), to “persistent” and “deep persistent” slab (release of a slab that failed on a weak layer deeper down in the snowpack). Due to their large release masses, and because more snow is picked up along the way (snow entrainment), slab avalanches are the most destructive avalanche type. Human encounters with even small-sized slab avalanches are often fatal. Slush avalanches are fast-moving mixtures of snow and water. They release in isothermal snowpacks (snow temperature throughout the snowpack is 32°F) when liquid water permeates the snowpack and dramatically weakens the intergranular bond. Slush avalanches therefore typically occur in northern Alaska during the spring when warm temperatures and strong solar radiation quickly warm up the snowpack. Slush avalanches can release on slopes as gentle as 20 degrees. Their release is often slower than other avalanche types, but as the slushy snow runs downhill they can reach speeds over 40 miles per hour. Smaller, more fluid avalanches with higher water content are commonly referred to as slush flows.

Profile	Description
	A glide avalanche is preceded by a full-depth crack in the snowpack due to the entire snowpack sliding on the ground. A glide avalanche can consist of either moist/wet or almost entirely dry snow but typically develops after some moisture is introduced to the snowpack. The avalanche release can occur seconds to months after the crack appears, though many glide cracks do not result in an avalanche at all. Glide cracks typically develop on convex slopes and rollovers. They are very difficult to forecast, and their release is triggered naturally and catastrophically. An avalanche path comprises three main parts: starting zone, track, and run-out zone. Local topography determines the shape and size of each part. Steep gullies that contain a stream or creek in the summer often function as avalanche paths in the winter, but avalanches also release and run on simple and complex open slopes.
Location	The areas of concern in Cordova for avalanche are shown in Figure 3. Additionally, based on historical occurrences of avalanches and notes from City staff, the following locations are the main concern areas: • Shepard Point • Copper River Highway • New England Cannery Road • Power Creek Road along Eyak lake
History	The following notable avalanches have occurred in Cordova since 1999: • April 1999: Avalanche resulted in fatality at Power Creek Road. • January 2000: Large avalanche near milepost 5.5 of Copper River Highway damaged five houses and two warehouses along with numerous outbuildings, cars, and boats, and resulted in one fatality and several injuries. • December 2001: Avalanche in a residential area resulted in a fatality. • March 2008: Avalanche on Mount Eyak resulted in a fatality. • January and April 2012: Three separate avalanches closed the Copper River Highway with no reported damages or injuries.
Extent / Severity	The extent and severity of avalanches in Cordova are influenced by weather conditions, with heavy snowfall, rapid temperature changes, and rain-on-snow events increasing risk. Terrain (steep slopes), human activity (recreation, construction), and location of transportation assets and other built structures also influence the extent and severity of avalanches. Figure 3 shows the potential snow release areas for avalanches in Cordova. The January 2000 avalanche resulted in a declaration of an avalanche disaster.
Recurrence Probability	Cordova is located in a region with steep slopes and significant snowfall, making it prone to avalanches especially during periods of heavy snow, rapid temperature changes, or rain-on-snow events.

4.1.2 Climate Change

Table 4-2: Climate Change

Profile	Description
Nature	Climate change is defined as the average statistics of weather, which includes temperature, precipitation, and seasonal patterns in a particular region. Climate change refers to the long-term and irrevocable shift in these weather-related patterns, either regionally or globally. The Earth and its natural ecosystem are very closely tied to the climate, and any permanent climate change will lead to an imbalance in the existing ecosystem, which impacts the way people live, the food they harvest, their health, the wildlife, the availability of water, and much more. Research indicates that much of this warming is due to human activities—primarily the burning of fossil fuels and the clearing of forests—that release carbon dioxide (CO_2) and other gases into the atmosphere, which trap heat that would otherwise escape into space. Once in the atmosphere, these heat-trapping emissions remain there for many years (for example, CO_2 lasts about 100 years). If left unchecked, by the end of the century CO_2 concentrations could reach levels three times higher than in pre-industrial times. According to most climatologists, the planet is starting to experience shifts in climate patterns and an increased frequency of extreme weather events at both the global level and the local level. Over the next century, increasing atmospheric greenhouse gas concentrations are expected to cause a variety of changes to local climate conditions, including sea level rise, increased precipitation and flooding including storm surge and stormwater inundation; and more frequent and prolonged higher temperatures (leading to extreme heat events and wildfires)—particularly inland—that decrease air quality and cause extended periods of drought. In addition, expected social and economic impacts as a result of climate change include energy shortages, ecosystem changes impacting fisheries and subsistence food practices, failing infrastructure, and water insecurity, to name a few.
Location	According to Alaska's Changing Environment, the effects from climate change include rising temperatures and extreme heat, severe moisture deficit/drought, sea level rise, coastal erosion, extreme precipitation and flooding, and wildfires, is already under way throughout Alaska, including Cordova. Specific details regarding the locations of drought, erosion, flood, and wildfire are shown in Figure 4, Figure 6, Figure 7, and Figure 13, respectively. Drought occurrences are regional and impact large areas of Alaska. Therefore, all of the city of Cordova is vulnerable to drought. Coastal erosion and flooding from storm surge and king tides is mainly a problem on Breakwater Avenue and New England Cannery Road (also called Orca Road). Additional areas of flooding related to glacier melt and runoff include Copper River Highway, Eyak River, and Eyak Lake. The wildfire exposure area, or the likelihood that wildfire will get to and impact a location, in Cordova ranges from very low for a majority of Cordova to high and extreme near the airport.
History	As noted previously, according to the Alaska's Changing Environment, climate change is already underway in Alaska, including Cordova. Recent impacts from climate change affecting Cordova include but are not limited to: • An increase in annual average temperature from 30.2ºF in 1950 to 31.6ºF in 2020 (4.6% increase) in Anchorage. • A record high temperature of 90ºF in July 2019 in Anchorage. • An increase of annual precipitation from 17.0 inches to 18.4 inches (8.2% increase) in Anchorage from 1950 to 2020. • An annual increase of 0.81 millimeters per year of sea level rise from 1993 to 2019 in Cordova. • A marine heatwave in 2014-2016 in the Gulf of Alaska impacting marine ecosystems and disruption of fisheries.

Profile	Description
Extent / Severity	The University of Alaska Fairbanks Scenarios Network for Alaska + Arctic Planning projects Cordova's decadal mean annual temperatures to increase by about 4.4ºF by the end of the century (Table 4-3). Precipitation models show a likely increase in decadal mean total precipitation by 14.9 inches (Table 4-3). Over the next century, weather patterns that are considered extreme today are expected to become the standard. According to the University of Alaska Fairbanks Scenarios Network for Alaska + Arctic Planning projects, Cordova is projected to become warmer, with an annual mean warming of approximately 4°F by end-of-century. Precipitation in the region will continue to exhibit high year-to-year variability with very wet and very dry years. The National Oceanic and Atmospheric Administration (NOAA) has produced a sea level rise viewer that shows the impacts of predicted sea level rise by end-of-century. The viewer shows that in Cordova by 2100, the mean higher high water will increase by 5.84 feet assuming a high climate change scenario. The higher tides combined with other factors such as storm surge and higher wave levels will in turn contribute to increased coastal erosion.
Recurrence Probability	Climate change is a significant and lasting change in the statistical distribution of weather patterns over periods of time ranging from decades to millions of years. It may be a change in average weather conditions or in the distribution of weather around the average conditions (i.e., more or fewer extreme weather events). According to NASA, "the current warming trend is of particular significance because most of it is extremely likely (i.e., greater than 95% probability) to be the result of human activity since the mid-twentieth century and proceeding at a rate that is unprecedented over decades to millennia." NASA also states that "scientists have high confidence that global temperatures will continue to rise for decades to come, largely due to greenhouse gases produced by human activities."

4.1.3 Drought

Table 4-4: Drought

Profile	Description
Nature	Drought is a normal, recurrent feature of virtually all climatic zones, including areas of both low and high rainfall. Drought is the result of a natural decline in the expected precipitation over an extended period, typically one or more seasons. Other climatic characteristics impact the severity of drought conditions, including high temperatures, high winds, and low relative humidities. A drought's severity depends on numerous factors, including duration, intensity, geographic extent, and regional water supply demands by humans and vegetation.
Location	Drought occurrences are regional and impact large areas of Alaska. Therefore, all of the city of Cordova is vulnerable to drought.
History	Since 2000, the Chugach Census Area has recorded droughts in 2004, 2009, 2015, and 2019.
Extent / Severity	The National Drought Mitigation Center produces drought monitor maps for the U.S. It classifies droughts into five categories from least severe to most severe as follows: • D0 (abnormally dry) • D1 (moderate drought) • D2 (severe drought) • D3 (extreme drought) • D4 (exceptional drought) Cordova has experienced moderate droughts in 2004, 2009, 2015, and 2019 and a severe drought in 2019 (Figure 4).
Recurrence Probability	Dry spells are not unusual in Alaska and will continue. While annual precipitation over the long-term in Alaska is showing increases, year-to-year variability is expected to continue, influencing the recurrence probability of droughts.

4.1.4 Earthquake

Table 4-5: Earthquake

Profile	Description
Nature	An earthquake is a sudden motion or trembling caused by a release of strain accumulated within or along the edge of Earth's tectonic plates. The effects of an earthquake can be felt far beyond the site of its occurrence. Earthquakes usually occur without warning and can cause massive damage and extensive casualties in a few seconds. Common effects of earthquakes are ground motion and shaking; surface fault ruptures; and ground failure. Ground motion is the vibration or shaking of the ground during an earthquake. When a fault ruptures, seismic waves radiate causing the ground to vibrate. The severity of the vibration increases with the amount of energy released and decreases with distance from the causative fault or epicenter. Soft soils can amplify ground motions. In addition to ground motion, several secondary hazards can occur from earthquakes, such as the following: • Surface faulting is the differential movement of two sides of a fault at the Earth's surface. Displacement along faults—in terms of both length and width—varies but can be significant (e.g., up to 20 feet), as can the length of the surface rupture (e.g., up to 200 miles). Surface faulting can cause severe damage to linear structures including railways, highways, pipelines, tunnels, and dams. • Liquefaction occurs when seismic waves pass through saturated granular soil, distorting its granular structure and causing some of the empty spaces between granules to collapse. Pore water pressure may also increase sufficiently to cause the soil to behave like a fluid for a brief period and cause deformations. Liquefaction causes lateral spreads (i.e., horizontal movements, typically 10 to 15 feet, but up to 100 feet), flow failures (i.e., massive flows of soil, typically hundreds of feet, but up to 12 miles), and loss of bearing strength (i.e., soil deformations causing structures to settle or tip). Liquefaction can cause severe damage to property. • Landslides/debris flows occur as a result of horizontal seismic inertia forces induced in the slopes by the ground shaking. The most common earthquake induced landslides include shallow, disrupted landslides such as rock falls, rockslides, and soil slides. Debris flows are created when surface soil on steep slopes becomes totally saturated with water. Once the soil liquefies, it loses the ability to hold together and can flow downhill at very high speeds, taking vegetation and/or structures with it. Slide risks increase after an earthquake during a wet winter. The two most common measures of earthquakes are the Modified Mercalli Intensity (MMI) scale and Magnitude (M). The MMI Scale measures felt intensity, peak ground acceleration (PGA), and instrumental intensity by quantifying how hard the earth shakes in each location. The scale ranges from an intensity of I to X, with the lower numbers of the intensity scale generally dealing with the "manner in which the earthquake is felt by people" while the higher numbers on the scale are based on "observed structural damage." Magnitude is a measure of the energy released during an earthquake. A scale of magnitude ranges from minor, (M 3.0-3.9) which may be felt by communities, to great (M 8.0 or greater) associated with significant damage expected.
Location	There are several faults that are located in close proximity to Cordova (within 50 miles), some of which are unnamed. The named faults include Cordova Fault, Eyak Fault, Heney Fault, Rude River, Bagley Fault, Etches Fault, and the Ragged Mountain Fault. The Alaska-Aleutian Megathrust Fault, one of the largest and most seismically active regions in the world, is located approximately 90 miles south of Cordova. The entire city of Cordova would be impacted by an earthquake impacting the region (Figure 5).

Profile	Description
History	Alaska is one of the most seismically active regions in the world and is at risk of societal and economic losses due to damaging earthquakes. On average, Alaska has one "great" (i.e., M8 or higher) earthquake every 13 years, one M7 to M8 earthquake every year, and six M6 to M7 earthquakes every year. In addition, earthquakes that occur on tectonic plate boundary faults near the coast can generate tsunamis that impact coastal communities, including Cordova. Significant events are defined by the Alaska Earthquake Center as ones that impacted the Alaskan people and include large magnitude earthquakes, earthquake swarms, large landslides, large glacial-calving events, and tsunami-generating (tsunamigenic) events. Below is a list of significant events in Alaska or strong earthquakes that may have been felt in Cordova, Alaska: • 1964: M9.2 Great Alaskan Earthquake • 2009: M5.4 Skwentna Earthquake • 2012: M5.8 Northern Cook Inlet Earthquake • 2012: M6.3 Gulf of Alaska Earthquake • 2014: M6.3 Skwentna Earthquake • 2014: M6.0 Seward Glacier Earthquake • 2014: M6.0 Palma Bay Earthquake • 2018: M7.1 Anchorage Earthquake • 2021: M8.2 Chignik Earthquake
Extent / Severity	The U.S. Geological Survey (USGS) has developed probabilistic seismic hazard maps for ground shaking potential for Alaska. The 2023 maps refer to an estimate of the probability of exceeding a certain amount of ground shaking or ground motion in 50 years, which is the same as the level of ground shaking with about a 2,500-year average repeat time. The hazard depends on the magnitudes and locations of likely earthquakes, how often they occur, and the properties of the rocks and sediments that the earthquake waves travel through. Regions near major, active faults are shown in orange, red, and pink and experience stronger ground shaking more frequently. Regions that are distant from known, active faults are shown in blue, green, and yellow; these areas experience lower levels of ground shaking and do so less frequently. Figure 5 shows a probabilistic seismic hazard map depicting a 2 percent probability of exceedance in 50 years shows that all of Cordova is in a violent to extreme (MMI intensity value IX/X) ground shaking potential area.
Recurrence Probability	According to the U.S. Geological Survey's 2023 National Seismic Hazard Maps, Cordova has a greater than 95% chance of a slight (or greater) damaging earthquake shaking in 100 years.

4.1.5 Erosion

Table 4-6: Erosion

Profile	Description
Nature	Erosion is the wearing and transportation of land. Erosion is typically gradual land loss through wind or water scour. In developed regions, erosion undermines buildings and infrastructure. Erosion can be experienced from coastal, riverine, or wind sources. Erosion forces are embodied in waves, currents, and winds; surface and ground water flow; and freeze-thaw cycles may also play a role. Not all of these forces may be present at any particular location. In the U.S., Alaska is unique because of how permafrost thaw interacts with flooding and erosion to exacerbate the impacts of these hazards. Frozen ground can disintegrate under the compounding influences of permafrost thaw, flooding, and erosion in an escalating feedback loop that can result in damage that is much greater than would be expected from the individual processes alone. Riverine erosion is often initiated by high sediment loads or heavy rainfall. This generates high volume and velocity runoff that concentrates in the lower drainages in the river's catchment area. Erosion occurs when the force of the flowing water exceeds the resistance of the riverbank material. The water continues to increase its sediment load as it flows downstream. Eventually, the river deposits its sediment in slower moving sections such as dams or reservoirs. The river may eventually change course or develop a new channel. In less stable braided channel reaches, erosion and deposition are constant issues. In more stable meandering channels, erosion episodes may infrequently occur. Mass wasting erosion events occur when large volumes of sand are lost due to gravitational pull on a steep riverbank that has been destabilized from riverine flooding. Coastal erosion is a common term used to describe the retreat of the shoreline along the ocean. It describes the attrition of land resulting in loss of beach, shoreline, or dune material from natural activity or human influences and rarely causes death or injury. However, erosion can cause property destruction, prohibit development, and impact community infrastructure. Erosion can occur rapidly as the result of floods, storms, or other events; or slowly as the result of long-term environmental changes such as melting permafrost. Erosion is a natural process, but its effects can be easily exacerbated by human activity. Coastal erosion can occur from rapid short-term daily, seasonal, or annual natural events such as waves, storm surge, wind, coastal storms, and flooding; or from human activities including boat wakes and dredging. The most dramatic erosion often occurs during storms, particularly because the highest energy waves are generated under storm conditions. Coastal erosion occurs over the area from roughly the top of the shore into the nearshore region to about 30 feet water depth. It is measured as the rate of change in the position or horizontal displacement of a shoreline over a period of time. Bluff recession is the most visible aspect of coastal erosion because of the dramatic change it causes to the landscape. As a result, this aspect of coastal erosion usually receives the most attention. Coastal erosion may also be due to multi-year impacts and long-term climatic change such as sea-level rise; lack of sediment supply; subsidence; or long-term human factors such as aquifer depletion or the construction of shore protection structures and dams. Attempts to control erosion using shoreline protective measures such as groins, jetties, seawalls, or revetments can lead to increased erosion.
Location	Riverine erosion is located primarily on Forest Service Road 220 and the Copper River Highway. The Eyak River and Scott River run within 600 feet of each other, and inflows of the Scott River into the Eyak River cause flooding and erosion upstream in the Eyak River. Coastal erosion from storm surge and king tides is mainly a problem on Breakwater Avenue and New England Cannery Road (also called Orca Road) (Figure 6).
History	In 2006 there were two storm events that caused damage to city roads, the Copper River Highway, and other critical facilities. According to the U.S. Army Corps of Engineers, erosion is closely tied to flooding, and was reported to have occurred three times in the years 1995–2007. In

Profile	Description
	2023 the combination of King tides and strong northern winds caused a portion of New England Cannery Road to fail requiring emergency repairs to stabilize the bank of road along Orca Inlet.
Extent / Severity	The U.S. Army Corps of Engineers listed Cordova as a Priority Action Community in 2009, indicating erosion is threatening the viability of the community or significant resources are being expended to minimize those threats. The Denali Commission (2019) lists Cordova in Erosion Group 2, defined by the threat of erosion not being expected to detrimentally impact critical infrastructure in the near term, but the community still being vulnerable to the threat. Damages from erosion could impact operability for a limited period but would not impact the community's sustainability.
Recurrence Probability	The City of Cordova is likely to continue to experience erosion (and associated flooding) at a recurrence probability similar to what it has experienced in the past. With climate change, sea level rise, and increasing variability in storms and potential for more precipitation falling as rain rather than snow, the recurrence probability for erosion in Cordova may increase into the future.

4.1.6 Flood

Table 4-7: Flood

Profile	Description
Nature	A flood occurs when the existing channel of a stream, river, or other water body cannot contain excess runoff from rainfall, snowmelt, glacier melt, or a combination of these inputs, resulting in overflow onto adjacent lands that are not normally submerged. In Cordova, flooding associated with storm such as those originating in the Gulf of Alaska, or from long and narrow regions of intense water vapor transport originating the mid-Pacific Ocean, known as atmospheric rivers. Both types of storms deliver large amounts of rainfall (or snow) in a short period of time. In Alaska, both the El Niño Southern Oscillation (ENSO) and the Pacific Decadal Oscillation (PDO) are important climate drivers influencing storm tracks as well as temperature and precipitation patterns which influences flooding. In Cordova the most common types of flooding as a result of storms include: • Riverine flood: a flood that occurs when rivers and creeks overflow their banks due to excessive rain or snow and glacier melt over the same area for an extended period of time, and flow into surrounding areas. Localized flooding can occur as a result of riverine flooding when logjams divert high velocity flows. • Coastal flood: a flood that inundates areas along the coast with seawater. There are several causes of coastal flooding, including high tide, storm surge, localized wave action (wave runup and wave overtopping), rising sea levels, and tsunami. Coastal flooding can cause extreme damage to coastlines, including the built environment along the coast, due to the direct force of storm surge waves.
Location	In Cordova, areas most vulnerable to flooding include the Eyak Lake and Eyak River, when lake level is high and is not drained by the outflow of the Eyak River fast enough, or when inflow of the Scott River contributes to flooding. Outburst flooding from a small lake at the east flank of the Scott Glacier occasionally occurs and drains the majority of the volume of water down the Scott River valley. Areas most vulnerable to flooding include Power Creek Road, New England Cannery Road, Breakwater Avenue, Cordova Boat Harbor, and Okiak Shough, and Copper River Highway (Figure 7).
History	According to the National Oceanic and Atmospheric Administration's (NOAA's) Storm Events Database, the following notable floods have occurred since 2000: • Flood in August 2001 • Flood in August 2006 • Flood in September 2012 • Flood and erosion in September 2014 • Flood in September 2022 • Flood and erosion in December 2022

Profile	Description
Extent / Severity	The magnitude of flooding that is used as the standard for floodplain management in the United States is a flood with a probability of occurrence of 1 percent in any given year. This flood is also known as the 100-year flood (i.e., the base flood). The 100-year flood (1 percent annual chance flood) is identified on FEMA's Flood Insurance Rate Maps (FIRMs) as the Special Flood Hazard Area (SFHA), specifically flood zones A and V. As shown in Figure 7, the 2015 FIRM for the City of Cordova identifies 880.8 acres (2.1 percent) within the SFHA. Floods in these areas are generally considered riverine floods or flash floods and are typically caused by prolonged and/or excessive rainfall from storm events or are coastal floods due to extreme tides, storm surge, and overland wave effects due to a storm event. It is important to note that FIRMs do not factor in future impacts such as increased precipitation or sea level rise caused by climate change. The Denali Commission (2019) lists Cordova in Flood Group 2, defined by the threat of flood not being expected to detrimentally impact critical infrastructure in the near term, but the community still being vulnerable to the threat. Damages from flood could impact operability for a limited period but would not impact the community's sustainability.
Recurrence Probability	Flooding can occur at any time. According to NOAA, in southcentral Alaska, storm events that can cause riverine and flash flooding as well as coastal flooding are more frequent and more severe during El Niño years, which currently occur irregularly, but approximately every 2–7 years. Climate modeling shows that these storm events will continue to become more potent in a warming climate and lead to more extreme precipitation events.

4.1.7 Hazardous Materials

Table 4-8: Hazardous Materials

Profile	Description
Nature	Hazardous materials are substances that may have negative effects on health or the environment. Exposure to hazardous materials may cause injury, illness, or death. Effects may be felt over seconds, minutes, or hours (short term); or not emerge until days, weeks, or even years after exposure (long term). In addition, some substances are harmful after single exposures of short duration, while others require long episodes of exposure or repeated exposure over time to create harm. Hazardous materials that pose the greatest risk for causing catastrophic emergencies, as identified by the U.S. Environmental Protection Agency (EPA), are classified as Extremely Hazardous Substances (EHSs). Releases of EHSs and other hazardous substances can occur at facilities or during transport. In addition to accidental, human-caused hazardous material events, natural phenomena may cause the release of hazardous materials and complicate response activities. Earthquakes pose a particular risk because they can damage or destroy facilities containing hazardous substances. The threat of any hazardous material event may be amplified by restricted access; reduced fire suppression and spill containment capability; and even complete cutoff of response personnel and equipment. Hazardous materials events or releases can also cause a host of secondary effects, depending on the nature and size of the incident. Ammonia is used as a refrigerant at commercial fishery facilities in the city of Cordova and is listed as an EHS by the EPA. Ammonia is a toxic gas under ambient conditions.
Location	According to the Alaska Department of Environmental Conservation's Statewide Oil and Hazardous Substance Spills Database, the following locations are of concern for ammonia (EHS) spills in Cordova (Figure 8): • In the vicinity of Ocean Beauty Seafoods • In the vicinity of Trident Seafoods South and North Plants Also, according to the Alaska Department of Environmental Conservation, instances of other hazardous substance spills have been reported related to construction (e.g. Shepard Point), and other places where fuel such as diesel is used (e.g. Cordova Airport, Small Boat Harbor).
History	The Exxon-Valdez Oil Spill in 1989 was the worst human-caused disaster in Alaska's history. According to the Alaska Department of Environmental Conservation's Statewide Oil and Hazardous Substance Spills Database, between 1995 and April 2025, there have been 168 instances of non-crude oil spills including motor oils, hydraulic oil, diesel, and other types of non-crude oil. According to the Alaska Department of Environmental Conservation, the following ammonia (EHS) spills have been recorded from 1995 to 2024. • June 2008: Ammonia spill at Trident Seafoods Cordova North • October 2009: Ammonia spill at Trident Seafoods Cordova South • June 2014: Ammonia spill at Ocean Beauty Seafoods • July 2014: Ammonia spill at Trident Seafoods North • August 2015: Ammonia spill at Trident Seafoods North • February 2018: Ammonia spill at Trident Seafoods South • October 2018: Ammonia spill at Trident Seafoods South • July 2020: Ammonia spill at Trident Seafoods South • July 2021: Three ammonia spills at Trident Seafoods South • July 2023: Ammonia spill at Trident Seafoods Corporation • August 2023: Ammonia leak at Ocean Beauty Seafoods

Profile	Description
Extent / Severity	The Exxon Valdez spilled more than 11 million gallons of heavy crude oil. Response efforts did not arrive onsite until 14 hours after the spill, and it took another 21 hours to place booms around the oil. Ammonia spills from 2008 to 2023 range from less than 1 pound to 40 pounds. Spills of non-crude oil from 1995 to 2025 range from less than 1 gallon to nearly 3,000 pounds.
Recurrence Probability	In the absence of major changes to operations, the City of Cordova may continue to experience a similar number of spills annually to recent patterns e.g. 0 to 2 ammonia spills and 6 to 16 non-crude oil spills occur annually, based on records from 2008 to 2023)

4.1.8 Landslide

Table 4-9: Landslide

Profile	Description
Nature	Landslide is a general term for the dislodging and fall of a mass of soil or rocks along a sloped surface or for the dislodged mass itself. The term is used for varying phenomena, including mudflows, mudslides, debris flows, rockfalls, rockslides, debris avalanches, debris slides, and slump-earth flows. Landslides may result from a wide range of combinations of natural rock, soil, or artificial fill. The susceptibility of hilly areas to landslides depends on variations in geology, topography, vegetation, and weather. Landslides may also occur because of indiscriminate development of sloping ground or the creation of cut-and-fill slopes in areas of unstable or inadequately stabilized geologic conditions. In southcentral Alaska, landslides range from small, shallow landslides that may mobilize into rapidly moving deadly debris flows to larger, deep-seated landslides that can move entire houses and infrastructure downslope. Cliff collapses and cliff erosion are also concerns along the coast and, more recently, debris flows from burned areas after wildfires.
Location	In 2024, the USGS prepared a Slope-Relief Threshold Landslide Susceptibility Model to show landslide-prone areas by analyzing large landslide inventories and digital elevation models (DEM) to identify susceptible terrain. Specifically, the USGS used 1/3 arc-second DEM to calculate slope and 100-m relief and landslides from the national landslide inventory compilation to compute aggregated susceptibility information. The nonlinear model shows the values of susceptibility from the number of susceptible 10-m cells within each 90-m cell after down-sampling from 0 (very low) to 81 (very high). As shown in Figure 9, areas of very high susceptibility for landslide hazard occur throughout Cordova, with the exception of facilities in the vicinity of the boat harbor.
History	Figure 10 shows documented landslides in Cordova based on the 2022 USGS landslide inventory including along Point Whitshed Road, New England Cannery Road, along the shore of Eyak Lake, and near Power Creek. While numerous landslides have occurred in Cirdova, some notable landslides (causing damage or fatalities) include: • 1985: A landslide destroyed water lines between Heney Creek catchment basin and the city. • 2000: A series of landslides accompanied by severe winter storms and avalanches caused widespread damage. • 2001: A landslide in Cordova resulted in one fatality and property damage
Extent / Severity	The Slope-Relief Threshold Landslide Susceptibility Model shows that approximately 16,500 acres (39%) of Cordova are in a high and very high landslide susceptibility hazard area. Shallow landslides are generally less than 10–15 feet deep. When shallow landslides are sufficiently wet, they may move rapidly and can be highly mobile over long distances. Deep-seated landslides are hundreds to thousands of feet long or wide and only move fractions of an inch per year.
Recurrence Probability	Shallow landslides can occur at any time during the winter but are more likely to happen when the ground is nearly saturated, which typically occurs after the first few storms of the season. However, deep-seated landslides are generally triggered by deep infiltration of rainfall (which can take weeks or months to occur) and therefore tend to occur toward the end of the winter. Because shallow landslides, which are most frequent in Cordova, generally follow rain events, it is assumed that the probability of a future landslide event will be highly tied to these events. Climate modeling shows that storm events will continue to become more potent in a warming climate and lead to more extreme precipitation events. NASA researchers have found that landslides move on average faster and farther downhill during these rainy periods compared to drought years. It can be assumed that at minimum, the same areas that are vulnerable to landslides will likely remain vulnerable to landslides and potentially faster and larger deep-seated landslide events.

4.1.9 Severe Weather

Table 4-10: Severe Weather

Profile	Description
Nature	NOAA defines severe or hazardous weather as "conditions produced by thunderstorms, including damaging winds, tornadoes, large hail, flooding and flash flooding, and winter storms associated with freezing rain, sleet, snow and strong winds." Specifically, according to NOAA: • Thunderstorms become severe when they include hail one inch or greater, winds gusting in excess of 57.5 mph, and/or a tornado. • Damaging winds are classified as those exceeding 50-60 mph. • Flash floods occurs within 6 hours, and often within 3 hours, of the heavy rainfall. • Severe winter storms, also referred to as blizzards, contain large amounts of snow from snowfall or blowing snow, have winds in excess of 35 mph, and visibilities of less than ¼-mile for at least three hours. • Atmospheric rivers are long and narrow regions of intense water vapor transport
Location	Severe weather can affect all of the city of Cordova. The low lying and exposed shoreline is most vulnerable to storm surge caused by coastal storms.
History	According to NOAA's Storm Events Database, from January 1, 2000 to December 31, 2024, the following days of severe weather have been recorded in Cordova: • Winter Storm, Blizzard, High Winds: January, February, October and December 2000; January, February, August and November 2001; January 2005; February, August and September 2006; September 2009; November 2011; November 2021. • Atmospheric river event in September 2012 • Thunderstorm in June 2019
Extent / Severity	The majority of severe weather events in Cordova are winter storms, blizzards, and high wind events. These winter storm warnings are generally issued for heavy snow (1 to 2 inches per hour) and gale force winds (gust of up to 100 miles per hour).
Recurrence Probability	Based on historical occurrences, Cordova can expect to experience winter storm event days each year. However, climate models project that as temperatures increase, more rain will fall than snow and these extreme precipitation events are projected to increase in southcentral Alaska, including Cordova, by the end of the century.

4.1.10 Technological / Cyber Threat

Table 4-11: Technological/Cyber Threat

Profile	Description
Nature	FEMA defines technological hazards as those originating from technological or industrial accidents, infrastructure failures, or other human activities. Some examples include communications and/or computer database failure or power failure. Cybersecurity is the practice of protecting networks, devices, and data from unauthorized access or criminal use, ensuring confidentiality, integrity, and availability of information. This involves safeguarding critical infrastructure and key resources from cyber threats, which can include malicious attacks, human error, equipment failure, and natural hazards. Alaska's cybersecurity efforts are primarily managed by the Office of Information Technology and the Alaska Department of Commerce, Community, and Economic Development.
Location	Technological hazards may impact the entire city, such as disruptions to the internet or critical infrastructure, or could be more localized, such as public works facilities, utilities, oil and gas facilities, and transportation facilities.
History	The Alaska Division of Insurance requires entities to report cybersecurity events, but there are no public records available. According to Alaska Public Media, there have been two known incidents of cyberattacks in Alaska in the past decade: • 2018: A cyber attack of the Matanuska-Susitna Borough and Valdez brought down servers, phone systems, and computers. • 2021: Multiple incidents of cyber attacks were reported to the Alaska Court System and Department of Health and Social Services.
Extent / Severity	Models are available for estimating the effects of a technological hazard or cybersecurity threat, including the area affected and consequences to population, resources, and infrastructure. However, due to the large number of factors involved, including the various causes of failure from malicious to accidental, the extent of a future technological hazard is unknown.
Recurrence Probability	Based on the National Planning Scenariors (2006) which included cyber attack as one of 15 "credible" scenarios, it is anticipated that technology hazards and associated cyber attacks will remain a high threat in the city for the foreseeable future.

4.1.11 Tsunami

Table 4-12: Tsunami

Profile	Description
Nature	A tsunami is a series of traveling ocean waves of extremely long length, generated by disturbances associated primarily with earthquakes occurring below or near the ocean floor. Subduction zone earthquakes at plate boundaries often cause tsunamis. However, tsunamis can also be generated by underwater landslides or volcanic eruptions, the collapse of volcanic edifices, and—in very rare instances—large meteorite impacts in the ocean. In the deep ocean, a tsunami may have a length from wave crest to wave crest of 100 miles or more, but a wave height of only a few feet or less. Therefore, the wave period can be up to several hours and wavelengths can exceed several hundred miles. Tsunamis are unlike typical wind-generated swells on the ocean, which might have about 10 seconds and a wavelength of up to 300 feet. Tsunamis cannot be felt aboard ships, and they cannot be seen from the air or the open ocean. In deep water, the waves may reach speeds exceeding 700 miles per hour. Tsunamis arrive as a series of successive crests (high water levels) and troughs (low water levels). These successive crests and troughs can occur anywhere from 5 to 90 minutes apart; however, they usually occur 10 to 45 minutes apart. Tsunamis not only affect beaches that are open to the ocean, but also bay mouths, tidal flats, and the shores of large coastal rivers. Tsunami waves can also diffract around land masses. Because tsunamis are asymmetrical, the waves may be much stronger in one direction than another, depending on the nature of the source and the surrounding geography. However, tsunamis propagate outward from their source, so coasts in the shadow of affected land masses are safer. In Alaska, tsunami waves are usually generated by nearby landslides or tectonic events, but can also be generated from distant sources. Most tsunami damage and destruction are caused by flooding, wave impacts, erosion, strong currents, and floating debris.
Location	In 2015, the Alaska Division of Geological & Geophysical Surveys (DGGS) prepared a tsunami inundation map for Cordova. The tsunami inundation zone for all tectonic and landslide scenarios modeled for Cordova is shown on Figure 11 including along Orca Inlet as well as near the outlet of Eyak Lake close to the Copper River Highway.
History	The Global Historical Tsunami Database shows that from 1800-2025 there have been 85 tsunami events in Alaska. The largest tsunami event to originate in Alaska occurred on March 28, 1964. This event was caused by a M 9.2 earthquake and landslide with an unknown maximum water height. More locally, the Global Historically Tsunami Database (1800-2025) notes one event that originated in southcentral Alaska including: • February 23, 1925 event, which was caused by a M6 earthquake with a tsunami runup recorded at Valdez attributed to a quake-induced landslide.
Extent / Severity	According to DGGS (2022), modeled scenarios from tectonic and landslide tsunami areas are most concentrated around the harbor breakwaters, and more widespread inundation across the low-lying areas of the Copper River Delta. A total of 1,942 acres (5%) of Cordova is in a maximum tsunami inundation area.
Recurrence Probability	While the likelihood of a large tsunami to occur in and/or strike southcentral Alaska, including Cordova, would be hard to predict, recent geological studies led by a USGS scientist indicate that indicate that the recurrence interval for large tsunamis generated in the eastern Aleutians ranges from 164 to 257 years. The earthquakes originating in this area are generated by megathrust earthquakes and have historically had devastating consequences for coastal communities around the Pacific Ocean, including Cordova.

4.1.12 Volcano

Table 4-13: Volcano

Profile	Description
Nature	A volcano is a vent or opening in the earth's crust from which molten lava (magma), pyroclastic materials, and volcanic gases are expelled onto the surface. The vent may be visible as a small bowl-shaped depression at the summit of a cone or shield-shaped mountain. Through a series of cracks within and beneath the volcano, the vent connects to one or more linked storage areas of molten or partially molten rock. There are four general volcano types: • Lava domes, which are formed when lava erupts and accumulates near the vent. • Cinder cones, which are shaped and formed by cinders, ash, and other fragmented material accumulations that originate from an eruption. • Shield volcanoes, which are broad, gently sloping volcanic cones with a flat dome shape that usually encompass several tens or hundreds of square miles, built from overlapping and inter-fingering basaltic lava flows. • Composite or stratovolcanoes, which are typically steep-sided large dimensional symmetrical cones built from alternating lava, volcanic ash, cinder, and block layers; most composite volcanoes have a crater at the summit containing a central vent or a clustered group of vents. There are three types of volcanic eruptions, described below. Some volcanoes may exhibit only one type of eruption during an event, while others may display an entire sequence of all three types in one event. • Magmatic eruptions are the most well-observed eruptions. Magmatic eruptions produce juvenile clasts (composed fragments) during explosive decompression from gas releases. Magnetic eruption subtypes include: Hawaiian, Strombolian, Vulcanian, Peléan, and Plinian. • Phreatomagmatic eruptions are volcanic eruptions resulting from the interaction between magma and water. Grain deposits from phreatomagmatic explosion involving high water to magma ratios are extremely fine-grained and distinctly poorly sorted, while deposits resulting from low water to magma ratios are commonly coarse and relatively well-sorted. Phreatomagmatic eruption subtypes include: Surtseyan, Submarine, and Subglacial. • Phreatic eruptions are steam-blast eruptions. These eruptions occur when cold ground or surface water come into contact with hot rock or magma. Phreatic eruptions blast out steam, water, ash, volcanic bombs, and volcanic blocks, but no new magma. The term tephra defines all pieces of all fragments of rock ejected into the air by an erupting volcano. Most tephra falls back onto the slopes of the volcano, enlarging it. Smaller and lighter pieces less than 2 millimeter diameter (less than one tenth of an inch), termed ash, are carried by winds for thousands of miles. Other hazards potentially caused by a volcanic eruption include: • Volcanic ashfall • Lava flows • Lahars (debris flows) • Volcanic gas • Pyroclastic surges or flows • Volcanic landslides
Location	According to the Alaska Volcano Observatory, the closest active volcanoes to Cordova include the following: • Mount Wrangell, 116 miles north and east of Cordova • Mount Spurr, 225 miles west and north of Cordova • Mount Edgecumbe, 432 miles south and east of Cordova

Profile	Description
History	Alaska Volcano Observatory lists the most recent volcanic eruptions or activity for the three closest volcanoes to Cordova: • 1930: Mount Wrangell (eruption) • 1992: Mount Spurr (eruption) • 2022: Mount Edgecumbe (earthquake swarm)
Extent / Severity	Volcanic eruptions vary in extent and severity based on the location, duration, and strength of the volcanic activity. In 1992, the Mount Spurr eruptions released pyroclastic flow which mixed with snow and ice to become debris flows that temporarily dammed the Chakachatna River. Ash plume from this eruption fell in neighboring communities. Volcanic eruptions in Alaska have created fragmented rock flows, lava flows, landslides, and mudflows; falling ash and drifting clouds of fine volcanic ash that has caused severe damage to both the built and natural environment hundreds of miles from the eruption location; and volcanic deposits which have created new landforms. Eruptions can last weeks or longer. Cordova lies in a low-moderate volcanic ash hazard area (Figure 12).
Recurrence Probability	The probability of trace amounts of ashfall (1/32 inch) coming from a distant eruption that could impact the Cordova either directly (from damages and health issues of the ash) or indirectly (from disruptions in air travel and supply delivery) is approximately once per year (or, equal to the overall probability of a volcanic eruption occurring in Alaska).

4.1.13 Wildfire

Table 4-14: Wildfire

Profile	Description
Nature	A wildfire, forest fire, wildland fire, or a bushfire is an unplanned and uncontrolled fire in an area of flammable vegetation. type of fire often begins unnoticed, spreads quickly, and is usually signaled by dense smoke that may be visible from miles away. Wildfires can be caused by human activities (e.g., unattended burns, campfires, or off-road vehicles without spark-arresting mufflers) or by natural events such as lightning. Wildfires often occur in forests or other highly vegetated areas. In addition, wildfires can be classified as forest, urban, interface or intermix, and prescribed burns. Topography, fuel, and weather contribute significantly to wildfire behavior and can be used to identify wildfire hazard areas: • Topography describes slope increases, which influence wildfire spread rate increases. South facing slopes are subject to more solar radiation than slopes facing other directions, so south-facing slopes tend to be drier and thereby intensify wildfire behavior. However, ridge tops may mark the end of wildfire spread because fire spreads more slowly (or may even be unable to spread) downhill. • Fuel refers to the type and condition of vegetation; fuel plays a significant role in wildfire spread. Certain plant types are more susceptible to burning or will burn with greater intensity. Dense or overgrown vegetation increases the amount of combustible material available as fire fuel (referred to as the "fuel load"). The living-to-dead plant matter ratio is also important. Certain climate changes may increase wildfire risk significantly during prolonged drought periods because the moisture content of both living and dead plant matter decreases. Both the horizontal and vertical fuel load continuity are also important factors. • Weather is the most variable factor affecting wildfire behavior. Temperature, humidity, wind, and lightning can affect ignition opportunities and fire spread rate. Extreme weather (such as high temperatures, offshore "Diablo wind" events, and low humidity) can lead to extreme wildfire activity. Climate change increases the susceptibility of vegetation to ignition due to longer dry seasons. By contrast, cooling temperatures and higher humidities often signal reduced wildfire occurrence and easier containment. Wildfire frequency and severity sometimes result from other hazard impacts such as drought and infestations. If not promptly controlled, wildfires may grow into an emergency or disaster. Even small fires can threaten lives and resources and destroy improved properties. In addition to affecting people, wildfires may severely affect livestock and pets. Such events may require emergency water/food, evacuation, and shelter. Indirect wildfire effects can be catastrophic. In addition to stripping the land of vegetation and destroying forest resources, large, intense fires can harm the soil, waterways, and the land itself. Soil exposed to intense heat may lose its capability to absorb moisture and support life. Exposed soils erode quickly and exacerbate river and stream siltation, thereby increasing flood potential, harming aquatic life, and degrading water quality. Vegetation-stripped lands are also more susceptible to increased debris flow hazards.
Location	A Wildfire Exposure Assessment tool was created by the University of Alberta and in 2024 was modified by the University of Alaska for Alaska. This tool identifies the likelihood for potential wildfire activity to get to and impact a particular location. The tool calculates wildfire exposure through a flammability hazard rating and focal statistics (structure buffer) based on a scale of 0-100. Figure 13 shows the wildfire exposure area in Cordova ranging from low and very low to high and extreme near the airport.

Profile	Description
History	According to the Alaska Wildland Fire Information Map, the following fires occurred within 100 miles of Cordova: • 1948: near the Crystalline Hills, approximately 100 miles east of Cordova • 1999: near Valdez, approximately 45 miles northwest of Cordova • 2009: approximately 100 miles east of Cordova • 2016: approximately 100 miles east of Cordova • 2016: near Copper River, approximately 50 miles north of Cordova
Extent / Severity	According to the Wildfire Exposure Assessment tool, 1,584 acres (4%) of Cordova is at risk to high/extreme wildfire exposure. USFS notes that the majority of these fires in Cordova Alaska are low-intensity ground fires that while severe, are typically small.
Recurrence Probability	As noted in the USFS's 2017 Fire Regime Synthesis, "fire regimes in coastal Alaska are strongly climate-driven and are therefore potentially susceptible to climate changes" including increasing temperatures, changing moisture relationships, and changing storm patterns. The synthesis goes onto state that Canadian wildfire modeling forecasts the number of days with active fire spread to likely increase by 35% to 400% by 2050, with the largest proportional increase occurring in coastal and temperate forests, such as those that exists in Southcentral Alaska. In addition, similar modeling projects that southeast Alaska will transition from low to high probability of fire by 2040.

4.2 OVERALL SUMMARY OF VULNERABILITY

A vulnerability analysis evaluates the potential vulnerability of person or a "place" against a broad range of identified hazards, helping identify what is at risk and why. For the 2025 LHMP, a hazard overlay analysis was conducted to show people and places within a hazard area.

Hazards included in this analysis are identified in Section 4.1 and include the highest hazard areas for each of these hazards, as follows in Table 4-15.

Table 4-15: Highest Hazard Areas

Hazard	Hazard Area
Avalanche	Areas that are near potential snow release areas
Climate Change	Areas that may experience climate change
Drought	Areas that may experience drought
Earthquake	Areas that may experience severe / violent ground shaking
Erosion	Areas within 100 feet of shoreline where erosion currently occurs
Flood	Areas within the SFHA
Hazardous Materials	Areas within 200 feet of source for immediate isolation and within 0.3 miles for evacuation
Landslide	Areas with high - very high landslide susceptibility
Severe Weather	Areas that may experience severe weather
Technological / Cyber Threat	Areas that may be impacted by technological / cyber threats
Tsunami	Areas within the maximum inundation extent
Volcano	Areas that may be impacted by low to moderate volcanic ash and tephra fall
Wildfire	Areas with high to extreme wildfire exposure

People and places considered in this analysis are identified in Sections 3 and include land area, population center, and critical facilities, and summarized in Table 4-16. The overall results of this vulnerability analysis are shown in Tables 4-17 through 4-19.

Table 4-16: Total Land Area, Population Center and Critical Facilities

Category	Number
Land Area	41,833.39 acres
Population Center	1,227.50 acres
Critical Facilities	59 facilities

Table 4-17: Total Acres of Land in a Hazard Area

Hazard Area	Acres	Percent of Total Acres
Avalanche	884.87	2.12
Climate Change	41,833.39	100

Drought -Severe/Extreme	41,833.39	100
Earthquake -Severe/Violent	41,833.39	100
Erosion	81.85	0.20
Flood -SFHA	880.84	2.11
Hazardous Materials		
Immediate Isolation Distance (200 feet)	8.12	0.02
Recommended Evacuation Distance (0.3 miles)	226.11	0.54
Landslide Susceptibility - High/Very High	16,478.76	39.39
Severe Weather	41,833.39	100
Technological/Cyber Threat	41,833.39	100
Tsunami	1,942.66	4.64
Volcanic Ash and Tephra Fall- Low-Moderate/Moderate	41,833.39	100
Wildfire Exposure – High-Extreme	1,584.56	3.79

Table 4-18: Total Number of Acres of Population Center in a Hazard Area

Hazard Area	Acres	Percent of Total Acres
Avalanche	0	0
Climate Change	1,227.50	100
Drought - Severe/Extreme	1,227.50	100
Earthquake -Severe/Violent	1,227.50	100
Erosion	8.76	0.71
Flood - SFHA	183.49	14.95
Hazardous Materials		
Immediate Isolation Distance (200 ft)	8.12	0.66
Recommended Evacuation Distance (0.3 mi)	196.15	15.98
Landslide Susceptibility -High to Very High	430.20	35.05
Severe Weather	1,227.50	100
Technological/Cyber Threat	1,227.50	100
Tsunami	344.75	28.09
Volcanic Ash and Tephra Fall - Low-Moderate and Moderate	1,227.50	100
Wildfire Exposure – High to Extreme	77.00	6.27

Table 4-19: Total Number of Critical Facilities in a Hazard Area

Hazard Area	Number	Percent of Total Facilities
Avalanche	0	0

Climate Change	59	100
Drought - Severe/Extreme	59	100
Earthquake - Severe/Violent Ground Shaking	59	100
Erosion	2	3
Flood - SFHA	8	14
Hazardous Materials -Recommended Evacuation Distance	14	24
Landslide Susceptibility - High -Very High	21	36
Severe Weather	59	100
Technological/Cyber Threat	59	100
Tsunami – Maximum Inundation Extent	18	31
Volcanic Ash and Tephra Fall - Low-Moderate	59	100
Wildfire Exposure -High/Extreme Exposure	43	73

4.3 HAZARD IMPACT

A list of the key issues, or overall summary of hazard impact, for each hazard profiled in the 2025 LHMP is provided in Table 4-20.

Table 4-20: Overall Summary of Hazard Impact

Hazard	Assets	Impact Summary
Avalanche	Land Area	Avalanches are a serious threat in Cordova localized in certain areas of steep slopes outside the main population center. Avalanches can have significant impacts, including human fatalities, property damage, and disruption of transportation, utilities, and communication. Avalanches can block the Copper River Highway, the only road to the airport and landfill. In 2000, large avalanches resulted in one fatality, $1 million in damage, and declaration of a disaster emergency.
	Population Center	While the main population center is not at risk from avalanches, the impacts to the population center are associated with blocked transportation routes, including access to critical facilities, or damages to communications facilities that are in areas of steep slopes. One area of concern is Shepard Point, the future location of an oil spill response center, where there are six known avalanche chutes.
	Critical Facilities	While no critical facilities are located in snow release areas, avalanches may damage critical facilities related to communications facilities and access to critical facilities such as the Humpback Creek Power Plant, Power Creek Power Plant, airport and landfill.

Hazard	Assets	Impact Summary
Climate Change	Land Area	All of Cordova is vulnerable to the effects of climate change, including rising temperatures and extreme heat, severe moisture deficit/drought, sea level rise, coastal erosion, extreme precipitation and flooding, warmer temperatures resulting in rain-on-snow events triggering avalanches, and wildfires. Climate change impacts to the natural environment include: changes to surface water temperatures which could impact the fishing industry, shifts in species abundance and distribution impacting subsistence food gathering and potential for invasive species, early peak streamflow / early snowmelt pack that could cause severe ecological changes to the coastal temperate coastal rainforest ecosystems; flooding that could cause land loss, landscape and watercourse alteration, soil erosion and sediment deposition, saltwater intrusion, and contamination of sensitive habitats; higher temperatures that could cause habitat loss and fragmentation to species that inhabit those areas; and wildfires that could cause disturbances such as forest degradation and destruction.
	Population Center	All of Cordova population is vulnerable to the effects climate change. The population is expected to be impacted by climate change through impacts to the economy, including fishing and tourism industries, as well as through reliability of services such as water and utilities. More variability in precipitation might increase extreme precipitation resulting in stress and potentially exceeding capacity of the City's stormwater system. Drier, hotter conditions will also make wildfires more frequent and intense. Wildfires can burn the built environment; interrupt transportation and utilities; reduce air quality; and cause death to people and animals. The population center along the coast will likely be impacted by increased and more intense coastal storm flooding and sea level rise. Flooding may result in property damage and property loss; reduced property values; reduced recreational areas and open space; loss of access/disrupted transportation; displacement; secondary hazards such as landslides, mudslides, and chemical spills; and water-related health impacts. Effects from climate change can even result in trauma, injuries, or even death.
	Critical Facilities	All of Cordova's critical facilities are vulnerable to the effects of climate change. Of particular concern to the city of Cordova's critical facilities is the impact of climate change influenced temperature increases and melting glacier water from the Sheridan Glacier, which would exacerbate Sheridan River flooding and erosion, potentially restricting the city's access to the landfill.
Drought	Land Area	All of Cordova is vulnerable to drought, despite its location in a region known for wet and rainy conditions. Droughts can have significant impacts including water supply for drinking water and for fishing industry, forest health impacts and associated wildfire risk and reduction in subsistence food items, reduction in tourism and recreation, and fish kills from low flow and high temperatures. According to the U.S. Drought Monitor, in 2019 the drought impacted salmon abundance and mushroom collecting near Cordova, including cancellation of some events of the 2019 Fungus Festival. Drought conditions may coincide with warmer temperatures, creating conditions of both lower humidity and high temperatures which increase the risk of wildfires. Long-term drought impacts forest and ecosystem health and may make them more vulnerable to invasive plant species and forest pest species.

Hazard	Assets	Impact Summary
	Population Center	Of particular concern to the population center are the impacts of drought to the water supply related to both drinking water and water used for seafood processing. Drought also impacts hydroelectric power generation due to lower lake levels. The population center may experience outages or water use restrictions, as well as increased air quality concerns from use of generators as back-up power sources.
	Critical Facilities	All current and future critical facilities and infrastructure are vulnerable to drought. During periods of drought, the City may have to prioritize water usage for critical facilities over commerce and parks and recreation. Also, critical facilities linked to the water systems and hydroelectric power generation may not be operational during periods of low water levels.
Earthquake	Land Area	All of Cordova is vulnerable to violent to extreme ground shaking. Earthquakes may cause ground movement and ground displacement, changes to water courses, and additional impacts from secondary hazards including ground rupture, landslides, tsunamis, liquefaction, fire, and chemical spills.
	Population Center	All of Cordova's population center is vulnerable to severe ground shaking, particularly older buildings and of lower physical quality as well as well-built ordinary buildings. In addition to property damage and property loss reduced property values, loss of access/disrupted transportation, and displacement from severe ground shaking, the population center may also be impacted by secondary hazards such as landslides, chemical spills, and fires. Violent to extreme ground shaking can even result in trauma, injuries, or even death.
	Critical Facilities	All of Cordova's critical facilities are vulnerable to violent to extreme perceived shaking. Violent to extreme shaking may cause considerable damage to specially designed critical facilities and well-built ordinary buildings. In addition, these stronger earthquakes could trigger landslides, chemical spills, and fires that may cause damage or loss of access to critical facilities.
Erosion	Land Area	Riverine erosion along the Eyak River and coastal erosion along the shoreline are both concerns for the city of Cordova. Impacts from the 2006 storm events in Cordova represent the potential impacts of a major storm event with erosion damage. According to the U.S. Army Corps of Engineers, estimated damage from the 2006 events totaled $100,000 for water lines, $100,000 for city roads, and $10 million for hydroelectric facilities. Another concern is the risk associated with eroded salmon habitat, though the potential impact has not been quantified.
	Population Center	Erosion may impact the fishing and tourism industries with damages to the boat harbor and other coastal facilities.
	Critical Facilities	Critical facilities in Cordova vulnerable to erosion include the Meals Water Treatment Plant and the Science Center Lift Station. Coastal erosion may also impact the harbor and other critical facilities located along the shoreline. Both coastal and riverine erosion can undermine roads and restrict access to critical facilities.

Hazard	Assets	Impact Summary
Flood	Land Area	The FIRM for the Cordova identifies 880 acres (2 %) within the SFHA. This hazard area is vulnerable to flooding causing by flooding caused by intense or prolonged rainfall, storm surge, localized wave action, and/or high tide. Flooding may cause land loss, landscape and watercourse alteration, soil erosion and sediment deposition, saltwater intrusion, contamination of sensitive habitats, and lead to closure of public lands. In addition, floods can cause secondary hazards including landslides and mudslides.
	Population Center	The FIRM for Cordova identifies 183 acres (15%) of the population center within the SFHA. Flood impacts to the population center may include utility disruption, property damage and property loss, reduced property values, reduced recreational areas and open space, loss of access/disrupted transportation, and displacement. Floods can result in trauma, injuries, or even death.
	Critical Facilities	Critical facilities located in the SFHA include the Coast Guard Boat Station, Eyak Lake weir, Ferry Terminal, the harbor, the City T Dock, Ocean Dock, and two lift stations (Eyak and Murcheson). Floods may cause loss of utilities, overwhelm wastewater systems and stormwater systems, damage water equipment and structures, cause significant erosion and wash out roads and culverts, and lead to secondary hazards including landslides and mudslides. In addition, damage or limited access from floods to and from these facilities and infrastructure as well as throughout the City may impede public services and public safety
Hazardous Materials	Land Area	Exposure to hazardous materials may cause injury, illness, or death. Effects may be felt over seconds, minutes, or hours (short term); or not emerge until days, weeks, or even years after exposure (long term). In addition, some substances are harmful after single exposures of short duration, while others require long episodes of exposure or repeated exposure over time to create harm. Hazardous materials release of ammonia is a higher risk in localized areas around seafood processing centers and including people who work at those locations. Oil spills are also a concern around the shoreline and in the Prince William Sound.
	Population Center	The fishing and tourism industries would be impacted by oil spills in Prince William Sound through disruption of operations, evacuations, and possible injury or illness.
	Critical Facilities	Evacuation orders resulting from a major spill of ammonia may impact critical facilities located within 0.3 mile radius including the Cordova Center, Coast Guard Boat Station, School District Office, Illanka Community Health Center, Mt. Eccles Elementary School, Cordova Jr / Sr High School. Cordova Telephone Coop Main Building, Harbor, Innovative Learning Program, Maintenance Shop, Public Safety Building (Fire / EMS / Police / AST), SERVS Response Equipment (Mini Barges), SERVS Response Equipment (Other Equipment) and City T Dock.
Landslide	Land Area	Nearly half (40%) of Cordova is in a high-very high landslide susceptibility area. Landslides can cause land loss, landscape and watercourse alteration, soil erosion and sediment deposition, and contamination of land use designations. These impacts can result in short-term and long-term closure of public lands.

Hazard	Assets	Impact Summary
	Population Center	Over a third (35%) of Cordova's population center is in a high-very high landslide susceptibility area. Landslides may cause loss of access to the critical facilities, loss of critical facilities or compromised critical facility performance, structural damage, economic loss, and secondary hazards including landslides and mudslides. In addition, damage or limited access to and from these facilities as well as throughout Cordova may impede public services and public safety.
	Critical Facilities	There are 21 critical facilities in high or very high landslide susceptibility areas including the 1.5 MG Tank and Booster Pump Station, Alphine Booster Pump Station, Cordova Center, CTC Subsea Cable Landing (future), Eyak Filter Settling pond, Murcheson Lift Station, Power Creek Power Plant, Ski Hill Booster Pump Station, WWTP Dewatering and Auxiliary Treatment building, WWTP Shop Building, CTC Heney Ridge Microwave Site. Heney Creek Catchment, Meals CT Water Tank, Meals Water Treatment Plant, Morpac Lift Station, Morpac Tank, Murcheson Catchment, Murcheson CT Water Tank, Orca Catchment, Orca Water Treatment Plant, and Tripod Hill Cell Towers. Landslide impacts to critical facilities may include critical facility disruption, critical facility damage and loss, and loss of access/disrupted transportation. In addition, damage or limited access from landslides to and from these critical facilities as well as throughout Cordova may impede public services and public safety.
Severe Weather	Land Area	The majority of severe weather events in Cordova are winter storms, blizzards, and high wind events, and all of Cordova is vulnerable to this hazard. Winter storm impacts on the natural environment may include damage to trees and vegetation from heavy accumulation of snow and/or ice and flooding due to heavy rainfall, rapid snowmelt, and log jams.
	Population Center	All of Cordova's population center is vulnerable to severe weather and particularly so to winter storms. Winter storm impacts on the built environment may include utility disruption, property damage and property loss (specifically roof damage due to heavy accumulation of snow and/or downed trees), loss of access/disrupted transportation, and displacement. People in winter storms may be more vulnerable to vehicular accidents, hypothermia, frostbite, carbon monoxide poisoning, and heart attacks from overexertion.
	Critical Facilities	All of Cordova's critical facilities are vulnerable to severe weather. As noted above, the greatest severe weather event in Cordova are winter storms, blizzards, and high wind events. Winter storm impacts to critical facilities may include critical facility disruption, critical facility damage and loss (specifically roof damage due to heavy accumulation of snow and/or downed trees), and loss of access/disrupted transportation. In addition, damage or limited access from winter storms and other severe weather to and from these critical facilities as well as throughout Cordova may impede public services and public safety.
Technological	Land Area	All of the city of Cordova is vulnerable to technological hazards.
	Population Center	Technological disruptions can impact the population center by reducing or limiting communications, causing public health and safety issues for failures of traffic signals, and disrupting electricity generation and distribution. These in turn can impact schools, hospitals, City operations, transportation facilities such as airports, and major economic centers such as seafood processing plants.

Hazard	Assets	Impact Summary
	Critical Facilities	All critical facilities are vulnerable to technological hazards. The population center may be impacted by disruptions of communications and operations of critical facilities, impacting schools, hospitals, and transportation facilities.
Tsunami	Land Area	Approximately 5% of Cordova is in a maximum tsunami inundation extent. Tsunami inundation may cause land loss, landscape and watercourse alteration, soil erosion and sediment deposition, saltwater intrusion, and contamination of land use designations. These impacts can result in short-term and long-term closure of public lands too.
	Population Center	In Cordova, less than a third of the population center is in a maximum tsunami inundation extent. Tsunami impacts may include utility disruption, property damage and property loss, reduced property values, reduced recreational areas and open space, loss of access/disrupted transportation, and displacement. Tsunamis can also cause water-related health issues and result in trauma, injuries, or even death.
	Critical Facilities	There are 18 critical facilities in Cordova that are in the maximum tsunami inundation extent including the Cordova Center, CTC Subsea Cable Landing (future), WWTP Dewatering and Auxiliary Treatment building, WWTP Shop Building, Public Works Streets Shop / Equipment Yard, Wastewater Treatment Plant, WWTP Office Building, Whiskey Ridge Lift Station, Morpac Lift Station, Ferry Dock Lift Station, Odiak Slough Lift Station, Orca Power Generation Plant, Public Safety Building (Fire / EMS / Police / AST), Science Center Lift Station, SERVS Response Equipment (Mini Barges), SERVS Response Equipment (Other Equipment), City T Dock, and Ocean Dock. Tsunamis may cause loss of access to the critical facilities, loss of critical facilities or compromised critical facility performance, structural damage, and economic loss. In addition, damage or limited access to and from these facilities and infrastructure as well as throughout the Cordova may impede public services and public safety. Additionally, and of particular concern is the Shoreside Petroleum tank farm (privately owned) located within the tsunami inundation area which could be damaged from flooding, with associated secondary hazard of chemical spill and contamination possible.
Volcano	Land Area	While volcanoes that are being tracked by scientists as active are generally located a considerable distance away (over 100 miles), impacts to the city of Cordova could still be significant due to even low-moderate/moderate ashfall from a distant volcanic event. Ashfall can cause respiratory problems, eye problems, and skin irritation. The area may experience transportation interruptions, impacts to commercial fishing and tourism, mass casualties of fish and sea birds, water supply contamination, and photovoltaic energy production disruptions.
	Population Center	In the population center, ashfall can cause respiratory problems, eye problems, and skin irritation. The population center could experience transportation interruptions, impacts to commercial fishing and tourism, mass casualties of fish and sea birds, water supply contamination, and photovoltaic energy production disruptions.

Hazard	Assets	Impact Summary
	Critical Facilities	Critical facilities of particular concern include those associated with Cordova's road, air, and maritime travel. Previous eruptions of volcanoes in Alaska, such as the 1992 eruption of Mount Spurr, resulted in flight cancellations. Ash can severely damage a vehicle's engine and exterior and can create hazardous conditions on roads. Another major concern is the impact of ash on the critical facilities associated with the city's water supply and water treatment operations with increased contamination and stress on treatment systems.
Wildfire	Land Area	In Cordova, 4% of the total land area is located within an area of high or extreme wildfire exposure. Without mitigation or preparation efforts, the impacts of a wildland fire in Cordova could grow into an emergency or disaster in certain conditions. Wildfire can cause subsistence food losses, alter habitat, transform landscapes, compromise water quality, introduce invasive species, and damage ecosystems. Secondary hazards can include erosion, flooding, and landslides. All of these impacts can result in short-term and long-term closure of public lands.
	Population Center	Though only a small portion of the area of the population center (6%) is in an area of high or extreme wildfire exposure. Wildfire impacts may include utility disruption, property damage and property loss, reduced property values, reduced recreational areas and open space, loss of access/disrupted transportation, displacement, and secondary hazards including landslides and mudslides. Wildfires can cause smoke-related health issues and result in trauma, injuries, or even death.
	Critical Facilities	Though the proportion of the land area in high or extreme wildfire exposure areas are relatively low (4%), there are many critical facilities in those high and extreme exposure areas (75% of critical facilities). Wildfires may cause loss of access, loss of utilities or compromised utility performance, structural damage, economic loss, and secondary hazards including landslides and mudslides. In addition, damage or limited access from wildfires to and from these facilities and infrastructure as well as throughout the city may impede public services and public safety. Wildfire ash and contaminants can threaten drinking water.

4.4 NATIONAL FLOOD INSURANCE PROGRAM INSURED STRUCTURES

The NFIP aims to reduce the impact of flooding on residential and nonresidential buildings by providing insurance to property owners and encouraging communities to adopt and enforce floodplain management regulations. Participation in the NFIP is based on an agreement between local communities and the Federal Government. According to FEMA Region X, there are seven NFIP-insured structures in Cordova. Of these, none are considered Repetitive Loss properties.

5.0 MITIGATION STRATEGY

This section addresses Element C of the Local Mitigation Plan Regulation Checklist.

Element C: Mitigation Strategy	
C1.	Does the plan document each participant's existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement 44 CFR § 201.6(c)(3))
C1-a.	Does the plan describe how the existing capabilities of each participant are available to support the mitigation strategy? Does this include a discussion of the existing building codes and land use and development ordinances or regulations?
C1-b.	Does the plan describe each participant's ability to expand and improve the identified capabilities to achieve mitigation?
C2.	Does the plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement 44 CFR § 201.6(c)(3)(ii))
C2-a.	Does the plan contain a narrative description or a table/list of their participation activities?
C3.	Does the plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement 44 CFR § 201.6(c)(3)(i))
C3.-a.	Does the plan include goals to reduce the risk from the hazards identified in the plan?
C4.	Does the plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? (Requirement 44 CFR § 201.6(c)(3)(ii))
C4-a.	Does the plan include an analysis of a comprehensive range of actions/projects that each jurisdiction considered to reduce the impacts of hazards identified in the risk assessment?
C4-b.	Does the plan include one or more action(s) per jurisdiction for each of the hazards as identified within the plan's risk assessment?
C5.	Does the plan contain an action plan that describes how the actions identified will be prioritized (including a cost-benefit review), implemented, and administered by each jurisdiction? (Requirement 44 CFR § 201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))
C5-a.	Does the plan describe the criteria used for prioritizing actions?
C5-b.	Does the plan provide the position, office, department or agency responsible for implementing/administrating the identified mitigation actions, as well as potential funding sources and expected time frame?

5.1 AUTHORITIES, POLICIES, PROGRAMS, AND RESOURCES

Cordova's existing authorities, policies, programs, and resources available for hazard mitigation are provided in Table 5-1 (human and technical resources), Table 5-2 (financial resources), and Table 5-3 (planning and policy resources). The ways in which the City of Cordova is looking to expand and improve on its hazard mitigation authorities, policies, programs, and resources are provided in Table 5-4.

Table 5-1: Human and Technical Resources for Hazard Mitigation

Government or Department	Principal Activities Related to Hazard Mitigation
Public Works	The City of Cordova Public Works Department oversees maintenance operations and responds to emergencies and disasters that have the potential for adverse impacts to public health or the environment.
Planning	The City of Cordova's Planning and Zoning Commission provides guidance for land use development, long range planning, housing, and environmental policies. The commission is also responsible for processing permit and entitlement applications to ensure conformance with applicable code and regulations and often oversees the implementation of historic preservation programs. Enforces its floodplain requirements through the floodplain management program.
City Manager	The City Manager Department is responsible for overseeing municipal departments, financial management resources, business license administration, payroll and personnel administration, risk management, records management, and overall coordination of municipal activities. The Public Information Office and Grant Writer is responsible to press releases, media inquiries, and public information dissemination for the City.
Volunteer Fire	The Cordova Volunteer Fire Department provides local response and relief activities and works closely with local, state, and federal partners to support planning and training and to provide information and coordinate assistance.
Harbor	The Cordova Harbor Department is responsible for setting policies and procedures that impact the City's small boat harbor, launch ramp, commercial loading facilities, fee schedule, and all tidelands and waterfront properties under lease. The harbormaster, who leads the department, oversees the day-to-day operations and enforcement of harbor rules and regulations.

Table 5-2: Financial Resources for Hazard Mitigation

Government Department / Agency	Resource Type	Principal Activities Related to Hazard Mitigation
City of Cordova	General Fund	The General Fund is the City's primary fund for resource inflows and outflows that are not associated with special purpose funds.
City of Cordova	Enterprise Fund	The Enterprise Fund manages services that are funded through user fees such as water and sewer, harbor operations, refuse, and camper parks.

Government Department / Agency	Resource Type	Principal Activities Related to Hazard Mitigation
Alaska Energy Authority	Renewable Energy Fund	The Renewable Energy Fund provides funding for the development of qualifying and competitively selected renewable energy projects in Alaska. The program is designed to produce cost-effective renewable energy for both heat and power. For Fiscal Year 2026, the Alaska Energy Authority has awarded 6 projects for over $6 million in total funding.
Alaska DOT&PF	Capital Budget	Alaska DOT&PF includes a Capital Budget for projects related to surface transportation, airport improvement program, marine highway annual overhauls, rural ferry grants, as well as state funded match for federal programs. In Cordova the DOT&PF was awarded funds from the U.S. Department of Transportation's Maritime Administration through the Port Infrastructure Development Program for upgrades to the ferry terminal.
FEMA	Emergency Management Performance Grant	The Emergency Management Performance Grant provides financial assistance for local, tribal, and state entities to develop and strengthen their emergency management capabilities and all-hazards preparedness activities. In 2024, national priorities for Emergency Management Performance Grant included equity, climate resilience, and readiness.
FEMA	Hazard Mitigation Assistance (HMA) Grants	The HMA grant program provides technical and financial assistance to help mitigate hazards through the following grants: Building Resilient Infrastructure and Communities (BRIC): BRIC is an annual competitive pass-through grant program that focuses on reducing the nation's risk by funding public infrastructure projects that increase a community's resilience before a disaster affects an area. BRIC was created in 2020 as part of the Disaster Recovery Reform Act of 2018 and replaces FEMA's legacy Pre-Disaster Mitigation grant program. BRIC funds a wide variety of mitigation activities, including microgrids, flood control, wetland restoration, community relocation/buyouts, seismic retrofits, and nature-based solutions. BRIC Direct Technical Assistance is a non-financial-assistance grant program for LHMP development initial support, identifying solutions for specific hazards, assisting with hazard mitigation project planning, requesting application development support, demonstrating cost-effectiveness of a BRIC sub-application submission, and understanding hazard mitigation grant management. Hazard Mitigation Grant Program (HMGP): HMGP is a pass-through grant program that supports pre- and post-disaster mitigation plans and projects for state and local agencies and federally recognized tribal governments. HMGP funding is authorized with a Presidential Major Disaster Declaration. A governor or tribal chief executive may request HMGP funding when submitting a disaster declaration. The amount of funding made available to the applicant is generally 15% of the total federal assistance amount provided for recovery from the Presidential Major Disaster Declaration. HMGP Post Fire: HMGP Post Fire is a pass-through grant program that provides funding for state and local agencies and federally recognized tribal governments to reduce wildfire risks. Funded projects include (but are not limited to) defensible space initiatives, ignition-resistant construction, hazardous fuels reduction, erosion control measures, slope failure prevention measures, and flash flooding prevention. HMGP Post Fire grants are available to eligible states and territories that receive Fire Management Assistance declarations and to federally recognized tribal governments that

Government Department / Agency	Resource Type	Principal Activities Related to Hazard Mitigation
		have land burned within a designated area. A Post Fire Presidential Disaster Declaration is not required to activate funding. Funding amounts are determined by FEMA and are based on a national aggregate calculation of historical Fire Management Assistance Grant declarations over the past 10 years.
NOAA	Climate Resilience Regional Challenge	NOAA's Climate Resilience Regional Challenge is a competitive grant program focused on collaborative projects that "increase the resilience of coastal communities to extreme weather and other climate change impacts, including sea level rise and drought." Projects must consider risk reduction, regional collaboration, equity and inclusion, and enduring capacity.
NOAA	National Coastal Resilience Fund (NCRF)	The NCRF is a direct annual competitive grant program that supports the implementation of nature-based solutions to enhance the resilience of coastal communities and ecosystems by reducing the "threats from coastal hazards (such as rising sea- and lake-levels, more intense storms, increasing flooding and erosion, and melting permafrost) to property and key assets, such as hospitals and evacuation routes." The NCRF funds nature-based solutions including restoring coastal marshes, reconnecting floodplains, rebuilding dunes or other natural buffers, and installing living shorelines. NCRF grants are available to state and local agencies and federally recognized Tribal governments within the coastal areas of the U.S.
U.S. Department of Housing and Urban Development	Community Development Block Grant	Although limited, Community Development Block Grant funds may be used to advance certain adaptation projects or programs, particularly those within a neighborhood revitalization strategy area or serving disadvantaged residents. Following a federal disaster declaration, additional Community Development Block Grant funds generally become available for a wider variety of recovery projects.
U.S. Economic Development Administration	Economic Adjustment, Disaster Recovery, and Public Works Programs	The U.S. Economic Development Administration provides funding through three primary funding programs. These are focused on overcoming economic changes, disaster recovery, and public works that advance economic development goals in the region's adopted comprehensive economic development strategy.
EPA	Water Infrastructure Finance and Innovation Act of 2014 (WIFIA) Loans	WIFIA established a federal credit program administered by the EPA for eligible water and wastewater infrastructure projects. Eligible projects include aquifer recharge; alternative water supply; and drought prevention, reduction, or mitigation, among others. Eligible borrowers include local, state, and tribal government entities; projects must be creditworthy and have a dedicated source of revenue; and the maximum portion of project costs that WIFIA can fund is 49%.
U.S. Fish and Wildlife Service	National Coastal Wetlands	The National Coastal Wetlands Conservation Grants Program is an annual grant program that provides up to $1 million per project in coastal and Great Lakes states, as well as U.S. territories to "protect, restore and enhance

Government Department / Agency	Resource Type	Principal Activities Related to Hazard Mitigation
	Conservation Grants Program	coastal wetland ecosystems and associated uplands." Eligible projects include the acquisition of real property interest in coastal lands or waters and the restoration, enhancement, or management of coastal wetlands ecosystems.

Table 5-3: Planning, Policy, Program, and Public Outreach for Hazard Mitigation

Type	Name	Principal Activities Related to Hazard Mitigation
Planning	City of Cordova Comprehensive Plan Update (2019)	This plan describes Cordova's hazards and lists goals and policies to reduce the potential risk of death, injuries, and economic damage resulting from natural and human-caused hazards
	City of Cordova Emergency Operations Plan (2025)	This plan describes the organizational structures, roles, and responsibilities; protocols for providing emergency response and short-term recovery; the purpose, situation, and assumptions; concept of operations, organization, assignment of responsibilities, and plan development and maintenance; authorities; and references.
	Cordova Priority Climate Action Plan (2024)	This plan focuses on reducing greenhouse gas emissions in the electricity generation, solid waste, and blue economy sectors by leveraging this planning phase to develop impactful community projects.
	Cordova Airport Emergency Plan (2011)	This plan is intended to assist DOR&PF and mutual aid personnel in coordinating an effective response to an airport emergency.
Policy	City of Cordova Municipal Code	The municipal code establishes laws and rules that control land development; land use; and building type, size, material, and location within a designated area. • Title 18 Zoning: Identifies permitted uses in certain zoning districts. • Title 18.35 Avalanche District: Zoning overlay to identify areas where avalanche potential is found to exist and to minimize health and safety hazards. • Chapter 16 Building Code: Regulates building standards to withstand hazard impacts. • Title 19 Environment: Promotes the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed. Title 19.04 Floodplain Management: The City participates in the NFIP, which requires the City to enforce floodplain management regulations

Type	Name	Principal Activities Related to Hazard Mitigation
Program	Capital Improvement Program	This program identifies, prioritizes, budgets, and coordinates major projects for a community over a specific timeframe.
	TsunamiReady Program	This program implements mitigation, preparedness, and response activities as outlined in the TsunamiReady guidelines to improve public safety before, during, and after tsunami emergencies.
	National Flood Insurance Program	The NFIP aims to reduce the impact of flooding on residential and non-residential buildings by providing insurance to property owners and encouraging communities to adopt and enforce floodplain management regulations. Participation in the NFIP is based on an agreement between local communities and the federal government.
Public Outreach	Public Communications	The City of Cordova uses an email list serve, the City website, and a Facebook page to provide outreach to the community on relevant events, activities, and planning processes happening in the city.

Table 5-4: Ability to Expand Hazard Mitigation Resources

Name	Resource Type	Principal Activities Related to Hazard Mitigation
Mitigation Specialist	Human and Technical Resources	Appoint or assign someone with the City to oversee hazard mitigation grant opportunities, including notifying departments/agencies of upcoming grant cycles and spearheading Notice of Intent applications, grant applications, and grant management requirements.
HMA funding	Financial Resources	Apply for BRIC and HMGP funding as it becomes available. The focus should be on projects that mitigate critical infrastructure, provide protection for disadvantaged areas, and address climate change.
Climate Adaptation Plan	Planning, Policy, Program, and Public Outreach	Develop a Climate Adaptation Plan to adapt to the impacts of climate change through a series of local transportation, land use, building energy, water, waste, and green infrastructure programs and policies.

5.2 NATIONAL FLOOD INSURANCE PROGRAM PARTICIPATION

The NFIP aims to reduce the impact of flooding on residential and nonresidential buildings by providing insurance to property owners and encouraging communities to adopt and enforce floodplain management regulations. Participation in the NFIP is based on an agreement between local communities and the federal government.

As noted previously, the City of Cordova joined the NFIP in August 1979. As a participant of the NFIP, the City enforces a floodplain management ordinance and participates in FEMA's Community Assisted Visits, which occur on a 3- to 5-year cycle. The City updated their floodplain regulations in 2015and in 2023 to be in compliance with the NFIP and maintains regulations in Municipal Code 19.04 Floodplain Management.

5.3 MITIGATION GOALS

Mitigation goals are defined as general guidelines that explain what an agency wants to achieve in terms of hazard mitigation and loss prevention. Goal statements are typically long-range, policy-oriented statements representing a community-wide vision. FEMA's 2022 BRIC priorities are the basis for the goals for the 2025 LHMP.

1. Safety. Create a healthy and safe community.
2. Adaptation. Reduce the vulnerability of structures, critical infrastructure, and other values at risk to minimize losses and damage from hazard events and disasters.
3. Resilience. Increase the resilience of the environment to environmental shifts anticipated from climate change through innovative and long-term actions.
4. Collaboration. Provide an effective framework for partners and agencies to collaborate, leverage expertise, and prioritize projects on a regularly established schedule.
5. Action. Implement and track the 2025 LHMP to leverage successes for funding opportunities and resources.

5.4 DRAFT MITIGATION ACTIONS

Mitigation actions—also known as mitigation projects—are strategies that help achieve the goals of an LHMP. Mitigation actions can include structure and infrastructure projects, nature-based solutions, and

community resiliency projects and programs. Table 5-5 lists the potential mitigation actions developed for the 2025 LHMP, which were developed using FEMA success stories and best management practices; FEMA job aids; local and regional plans and reports; and input from planning team members.

As shown in Table 5-5, at least one mitigation action has been developed to address each hazard profiled in this plan. The actions are not listed in any order. Detailed information about each action, including an overview of the project, the hazards and goals it addresses, the type of asset it protects, the associated benefits and costs, and project source(s) are provided in Table C-2.

Table 5-5: Summary of Draft Mitigation Actions

No.	Project Name	Hazard(s) Mitigated
1	Cordova Center Backup Generator	All
2	Update City Emergency Plans	All
3	Cordova's Mapping System Updates	All
4	Public Awareness	All
5	Complete Communications Trailor	All
6	Community Resiliency Hubs	All
7	Heavy Equipment for Snow/Debris Removal	Avalanche, Earthquake, Flood, Landslide, Severe Weather, Tsunami
8	Avalanche Mapping	Avalanche
9	Avalanche Events Record-Keeping	Avalanche
10	Sheridan Glacier and Sheridan River Studies	Climate Change. Erosion, Flood
11	Repair, Replace, and Maintain Storm Drain Systems	Climate Change, Erosion, Flood, Severe Weather
12	Cordova Water and Sewer Master Plan Update	Drought, Flood
13	Water System Vulnerabilities	Drought
14	Building Inspectors	Earthquake
15	Engineering Assessment of Earthquake Vulnerability	Earthquake
16	Assess and Retrofit Buildings	Earthquake
17	Encourage Community Partners in Preparation Activities	Earthquake, Tsunami
18	Stabilize Break Water Avenue	Erosion, Severe Weather, Tsunami
19	Power Creek Road Slope Stabilization and Repairs	Erosion, Landslide
20	Setbacks for New Structures	Erosion, Flood
21	Six-Mile Subdivision Drainage System	Flood

No.	Project Name	Hazard(s) Mitigated
22	Continue to Comply with NFIP and Facilitate FIRM Updates	Flood
23	Hospital Flood Proofing	Flood
24	Complete Watershed Mapping	Flood
25	Structure Elevation and/or Relocation	Flood
26	Update and Replace Existing Streamflow and Rainfall Gauges	Flood
27	Funding for Riverbank Protection	Flood
28	Conditional Ownership and Management of Eyak Lake Weir	Flood
29	Meals Lake Dam Repairs	Flood, Drought
30	Identify and Organize Local Resources	Hazardous Materials, Technilogical / Cyber Threat
31	Hazardous Material Trainings	Hazardous Materials
32	Hazardous Material Drills and Exercises	Hazardous Materials
33	Continue to Participate in StormReady	Severe Weather
34	Continue to Participate in TsunamiReady	Tsunami
35	Update and Expand Communications	Tsunami
36	Fire and Emergency Service Vehicles, Training, and Equipment	Wildfire
37	Water Usage and Filtration Limits	Volcano
38	Ash Masks	Volcano

5.5 FINAL ACTION PLAN

A final action plan is an itemized list of draft mitigation actions that a community/agency hopes to put into practice to reduce its risks and vulnerabilities. Cost estimates were based on past experience and best judgment, including benefits of losses avoided and qualitative benefits such as quality of life and natural and beneficial functions of ecosystems.

For the 2025 LHMP, the planning team created a two-tier prioritization process based on the following:

- High priority mitigation actions are those that address multiple hazards or single hazards of immediate concern and are also cost-effective (positive cost-benefit ratio) and have an identified funding source.
- Medium mitigation actions are those that address single hazards that are not of immediate concern and/or those that are of immediate concern but are not cost effective or do not have an identified funding source.

The City of Cordova determined hazards of immediate concern include avalanche, climate change, drought, earthquake, erosion, flood, landslide, and severe weather.

The results of the above prioritization process are provided in Table 5-6. For each mitigation action listed, potential funding sources, responsible departments or agencies, and implementation timelines have been identified.

Table 5-6: Final Action Plan

No.	Project Name	Hazard	Priority	Potential Funding Source	Responsibility	Timing
1	Cordova Center Backup Generator	All	High	State/Federal Grants	Public Works	>1 year
2	Update City Emergency Plans	All	High	City General Fund	City Manager / City Planning	>1 year
3	Cordova's Mapping System Updates	All	High	City General Fund	Public Works / City Planning	Ongoing
4	Public Awareness	All	High	City General Fund	City Manager / Public Communications / Grants	Ongoing
5	Complete Communications Trailor	All	High	City General Fund	Public Works / Fire	Ongoing
6	Community Resiliency Hubs	All	Medium	City General Fund	City Manager	>5 years
7	Heavy Equipment for Snow/Debris Removal	Avalanche, Earthquake, Flood Landslide, Severe Weather, Tsunami	High	City General Fund	Public Works	>1 year
8	Avalanche Mapping	Avalanche	Medium	State/Local Funding, Membership	Cordova Avalanche Center	Ongoing
9	Avalanche Events Record-Keeping	Avalanche	Medium	State/Local Funding, Membership	Cordova Avalanche Center	Ongoing
10	Sheridan Glacier and Sheridan River Studies	Climate Change	Medium	State/Federal Grants	Public Works	>5 years
11	Repair, Replace, and Maintain Storm Drain Systems	Climate Change, Erosion, Flood Severe Weather	High	City General Fund	Public Works	>1 year

No.	Project Name	Hazard	Priority	Potential Funding Source	Responsibility	Timing
12	Cordova Water and Sewer Master Plan Update	Drought, Flood	High	City Enterprise Fund	Public Works	>1 year
13	Water System Vulnerabilities	Drought	High	City Enterprise Fund	Public Works	>5 years
14	Building Inspectors	Earthquake	High	City General Fund	Public Works	>1 year
15	Engineering Assessment of Earthquake Vulnerability	Earthquake	Medium	State/Federal Grants	Public Works	>5 years
16	Assess and Retrofit Buildings	Earthquake	Medium	State/Federal Grants	Public Works	>5 years
17	Encourage Community Partners in Preparation Activities	Earthquake, Tsunami	High	City General Fund	Emergency Manager, Public Works	Ongoing
18	Stabilize Break Water Avenue	Erosion	High	City Enterprise Fund	Public Works	>1 year
19	Power Creek Road Slope Stabilization and Repairs	Erosion, Landslide	High	State/Federal Grants	AK DOT&PF	>1 year
20	Setbacks for New Structures	Erosion, Flood	High	City General Fund	City Planning	>1 year
21	Six-Mile Subdivision Drainage System	Flood	High	City General Fund	City Planning	>1 year
22	Continue to Comply with NFIP and Facilitate FIRM Updates	Flood	Medium	City General Fund	Public Works	Ongoing
23	Hospital Flood Proofing	Flood	High	State/Federal Grants	Public Works	>1 year
24	Complete Watershed Mapping	Flood	Medium	State/Federal Grants	Public Works	>5 years
25	Structure Elevation and/or Relocation	Flood, Tsunami	Medium	State/Federal Grants	City Planning	>1 year
26	Update and Replace Existing Streamflow and Rainfall Gauges	Flood	Medium	City Enterprise Funds	Public Works	Ongoing

No.	Project Name	Hazard	Priority	Potential Funding Source	Responsibility	Timing
27	Funding for Riverbank Protection	Flood	Medium	City General Fund	City Manager / Public Communications / Grants	>1 year
28	Conditional Ownership and Management of Eyak Lake Weir	Flood	Medium	City Enterprise Funds	Public Works	>5 years
29	Meals Lake Dam Repair	Flood, Drought	High	City Enterprise Funds	Public Works	>5 years
30	Identify and Organize Local Resources	Hazardous Materials, Technilogical / Cyber Threat	Medium	City General Fund	Emergency Manager	Ongoing
31	Hazardous Material Trainings	Hazardous Materials	Medium	City General Fund	Emergency Manager	Ongoing
32	Hazardous Material Drills and Exercises	Hazardous Materials	High	City General Fund	Emergency Manager	Ongoing
33	Continue to Participate in StormReady	Severe Weather	High	City General Fund	Emergency Manager	Ongoing
34	Continue to Participate in TsunamiReady	Tsunami	High	City General Fund	Emergency Manager	Ongoing
35	Update and Expand Communications	Tsunami	High	City General Fund	Emergency Manager	Ongoing
36	Fire and Emergency Service Vehicles, Training, and Equipment	Widlfire	High	City General Fund	Fire Chief	>1 year
37	Water Usage and Filtration Limits	Volcano	Medium	State/Federal Grants	Public Works	>5 years
38	Ash Masks	Volcano	Medium	State/Federal Grants	Emergency Manager	>1 year

6.0 PLAN MAINTENANCE

This section addresses Element D of the Local Mitigation Plan Regulation Checklist.

Element D: Plan Maintenance	
D1.	Is there discussion of how each community will continue public participation in the plan maintenance process? (Requirement 44 CFR § 201.6(c)(4)(iii))
D1-a.	Does the plan describe how communities will continue to seek future public participation after the plan has been approved?
D2.	Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a five-year cycle)? (Requirement 44 CFR § 201.6(c)(4)(i))
D2-a.	Does the plan describe the process that will be followed to track the progress/status of the mitigation actions identified within the Mitigation Strategy, along with when this process will occur and who will be responsible for the process?
D2-b.	Does the plan describe the process that will be followed to evaluate the plan for effectiveness? This process must identify the criteria that will be used to evaluate the information in the plan, along with when this process will occur and who will be responsible
D2-c.	Does the plan describe the process that will be followed to update the plan, along with when this process will occur and who will be responsible for the process?
D3.	Does the plan describe a process by which each community will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement 44 CFR § 201.6(c)(4)(ii))
D3-a.	Does the plan describe the process the community will follow to integrate the ideas, information and strategy of the mitigation plan into other planning mechanisms?
D3-b.	Does the plan identify the planning mechanisms for each plan participant into which the ideas, information and strategy from the mitigation plan may be integrated?
D3-c.	For multi-jurisdictional plans, does the plan describe each participant's individual process for integrating information from the mitigation strategy into their identified planning mechanisms?

6.1 CONTINUED PUBLIC PARTICIPATION

A copy of the 2025 LHMP will remain available at the City of Cordova's city office and the State of Alaska Division of Community and Regional Affairs online community planning library, along with contact information. The mayor and/or the city administrator will use the community's Facebook page to notify the public of, and seek input on, any changes or updates to the 2025 LHMP, including the final action plan and the 2030 LHMP kickoff.

6.2 PLAN EVALUATION PROCESS, UPDATE METHOD AND SCHEDULE

To ensure project implementation, plan integration, and overall document relevance, the project manager (Public Works Director) will administer an annual plan review system with the help of the steering committee. Specifically, every January (2026, 2027, 2028, and 2029), the project manager will send out an Annual Review Tracker (Appendix D) to the steering committee and ask each member to complete the tracker, which documents disasters that have occurred; community assets that have been damaged; public outreach that has been conducted; mitigation actions that have been implemented (and mitigation goals that each action addresses, as identified in Appendix C); new and/or updated studies, reports, and maps that

have been published; and changes that have been made and/or that need to be made to the current or future LHMP. The project manager will collate and summarize the findings and distribute them to the steering committee.

In addition to the Annual Review Tracker, the project manager will collect any FEMA Mitigation Progress Reports (or other similar forms) from the previous year. The project manager will email these documents to each member of the steering committee for review. The project manager will subsequently hold a steering committee meeting in the first quarter of each year to determine, based on the findings from the Annual Review Tracker and FEMA Mitigation Progress Reports, if the actions undertaken the previous year (and the goals that they address, as identified in Appendix C) are helping achieve the plan's mitigation goals.

Finally, on the fourth year of the annual review, the project manager will kick off the 2030 LHMP in the summer of 2029 with the following activities:

- The project manager will reconvene the steering committee and update membership.
- The steering committee will review the summarized Annual Review Tracker findings to determine the hazards, community assets, and other related information to be included in the 2030 LHMP.
- The project manager will develop a new work plan.
- The project manager—with support from the steering committee—will begin the plan update process in mid-2029. The plan update process is expected to take up to 6 months.

The 2025 LHMP will be monitored, evaluated, and updated by the LHMP project manager; specifically, the Public Works Director. Should the 2025 LHMP project manager no longer be involved with the LHMP, the mayor will select a new project manager to oversee the annual reviews and plan update.

The LHMP project manager will get input from specific planning team members as needed. The LHMP project manager will complete the Annual Review Tracker every January and after any major disaster to ensure that the 2025 LHMP is relevant and effective in achieving the plan's goals. Annual review will be tracked in a table in this document (Table 6-1). FEMA-funded mitigation projects will continue to be tracked and reviewed using FEMA Mitigation Progress Report forms; progress summaries will be included in the Annual Review Tracker (Table 6-1) at the beginning of each year.

Four years after the 2025 LHMP's adoption:

- The mayor and city administrator or designee will complete the Annual Review Tracker.
- The mayor and city administrator or designee will reconvene the planning team and update membership, if necessary.
- The mayor and city administrator or designee will review Table 2-4, which provides annual summaries of the disasters that have occurred; new permanent information that becomes available; implementation measures; and public outreach and response to determine the hazards to be included in the next LHMP.
- The mayor and city administrator or designee will develop a new work plan.
- The mayor and city administrator or designee—with support from the planning team—will begin the plan update process, which is expected to take up to 6 months.

6.3 PLAN INTEGRATION

Information about how the 2025 LHMP will be integrated into the City of Cordova's relevant plans and programs moving forward is provided in Table 6-2.

Table 6-2: Integration of the 2025 LHMP

LHMP Section	Existing Plan/Policy/Program	Process/Timeframe
Section 4 – Risk Assessment	Comprehensive Plan	Incorporate GIS mapping of hazard areas, setbacks, and other studies identifying or refining the City's understating of hazards and risks into the updates to the City's Comprehensive Plan.
Section 5 – Mitigation Strategy	Comprehensive Plan	Incorporate the mitigation actions provided in Table 5-6 into planning for the update of the Comprehensive Plan and continue studying and evaluating the underlying problems potential solutions. Begin the design stage to develop a plan for each identified project, the actions to be taken, engineering and construction required, schedule, and estimated costs.

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7.0 PLAN UPDATE

This section addresses Element E of the Local Mitigation Plan Regulation Checklist.

Element E: Plan Update	
E1.	Was the plan revised to reflect changes in development? (Requirement 44 CFR § 201.6(d)(3))
E2.	Was the plan revised to reflect changes in priorities and progress in local mitigation efforts? (Requirement 44 CFR § 201.6(d)(3))
E2-a.	Does the plan describe how it was revised due to changes in community priorities?
E2-b.	Does the plan include a status update for all mitigation actions identified in the previous mitigation plan?
E2-c.	Does the plan describe how jurisdictions integrated the mitigation plan, when appropriate, into other planning mechanisms?

7.1 CHANGES IN DEVELOPMENT

The 2025 LHMP was updated to reflect the following changes that affect development:

- Six-Mile Subdivision which is located on Eyak Drive in a known area with high risk for flooding, very high landslide susceptibility, and within the tsunami hazard area.
- Construction starting on oil spill response facility at Shepard Point which is located in a known landslide and avalanche hazard area.

7.2 CHANGES IN PRIORITIES

According to FEMA, changes in a community's priorities do not always directly relate to how a plan prioritizes mitigation actions but could include new or modified goals for the plan and new hazards in the plan. There were several changes in priorities made to the 2025 LHMP, including the following:

- Including drought as a new hazard, which is increasing in Cordova as climate change continues to increase average temperatures and increase precipitation variability.

- Amending the prioritization from the 2018 LHMP to give priority toward strategies that have the potential to address multiple hazards.

7.3 PROGRESS IN LOCAL MITIGATION EFFORTS

The City of Cordova reviewed its 2018 LHMP's mitigation strategy and documented progress made toward each local mitigation effort, provided in Table 7-1. Mitigation actions that had not yet been implemented were considered for the 2025 LHMP (Table 5-5).

Table 7-1: Progress in Local Mitigation Efforts

Action #	Action	Status
FLD-1	Six-Mile Subdivision Drainage System	Ongoing; mitigation action revised and included in 2025 LHMP
FLD-2	Alternative Water Source to Six-Mile Subdivision	Deferred; mitigation action included in the 2025 LHMP

Action #	Action	Status
FLD-3	Letter or Map Revision for FIRMs	Completed in 2015; mitigation action revised and included in 2025 LHMP
FLD-4	Design and Construct Flood Proofing for Hospital	Deferred; mitigation action included in the 2025 LHMP
FLD-5	Heney Creek Waterline Replacement	Deferred; mitigation action revised and included in the 2025 LHMP
FLD-6	Power Creek Waterline Repair and/or Replacement	Deferred; mitigation action revised and included in the 2025 LHMP
FLD-7	Identify Drainage Patterns and Develop a Comprehensive Drainage System	Deferred; mitigation action revised and included in the 2025 LHMP
FLD-8	Structure Elevation and/or Relocation	Ongoing; mitigation action included in the 2025 LHMP
FLD-9	Take Steps to Update FIRM Cordova Maps	Ongoing; mitigation action revised and included in the 2025 LHMP
FLD-10	Public Information	Ongoing; mitigation action revised and included in the 2025 LHMP
FLD-11	Install new stream flow and rainfall measuring gauges	Complete; mitigation action revised and included in the 2025 LHMP
FLD-12	Apply for grants/funds to implement riverbank protection methods.	Deferred; mitigation action included in the 2025 LHMP
FLD-13	Investigate obtaining a community rating system to lower flood insurance rates.	Deferred; mitigation action revised and included in the 2025 LHMP
FLD-14	Continue to obtain flood insurance for all City structures and continue compliance with NFIP.	Deferred; mitigation action revised and included in the 2025 LHMP
FLD-15	Require that all new structures in the Flood Zone be constructed according to NFIP requirements and set back from river shoreline to lessen future erosion concerns and costs.	Ongoing; mitigation action revised and included in the 2025 LHMP
FLD-16	Take steps toward Mapping the Six-Mile Subdivision.	Completed in December 2015
FLD-17	Provide adequate storm drain and systems, ditches, surface hardening, and other resources to control erosion caused by floods.	Ongoing; mitigation action revised and included in the 2025 LHMP
SW-1	Research and consider instituting the National Weather Service program of “Storm Ready.”	Complete; mitigation action revised and included in the 2025 LHMP
SW-2	Conduct special awareness activities such as Winter Weather Awareness Fair, Flood Awareness Week, etc.	Ongoing; mitigation action revised and included in the 2025 LHMP
SW-3	Expand public awareness about NOAA Weather Radio for continuous weather broadcasts and warning tone alert capability.	Ongoing; mitigation action revised and included in the 2025 LHMP
SW-4	Encourage weather-resistant building construction materials and practices.	Complete; building codes updated in 2025

Action #	Action	Status
SW-5	Evaluate current heavy equipment for show/debris and other needs created by severe weather conditions.	Deferred; mitigation action revised and included in the 2025 LHMP
SW-6	Perform Storm Drain Analysis. Provide solutions and efficiencies for potential flood relief and drainage of low areas.	Ongoing; mitigation action revised and included in the 2025 LHMP
WF-1	Continue to support the fire department with adequate firefighting equipment and training.	Ongoing; mitigation action revised and included in the 2025 LHMP
WF-2	Promote education of building design, siting, and materials for construction.	Complete; building codes updated in 2025
WF-3	Enhance public awareness of potential risk to life and personal property. Encourage mitigation measures in the immediate vicinity of their property.	Ongoing; mitigation action revised and included in the 2025 LHMP
E-1	If funding is available, perform an engineering assessment of the earthquake vulnerability of each identified critical infrastructure owned by the City of Cordova.	Complete
E-2	Identify buildings and facilities that must be able to remain operable during and following and earthquake event.	Complete
E-3	Contract a structural engineering firm to assess the identified buildings and facilities to determine their structural integrity and strategy to improve their earthquake resistance. Retrofit or upgrade critical structures as recommended by Structural Engineer.	Deferred; mitigation action revised and included in the 2025 LHMP
E-4	Continue to educate all City employees and citizens with regards to earthquake preparedness, particularly with regards to the current EOP, Incident Command Structure, Cordova COOP plan, and personal Responder READY courses.	Ongoing; mitigation action revised and included in the 2025 LHMP
T/S-1	Continue Participation in the Tsunami Awareness Program.	Ongoing
T/S-2	Finish TsunamiReady Community Designation	Complete
T/S-3	Inundation Mapping.	Complete
T/S-4	Continue Using the Emergency Operations Plan in exercises regarding natural hazards including tsunami danger.	Ongoing; mitigation action revised and included in the 2025 LHMP
T/S-5	The Police / Jail / Fire Station / Alaska State Troopers building is located in the tsunami inundation area. This building needs to be relocated.	Ongoing; mitigation action revised and included in the 2025 LHMP
T/S-6	Improve “high ground” parking areas for tsunami evacuations.	Deferred; mitigation action revised and included in the 2025 LHMP
T/S-7	Evaluate heavy equipment and other equipment needed to remove debris.	Deferred; mitigation action revised and included in the 2025 LHMP
A/L-1	Prohibit new construction in avalanche zones.	Complete for specific area; mitigation action revised and included in the 2025 LHMP
A/L-2	Utilize appropriate methods of structural avalanche control.	Complete
A/L-3	Enact buyout of homes in avalanche paths.	Complete

Action #	Action	Status
A/L-4	Prohibit removal of vegetation in areas prone to landslides.	Deferred; mitigation action included in the 2025 LHMP
A/L-5	Install warning signage in mapped landslide zones.	Ongoing; mitigation action revised and included in the 2025 LHMP
A/L-6	Continue to educate public, specifically back country users, about avalanche and landslide hazards. Information can be disseminated to be public through the City web site, press releases, media ads, avalanche awareness classes, and other methods.	Ongoing; mitigation action revised and included in the 2025 LHMP
A/L-7	Complete the avalanche mapping and mitigation alternatives overview of other avalanche areas within the City of Cordova, including Power Creek and Shepard Point.	Ongoing; mitigation action included in the 2025 LHMP
A/L-8	Encourage good record-keeping of past, present and future avalanche events affecting private lands in the Cordova area. Such records are invaluable for planning and mitigation.	Ongoing; mitigation action revised and included in the 2025 LHMP
A/L-9	Add a Geologic Layer to Cordova's mapping system.	Deferred; mitigation action revised and included in the 2025 LHMP
VAF-1	Continue to educate the public about what to do in case of volcanic ashfall.	Deferred; mitigation action revised and included in the 2025 LHMP
VAF-2	Determine water usage levels and filtration limits of current system, to determine whether water rationing may be necessary in the event ashfall impacts drinking water supply.	Deferred; mitigation action included in the 2025 LHMP
VAF-3	Ensure a local supply of ash masks and store at emergency shelters.	Ongoing; mitigation action included in the 2025 LHMP
TPHH-1	Identify and organize local resources.	Ongoing; mitigation action included in the 2025 LHMP
TPHH-2	Support community-wide mitigation training/education about non-natural hazards.	Ongoing; mitigation action revised and included in the 2025 LHMP
TPHH-3	Encourage improved training, education, planning and safety in the production, use and transportation of oil and hazardous substances.	Ongoing; mitigation action revised and included in the 2025 LHMP
TPHH-4	Participate in regional oil spill drills / exercises.	Ongoing; mitigation action included in the 2025 LHMP

In addition, supporting local plans, studies, and programs were reviewed to determine additional progress in local mitigation efforts. Relevant ongoing actions are also provided in Table 5-6.

7.4 INTEGRATION OF THE 2025 LHMP INTO OTHER PLANNING MECHANISMS

In 2019, the City of Cordova completed an update to its Comprehensive Plan. The updated Comprehensive Plan includes a chapter on Quality of Life, with Goal D "Achieve resiliency through continued hazard mitigation and emergency preparedness planning." The hazard profiles and mitigation strategies in this 2025 LHMP can be integrated into future updates to the Comprehensive Plan and other relevant planning mechanisms to better utilize the hazard mitigation plan as a planning and decision-making tool for future development.

8.0 PLAN ADOPTION

This section addresses Element F of the Local Mitigation Plan Regulation Checklist.

Regulation Checklist – 44 CFR 201.6 Local Mitigation Plans
Element F: Plan Adoption
F1. For single jurisdictional plans, has the governing body of the jurisdiction formally adopted the plan to be eligible for certain FEMA assistance? (Requirement §201.6(c)(5)) F2. For multi-jurisdictional plans, has the governing body of each jurisdiction officially adopted the plan to be eligible for certain FEMA assistance? (Requirement §201.6(c)(5))

8.1 FORMAL ADOPTION

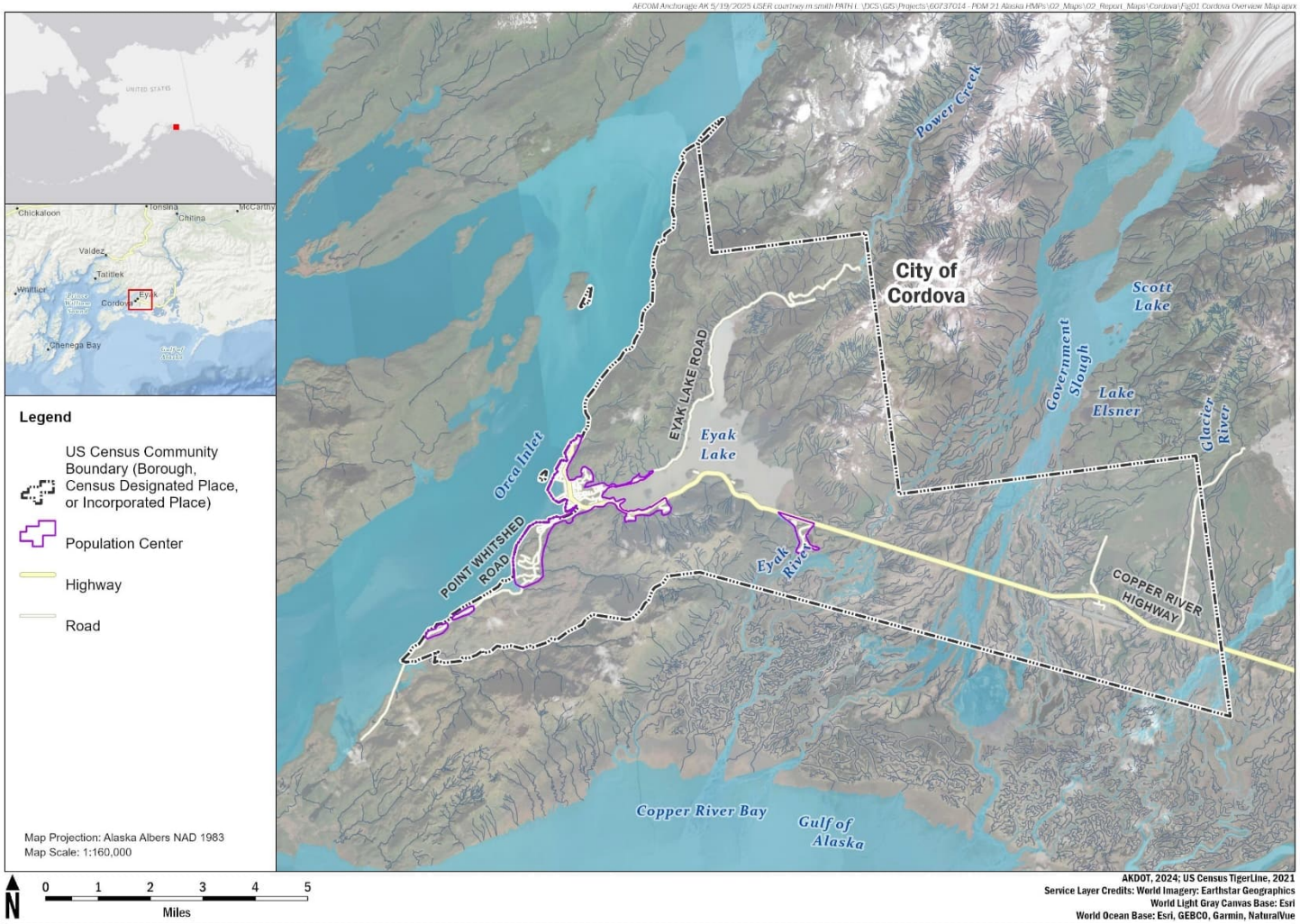
The 2025 LHMP was formally adopted on XXXX, by the City of Cordova City Council. A copy of the adoption resolution in on file with the community and the Alaska Division of Homeland Security and Emergency Management.

9.0 APPENDICES

APPENDIX A—PLANNING PROCESS

APPENDIX B—FIGURES

Figure 1: Overview Map



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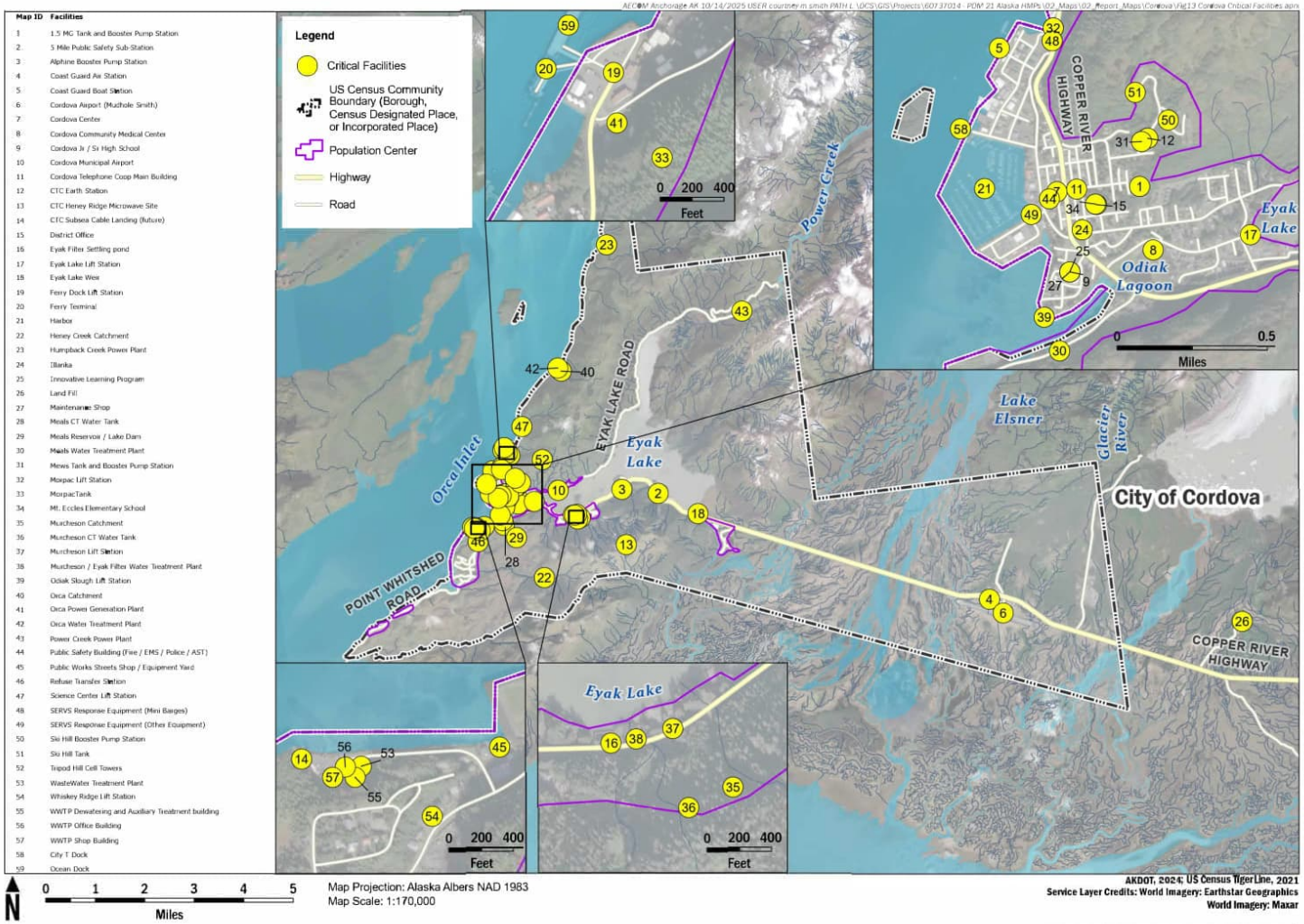
Local Hazard Mitigation Plan

OVERVIEW MAP
Figure 1

Figure 2: Critical Facilities



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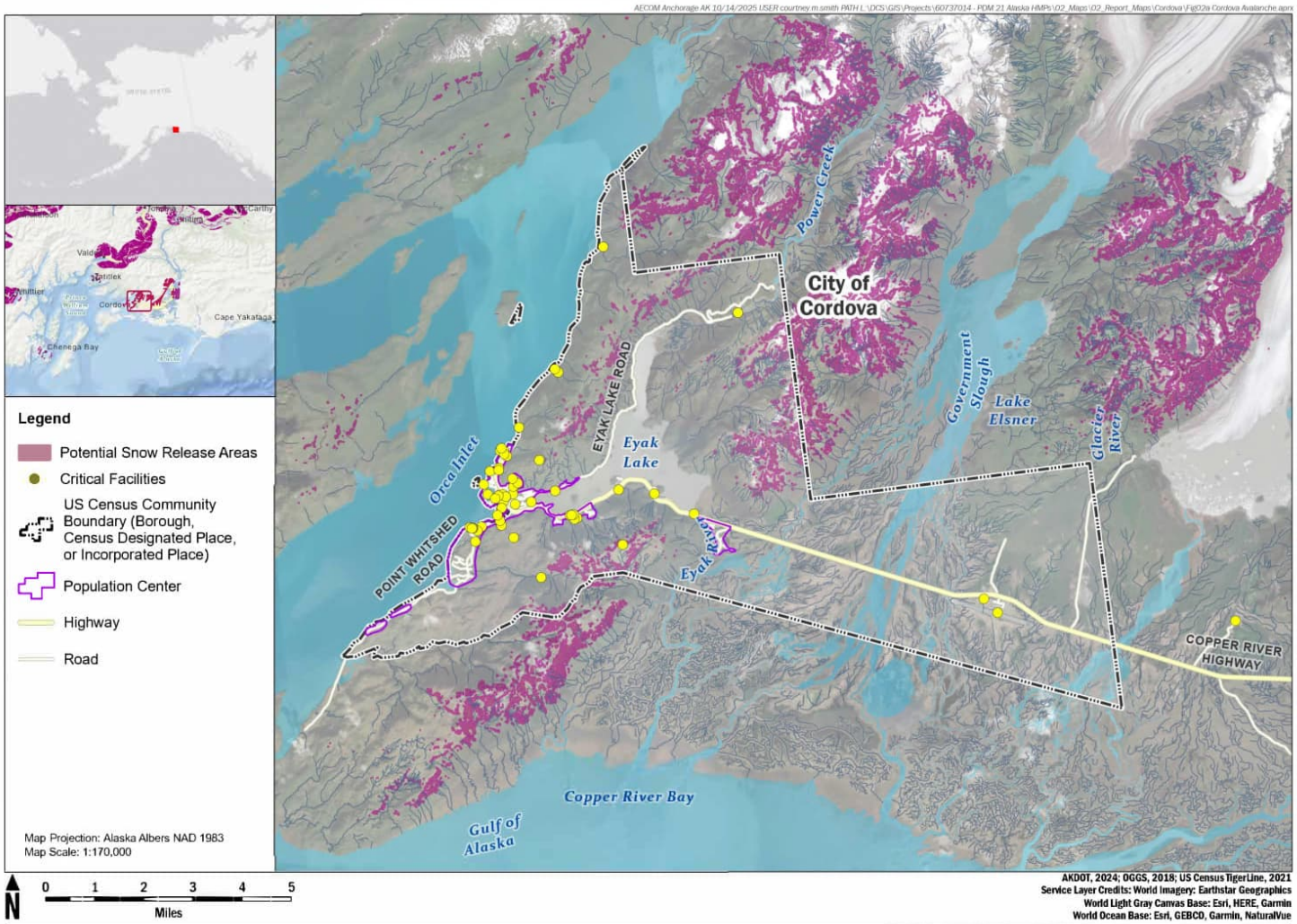
Local Hazard Mitigation Plan

CRITICAL FACILITIES
Figure 2

Figure 3: Avalanche Hazard



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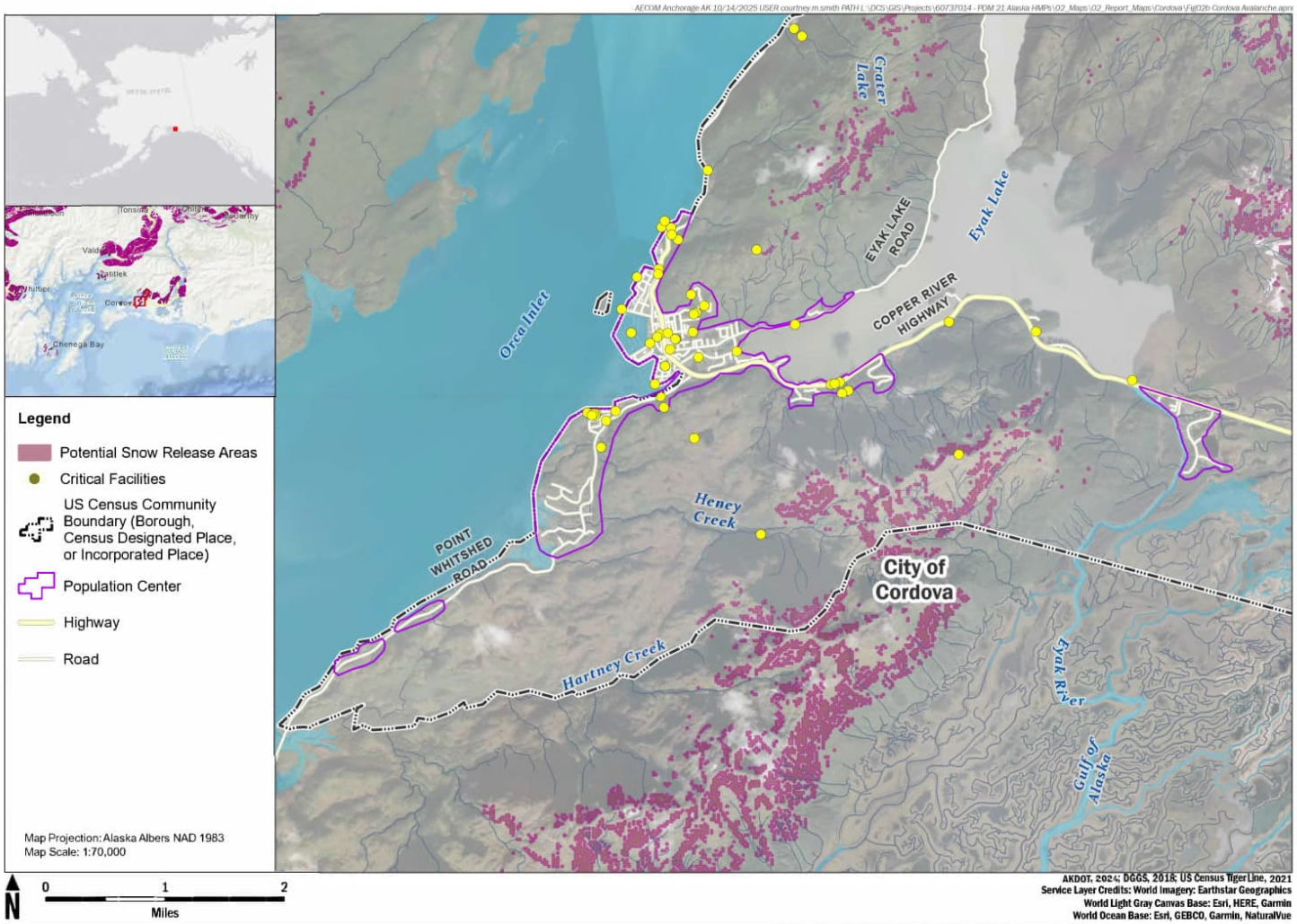
Local Hazard Mitigation Plan

AVALANCHE HAZARD – OVERVIEW

Figure 3a



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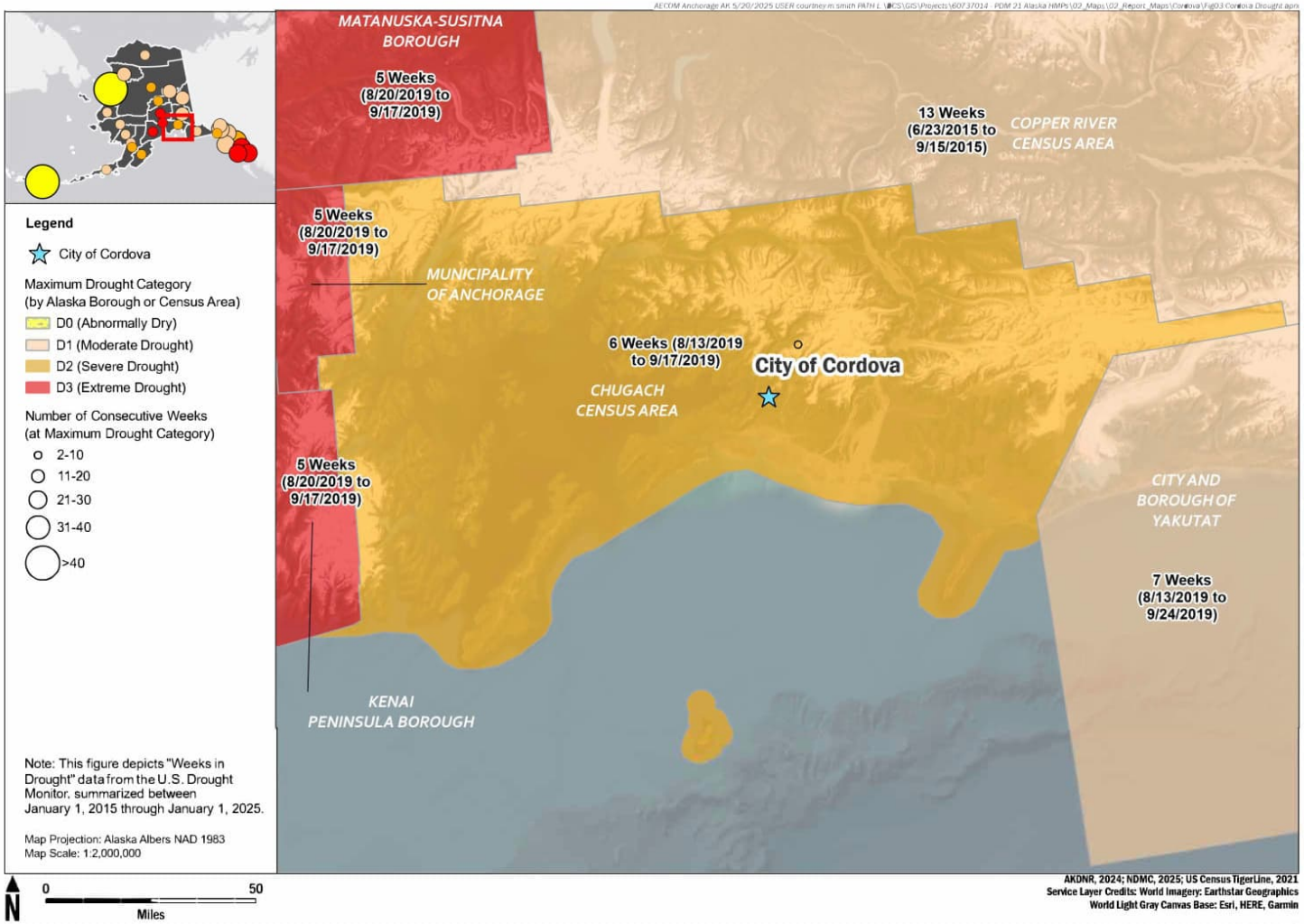
Local Hazard Mitigation Plan

AVALANCHE HAZARD – POPULATED AREAS

Figure 3b

Figure 4: Drought Hazard



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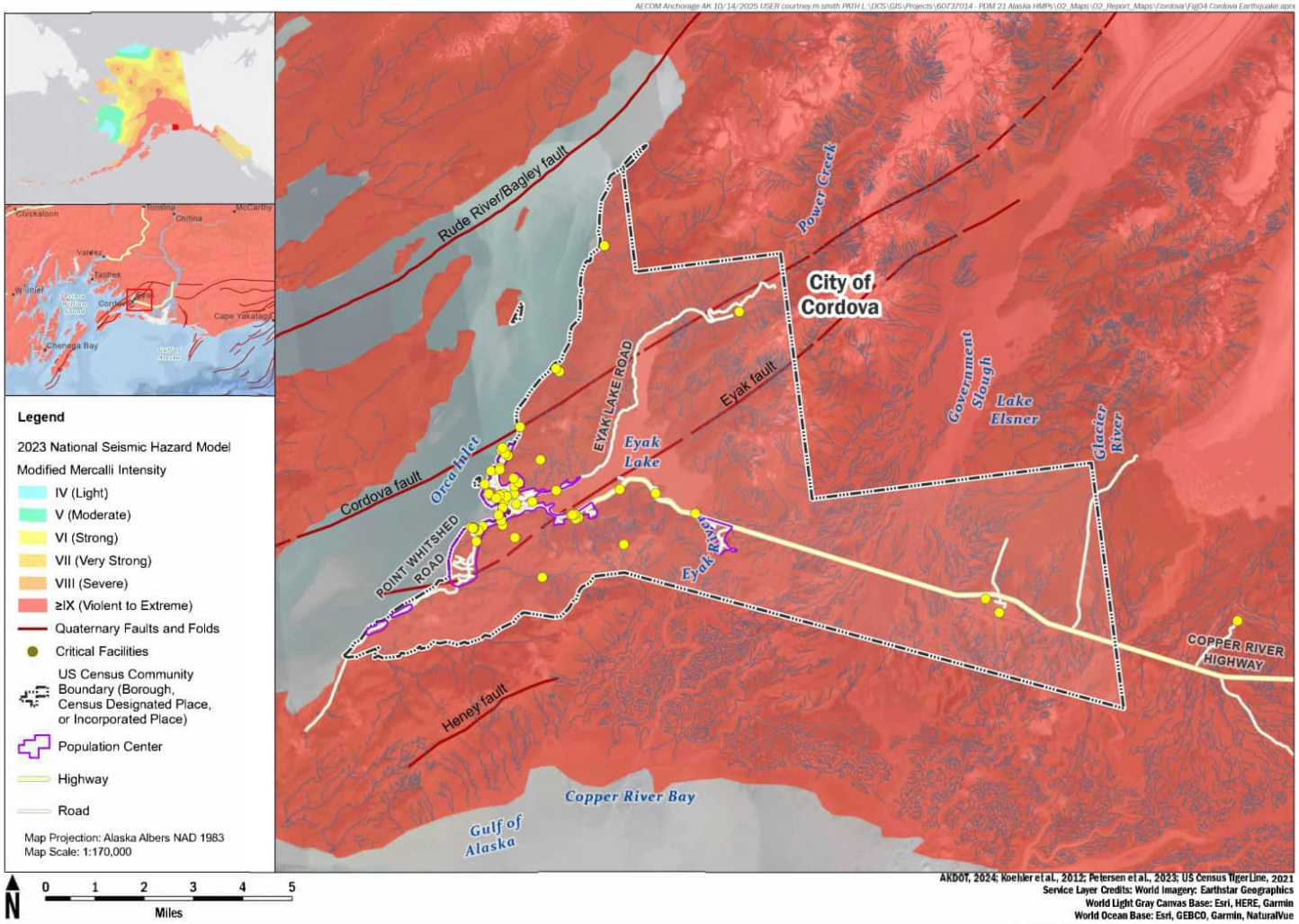
Local Hazard Mitigation Plan

DROUGHT HAZARD

Figure 4

Figure 5: Earthquake Hazard



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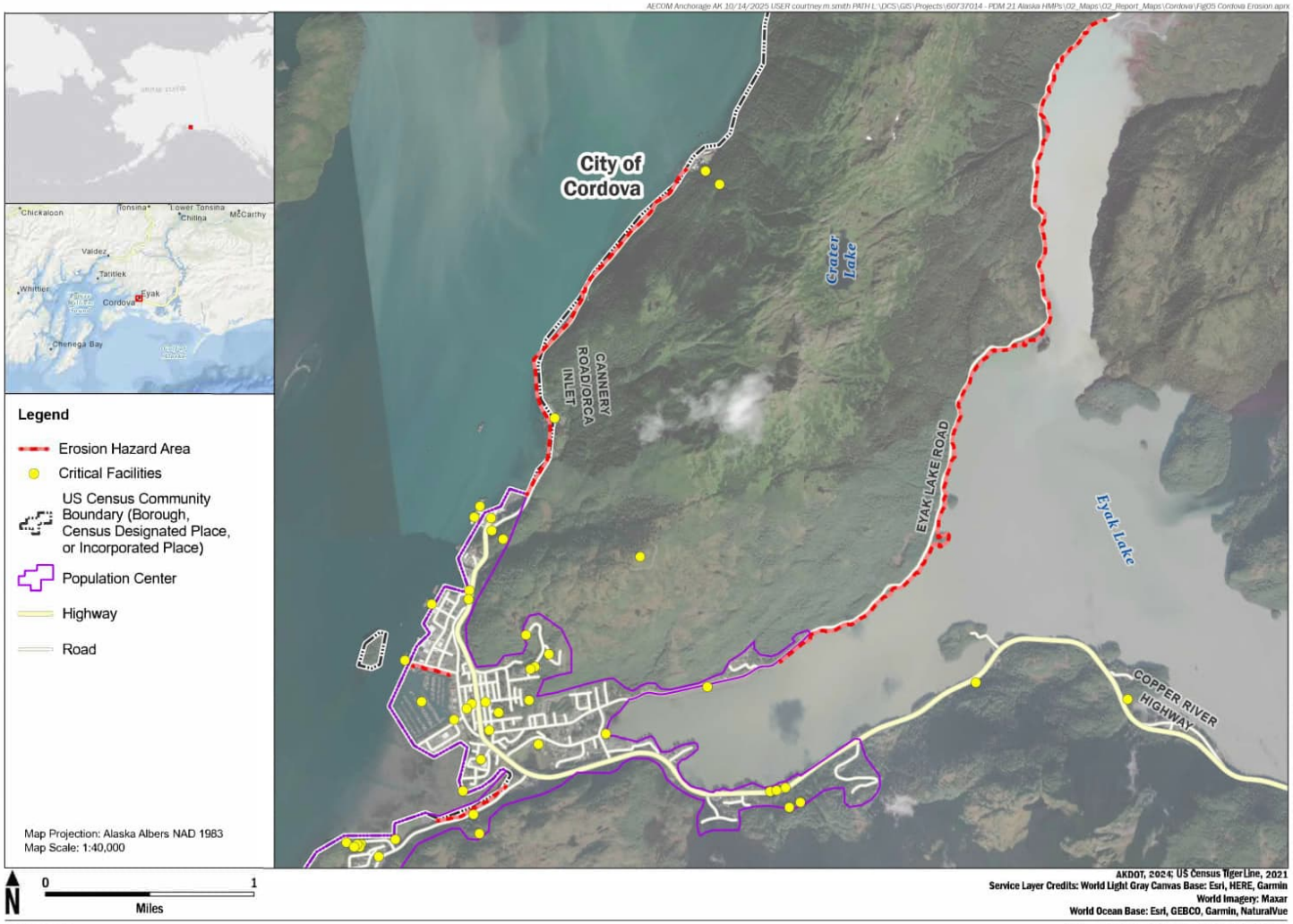
Local Hazard Mitigation Plan

EARTHQUAKE HAZARD

Figure 5

Figure 6: Erosion Hazard



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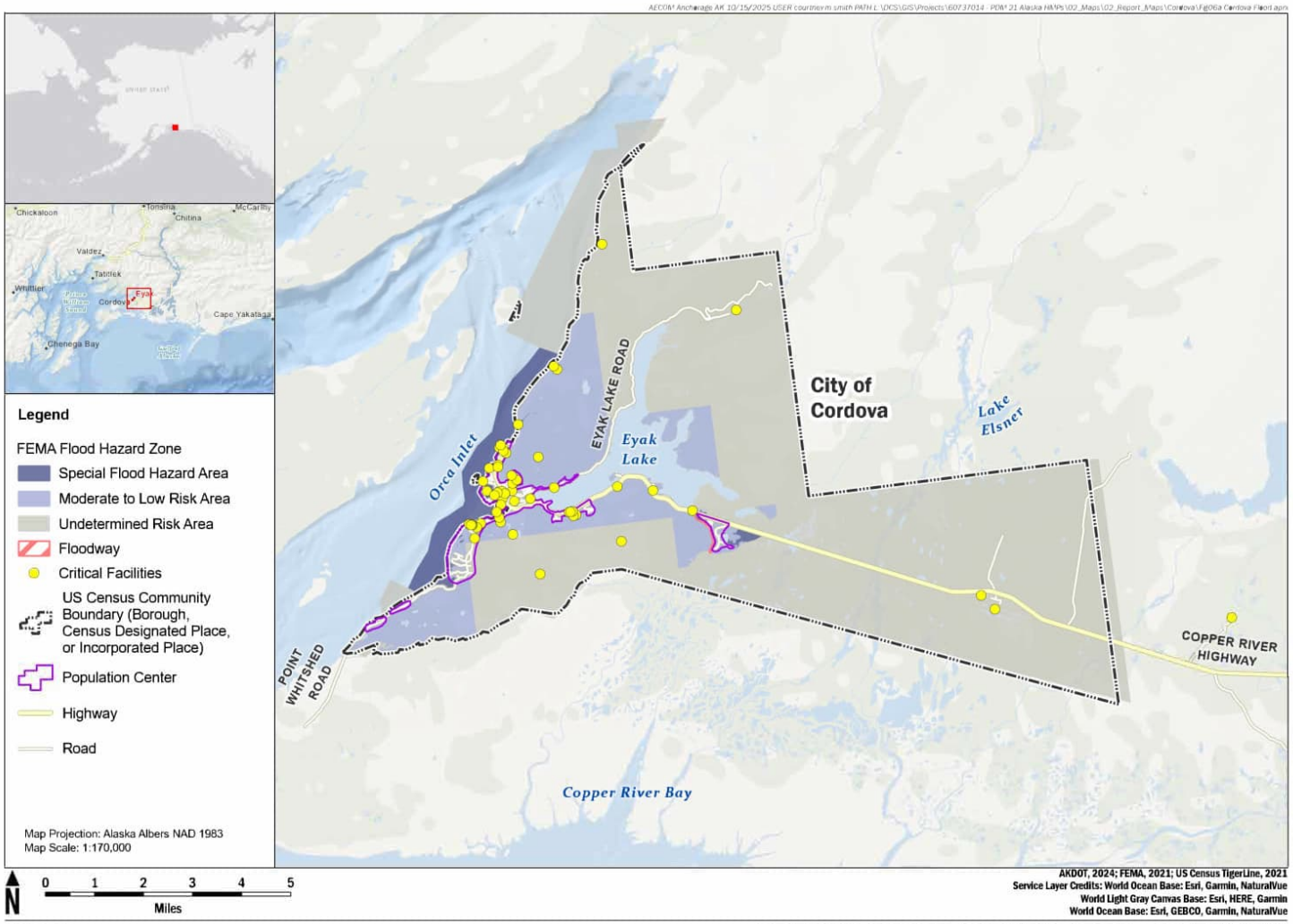
Local Hazard Mitigation Plan

EROSION HAZARD

Figure 6

Figure 7: Flood Hazard



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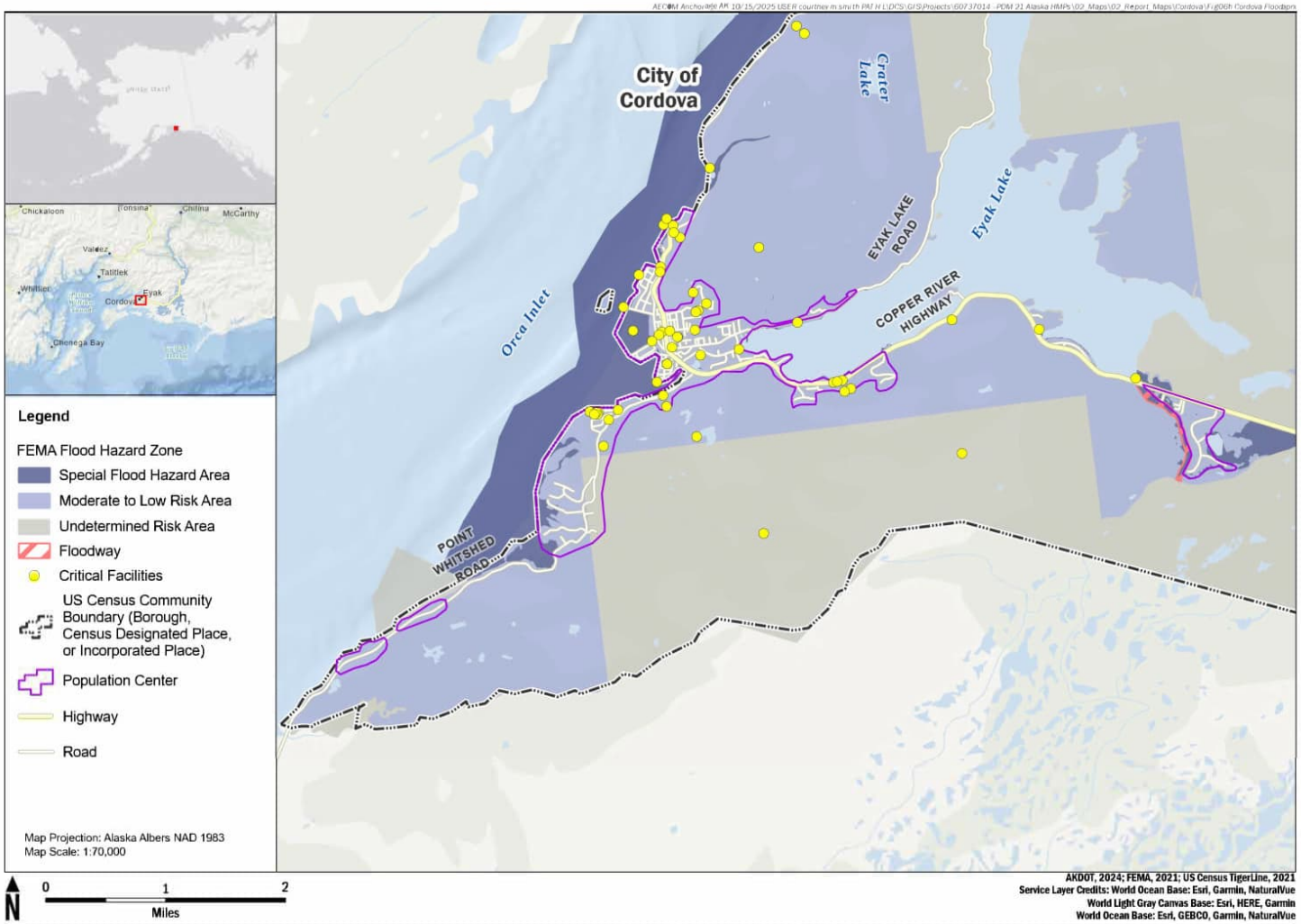
Local Hazard Mitigation Plan

SPECIAL FLOOD HAZARD AREA – OVERVIEW

Figure 7a



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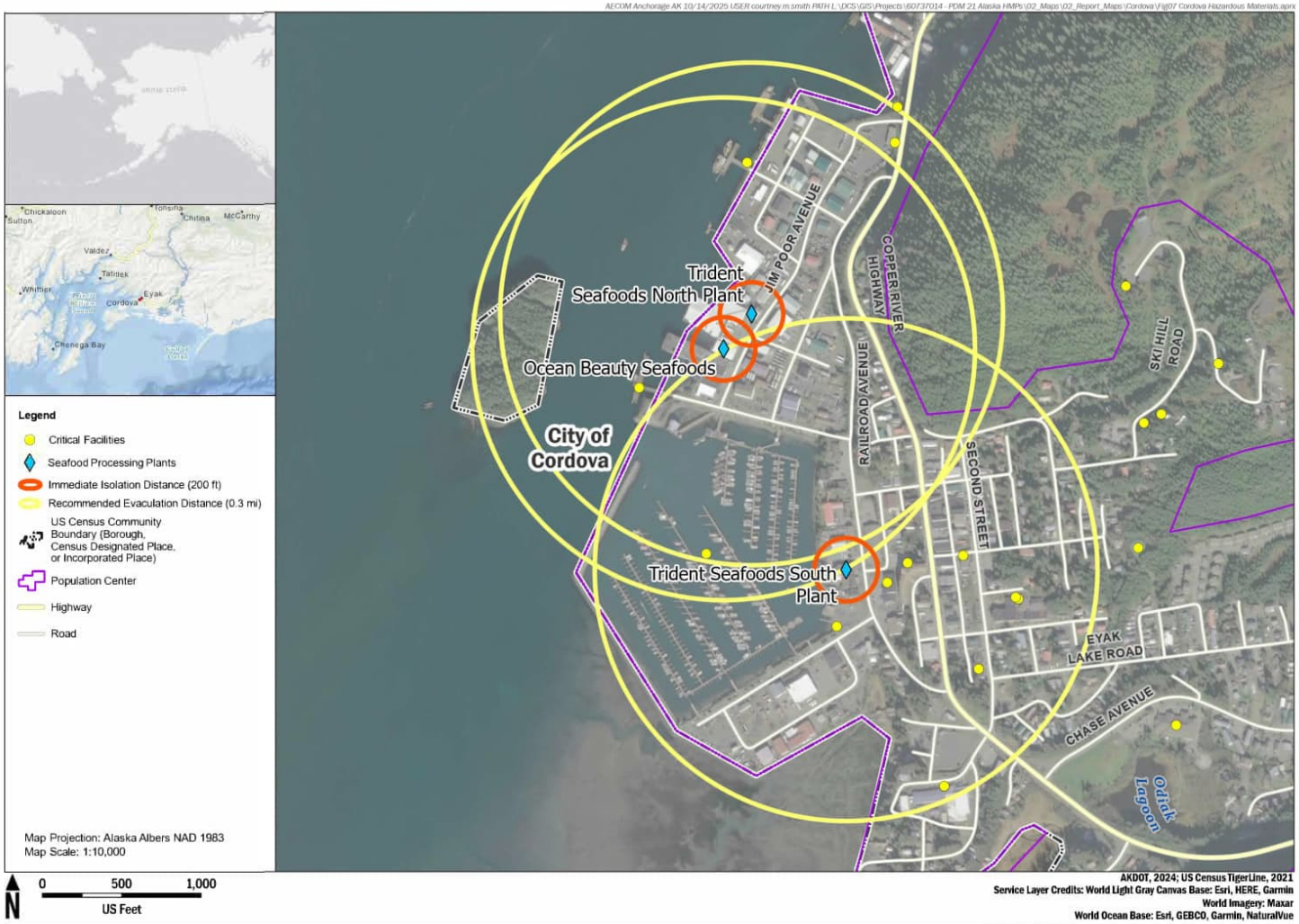
Local Hazard Mitigation Plan

SPECIAL FLOOD HAZARD AREA – POPULATED AREAS

Figure 7b

Figure 8: Hazardous Materials Hazard



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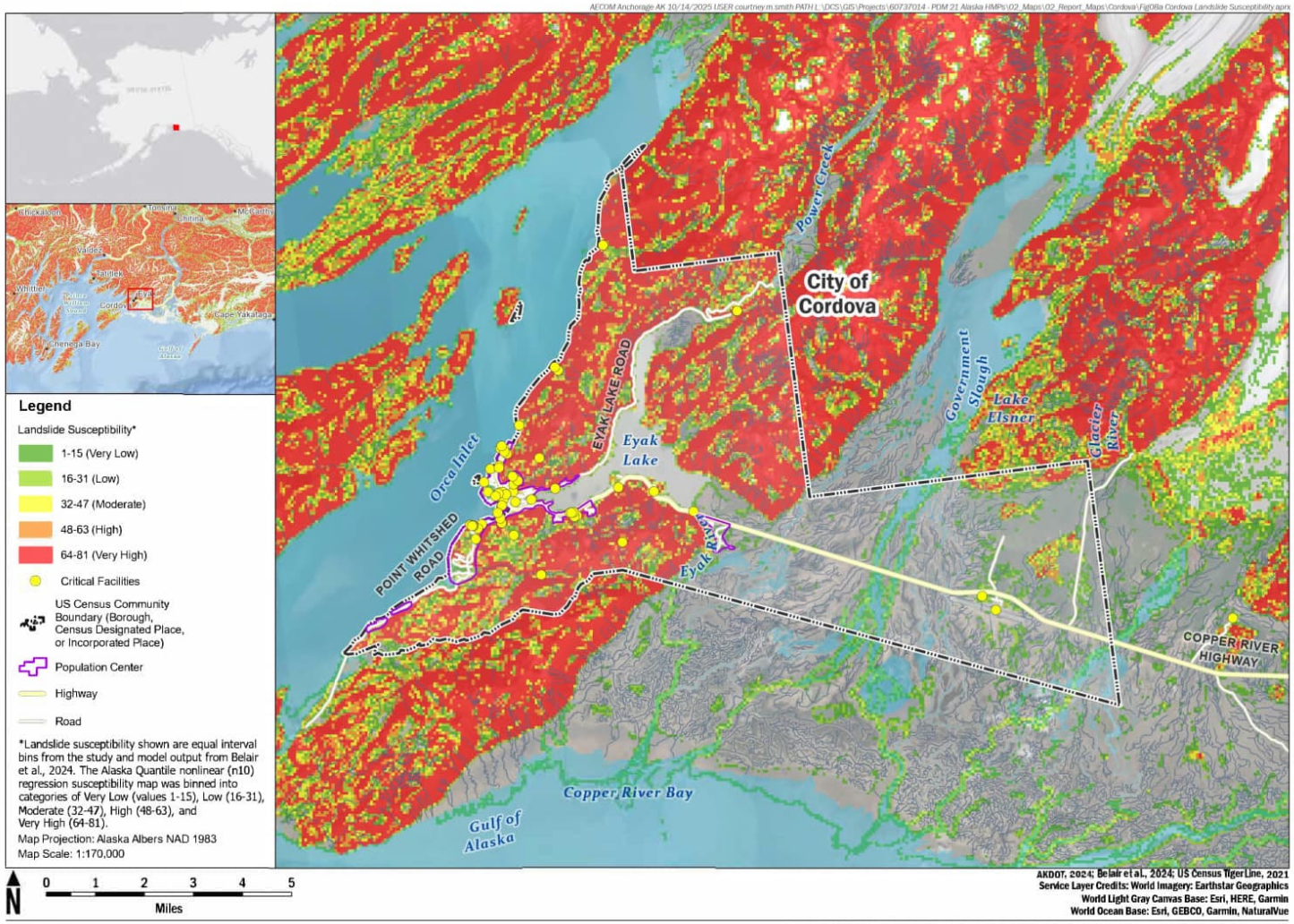
City of Cordova 2025
Local Hazard Mitigation Plan

HAZARDOUS MATERIALS

Figure 8

Figure 9: Landslide Susceptibility



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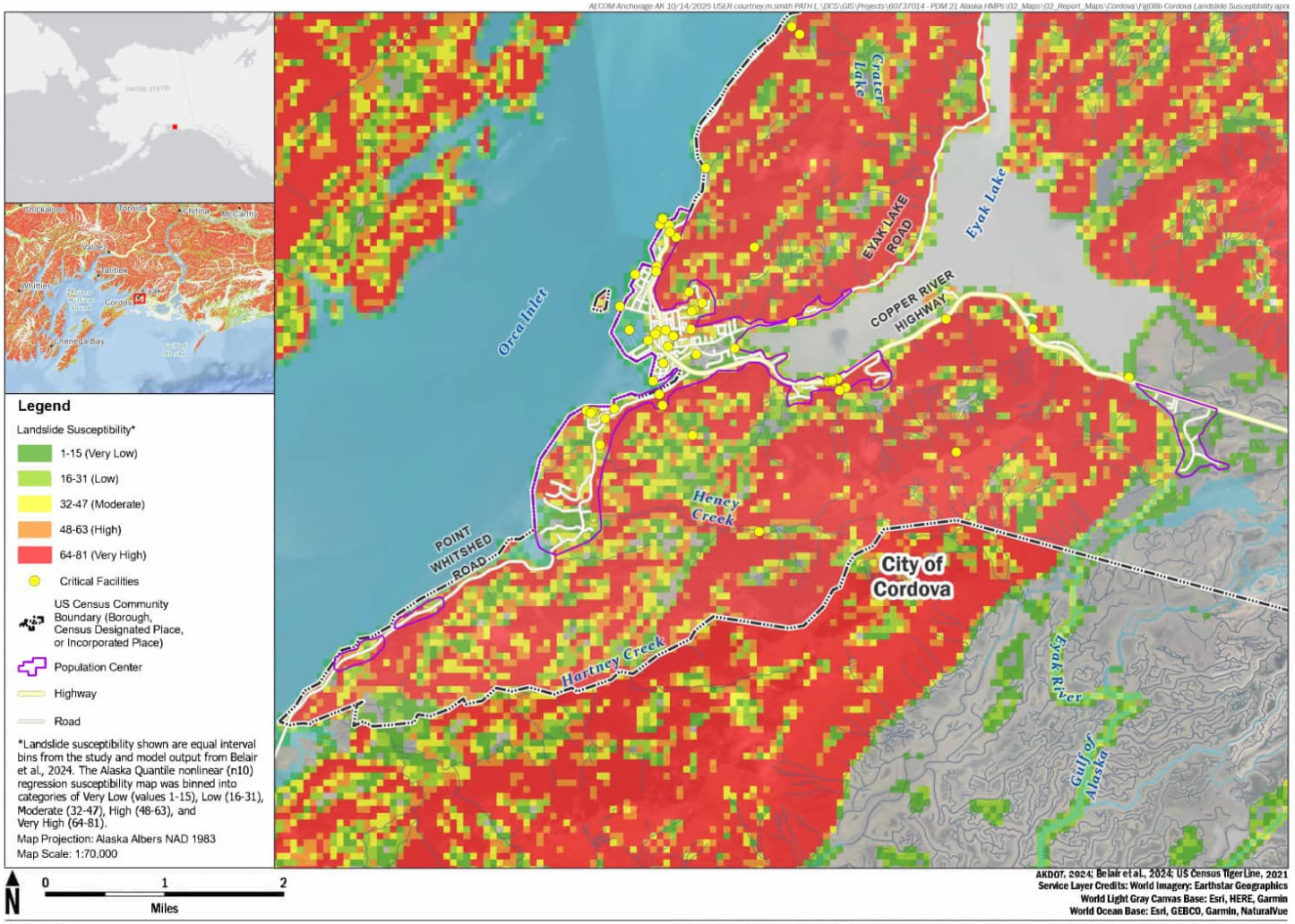
Local Hazard Mitigation Plan

LANDSLIDE SUSCEPTIBILITY – OVERVIEW

Figure 9a



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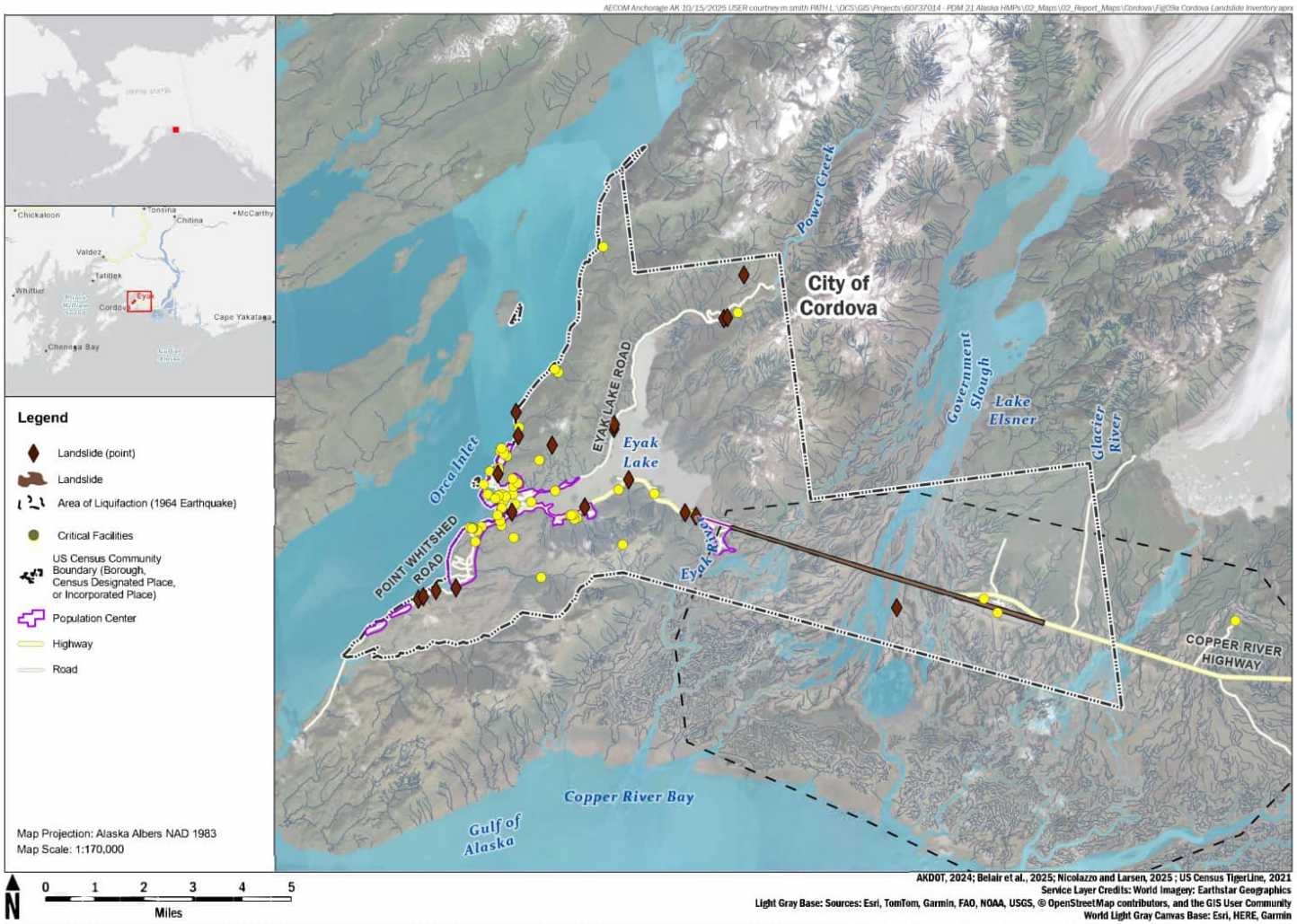
Local Hazard Mitigation Plan

LANDSLIDE SUSCEPTIBILITY – POPULATED AREAS

Figure 9b

Figure 10: Landslide Occurrences



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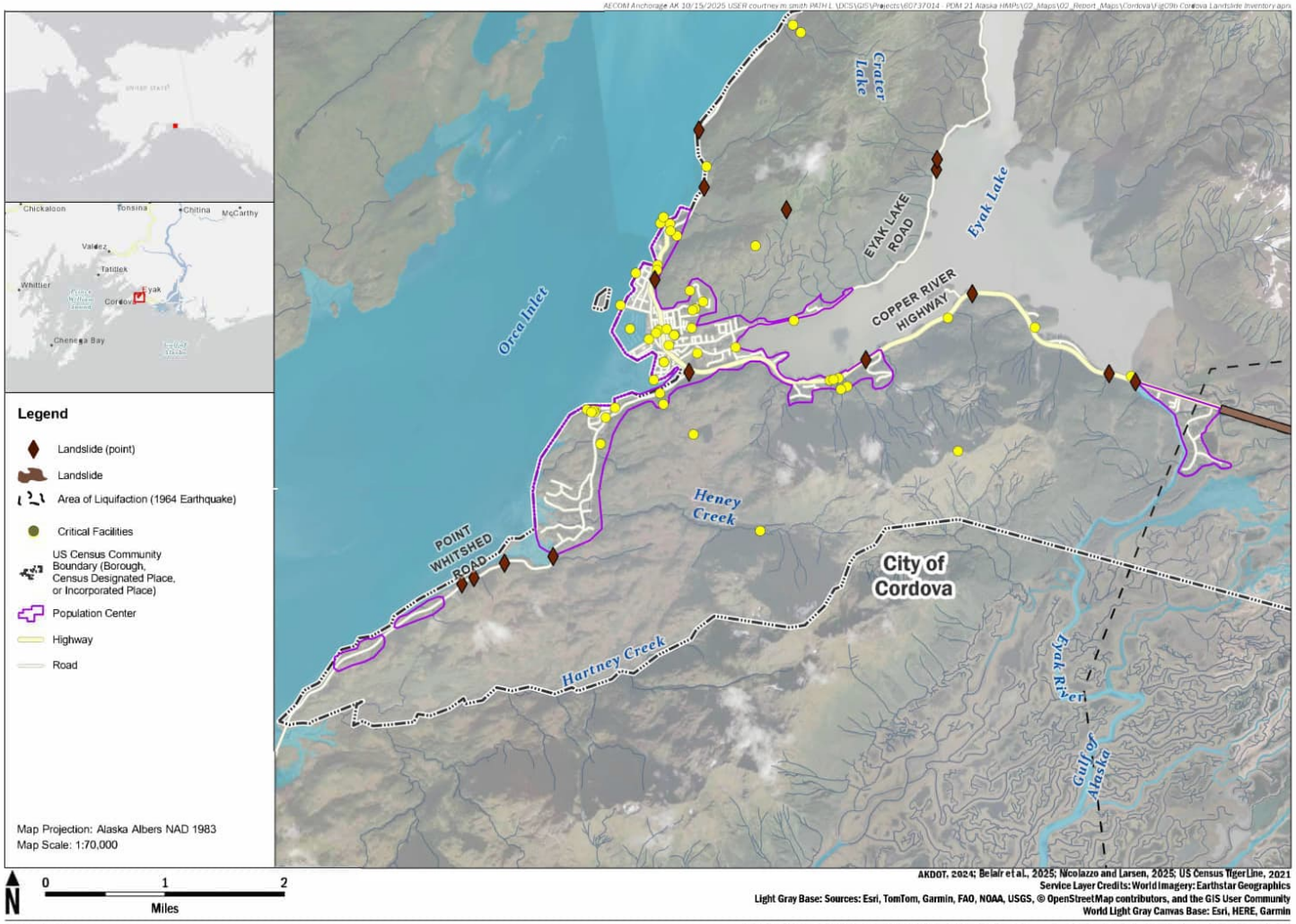
Local Hazard Mitigation Plan

LANDSLIDE INVENTORY – OVERVIEW

Figure 10a



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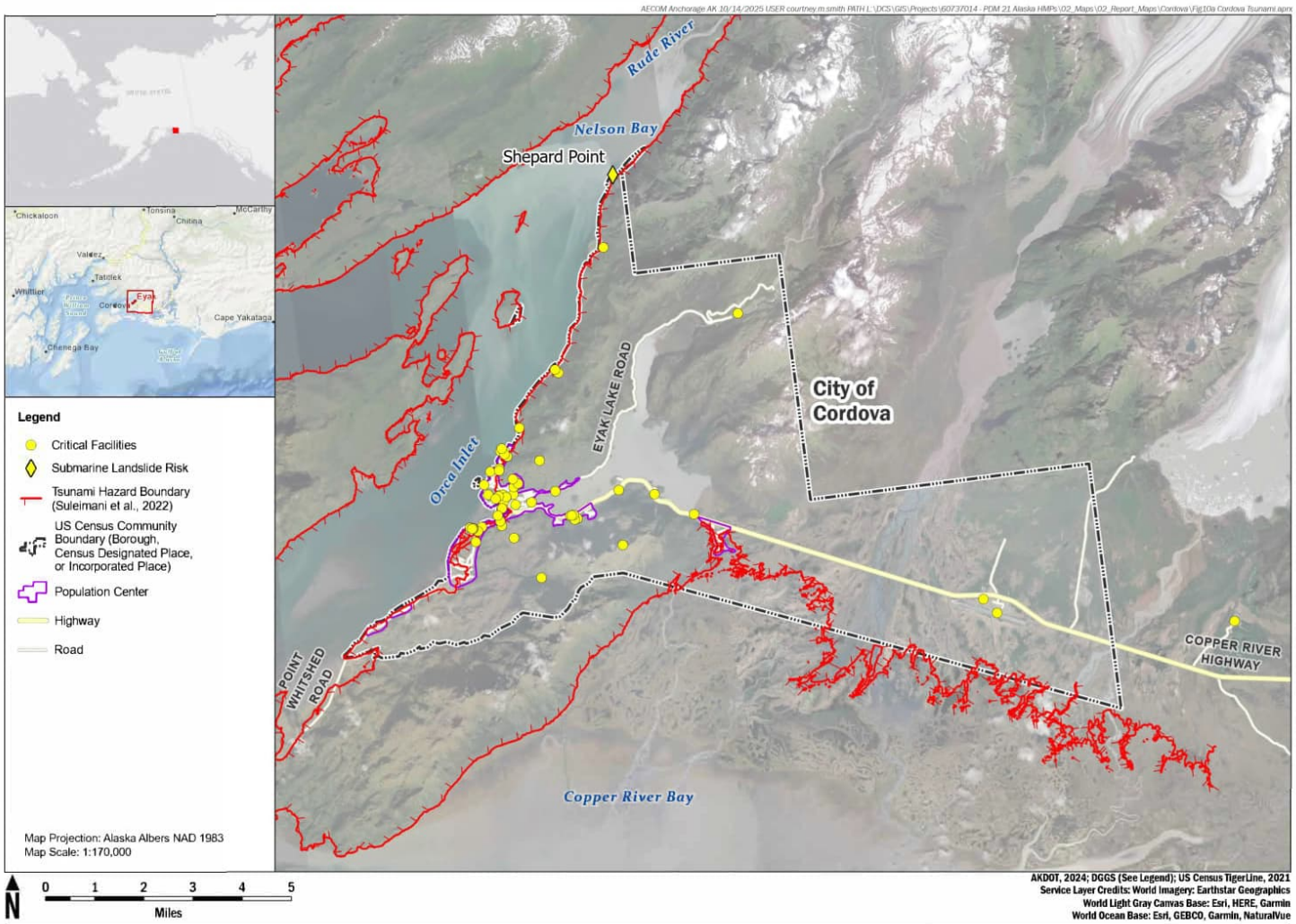
Local Hazard Mitigation Plan

LANDSLIDE INVENTORY – POPULATED AREAS

Figure 10b

Figure 11: Tsunami Hazard



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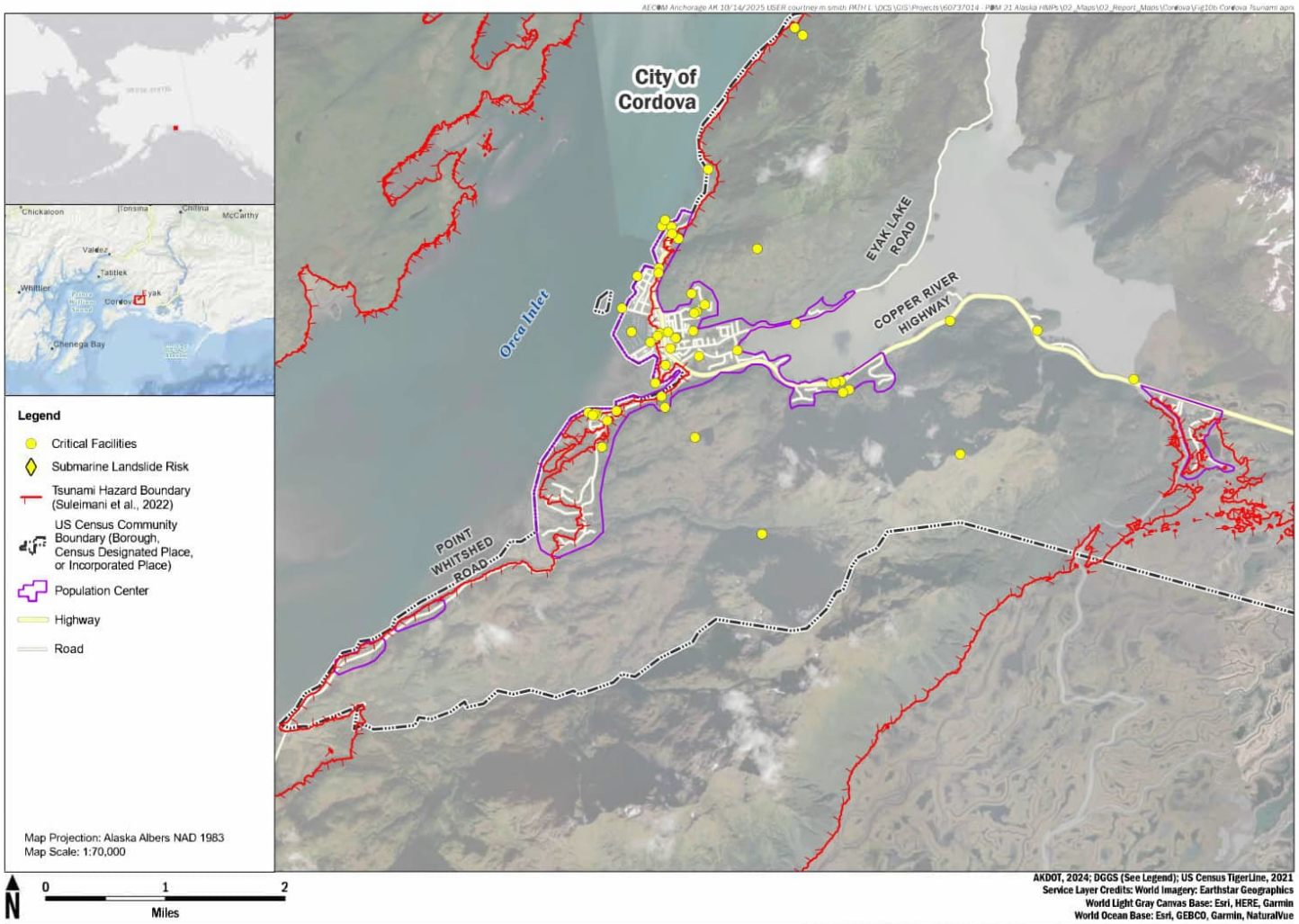
City of Cordova 2025
Local Hazard Mitigation Plan

TSUNAMI HAZARD – OVERVIEW

Figure 11a



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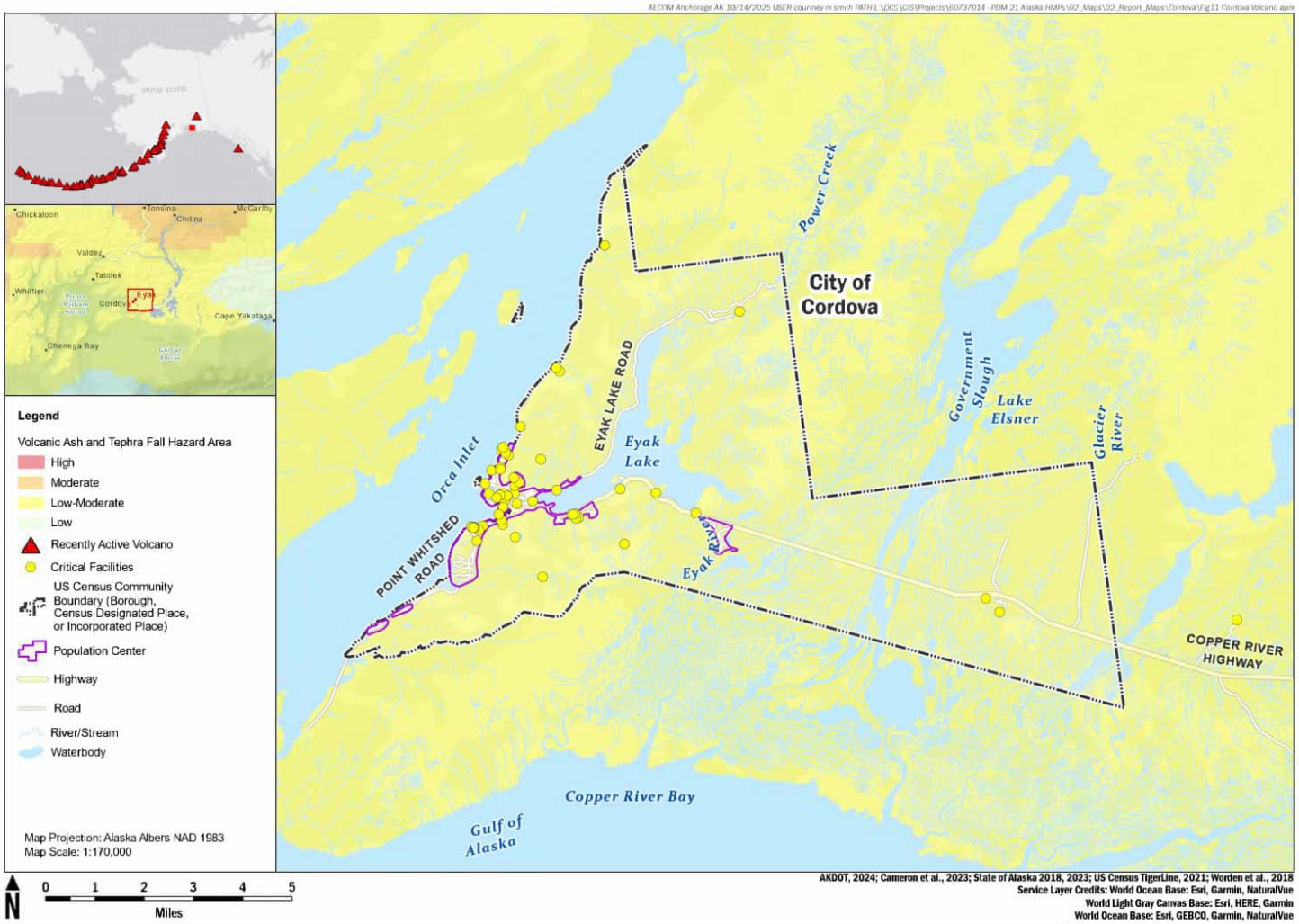
City of Cordova 2025
Local Hazard Mitigation Plan

TSUNAMI HAZARD – POPULATED AREAS

Figure 11b

Figure 12: Volcano Exposure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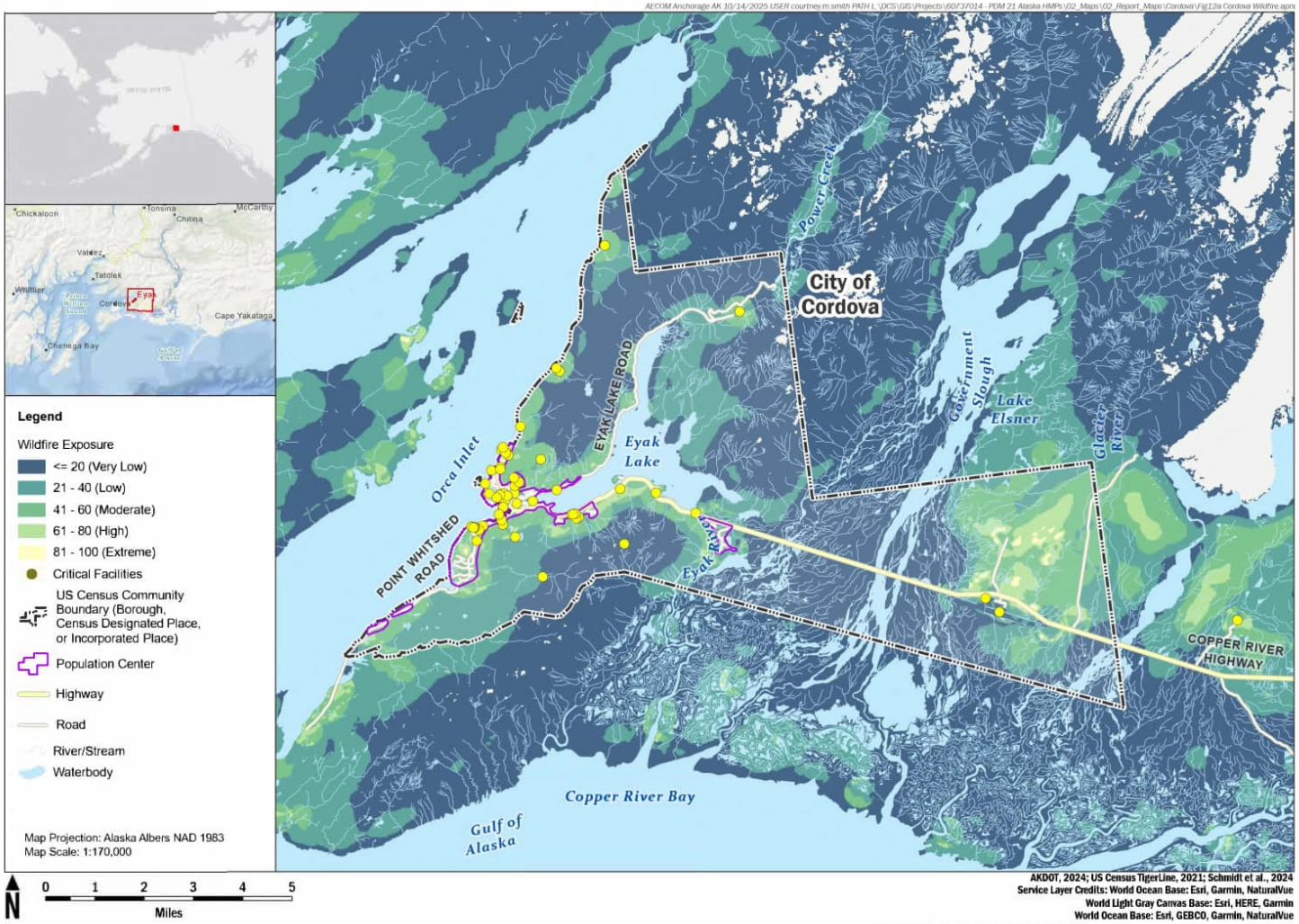
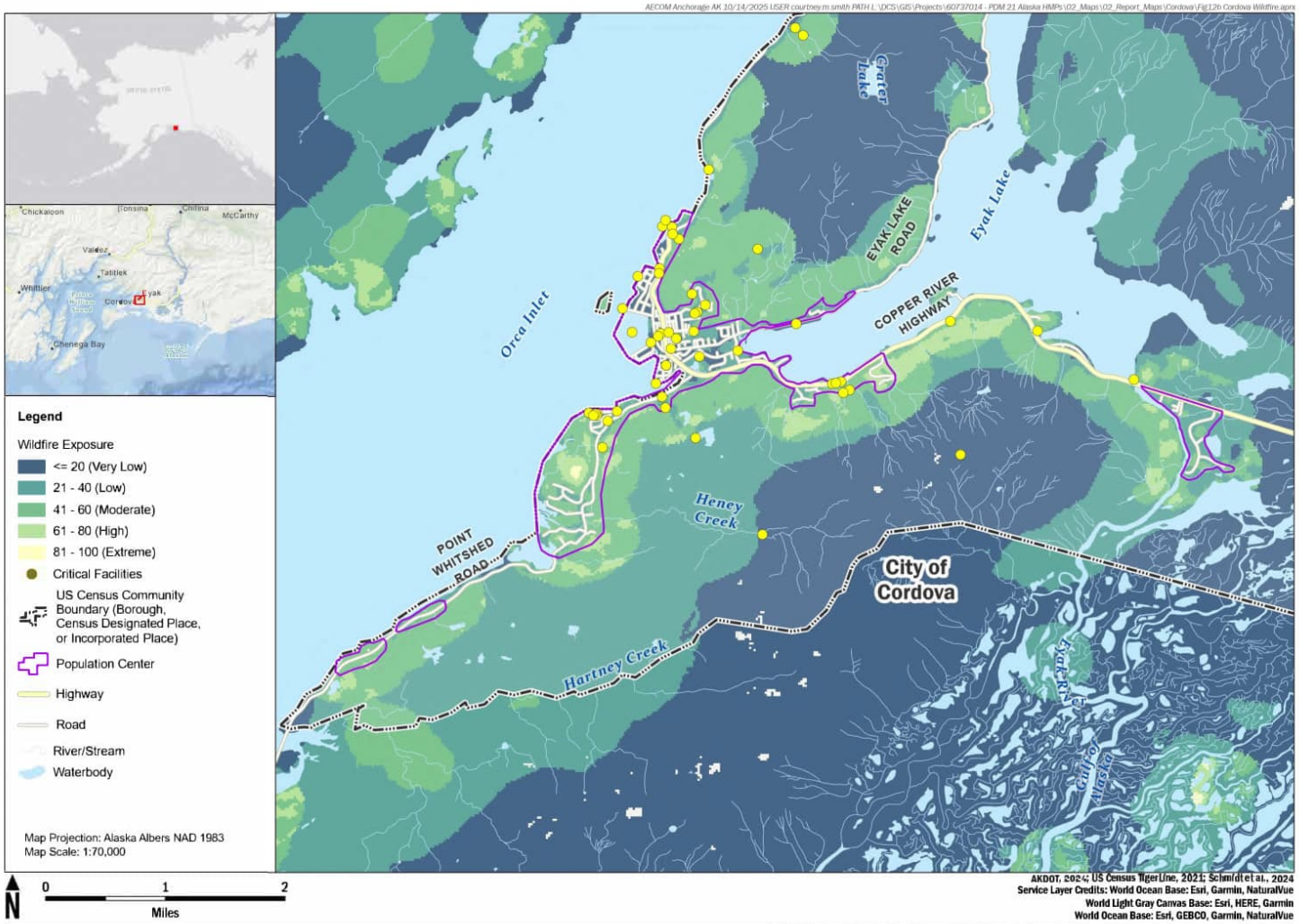
Chickaloon
Tonsina
Chitina
McCarthy
Valdez
Tatitlek
Whittier
Cordova
Eyak
Cape Yakataga
Chenega Bay
Legend
Volcanic Ash and Tephra Fall Hazard Area
High
Moderate
Low-Moderate
Low
Recently Active Volcano
Critical Facilities
US Census Community Boundary (Borough, Census Designated Place, or Incorporated Place)
Population Center
Highway
Road
River/Stream
Waterbody
Map Projection: Alaska Albers NAD 1983
Map Scale: 1:170,000
City of Cordova
Power Creek
EYAK LAKE ROAD
Orca Inlet
Eyak Lake
Government Slough
Lake Elsner
Glacier River
POINT WHITSHED ROAD
Eyak River
COPPER RIVER HIGHWAY
Copper River Bay
Gulf of Alaska
N
0 1 2 3 4 5
Miles
AKDOT, 2024; Cameron et al., 2023; State of Alaska 2018, 2023; US Census TigerLine, 2021; Worden et al., 2018
Service Layer Credits: World Ocean Base: Esri, Garmin, NaturalVue
World Light Gray Canvas Base: Esri, HERE, Garmin
World Ocean Base: Esri, GEBCO, Garmin, NaturalVue
AECOM
City of Cordova 2025
Local Hazard Mitigation Plan
VOLCANO HAZARD
Figure 12

Figure 13: Wildfire


AECOM Anchorage AK 10/14/2025 USER courtney.m.smith PATH L:\DCS\GIS\Projects\60737014 - PDM 21 Alaska HMPs\02_Maps\02_Report_Maps\Cordova\Fig12a Cordova Wildfire.aprx
Chickaloon
Tonsina
Chitina
McCarthy
Valdez
Tatitlek
Whittier
Eyak
Cordova
Cape Yakataga
Chenega Bay
Legend
Wildfire Exposure
<= 20 (Very Low)
21 - 40 (Low)
41 - 60 (Moderate)
61 - 80 (High)
81 - 100 (Extreme)
Critical Facilities
US Census Community Boundary (Borough, Census Designated Place, or Incorporated Place)
Population Center
Highway
Road
River/Stream
Waterbody
Map Projection: Alaska Albers NAD 1983
Map Scale: 1:170,000
City of Cordova
Power Creek
Government Slough
Lake Elsner
Glacier River
EYAK LAKE ROAD
Eyak Lake
Orca Inlet
POINT WHITSHED ROAD
Eyak River
COPPER RIVER HIGHWAY
Copper River Bay
Gulf of Alaska
0 1 2 3 4 5
Miles
AKDOT, 2024; US Census TigerLine, 2021; Schmidt et al., 2024
Service Layer Credits: World Ocean Base: Esri, Garmin, NaturalVue
World Light Gray Canvas Base: Esri, HERE, Garmin
World Ocean Base: Esri, GEBCO, Garmin, NaturalVue
AECOM
City of Cordova 2025
Local Hazard Mitigation Plan
WILDFIRE EXPOSURE – OVERVIEW
Figure 13a



AKDOT, 2024; US Census TigerLine, 2021; Schmidt et al., 2024
Service Layer Credits: World Ocean Base: Esri, Garmin, NaturalVue
World Light Gray Canvas Base: Esri, HERE, Garmin
World Ocean Base: Esri, GEBCO, Garmin, NaturalVue

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Local Hazard Mitigation Plan

WILDFIRE EXPOSURE – POPULATED AREAS

Figure 13b

APPENDIX C—DRAFT MITIGATION ACTIONS

Table C-1: Summary of Draft Mitigation Actions

No.	Project Name	Hazard Mitigated
1	Cordova Center Backup Generator	All
2	Update City Emergency Plans	All
3	Cordova's Mapping System Updates	All
4	Public Awareness	All
5	Complete Communications Trailor	All
6	Community Resiliency Hubs	All
7	Heavy Equipment for Snow/Debris Removal	Avalanche, Earthquake, Flood, Landslide, Severe Weather, Tsunami
8	Avalanche Mapping	Avalanche
9	Avalanche Events Record-Keeping	Avalanche
10	Sheridan Glacier and Sheridan River Studies	Climate Change. Erosion, Flood
11	Repair, Replace, and Maintain Storm Drain Systems	Climate Change, Erosion, Flood, Severe Weather
12	Cordova Water and Sewer Master Plan Update	Drought, Flood
13	Water System Vulnerabilities	Drought
14	Building Inspectors	Earthquake
15	Engineering Assessment of Earthquake Vulnerability	Earthquake
16	Assess and Retrofit Buildings	Earthquake
17	Encourage Community Partners in Preparation Activities	Earthquake, Tsunami
18	Stabilize Break Water Avenue	Erosion, Severe Weather, Tsunami
19	Power Creek Road Slope Stabilization and Repairs	Erosion, Landslide

No.	Project Name	Hazard Mitigated
20	Setbacks for New Structures	Erosion, Flood
21	Six-Mile Subdivision Drainage System	Flood
22	Continue to Comply with NFIP and Facilitate FIRM Updates	Flood
23	Hospital Flood Proofing	Flood
24	Complete Watershed Mapping	Flood
25	Structure Elevation and/or Relocation	Flood
26	Update and Replace Existing Streamflow and Rainfall Gauges	Flood
27	Funding for Riverbank Protection	Flood
28	Conditional Ownership and Management of Eyak Lake Weir	Flood
29	Meals Lake Dam Repairs	Flood, Drought
30	Identify and Organize Local Resources	Hazardous Materials, Technilogical / Cyber Threat
31	Hazardous Material Trainings	Hazardous Materials
32	Hazardous Material Drills and Exercises	Hazardous Materials
33	Continue to Participate in StormReady	Severe Weather
34	Continue to Participate in TsunamiReady	Tsunami
35	Update and Expand Communications	Tsunami
36	Fire and Emergency Service Vehicles, Training, and Equipment	Wildfire
37	Water Usage and Filtration Limits	Volcano
38	Ash Masks	Volcano

Table C-2: Draft Mitigation Actions

1. Cordova Center Backup Generator	
Overview	The Cordova Center is a multi-use facility which includes the library, historical museum, municipal offices, performance and theater space, and conference and meeting room spaces. During climate hazards and emergencies, the Cordova Center can provide emergency shelter if equipped with backup generator to ensure operation during outages. This project aims to investigate the details necessary to provide a backup generator for the Cordova Center and seek funding for this project.
Hazards	All
Goals	1, 2, 5
Asset Type	Cordova Center (Existing)
Benefits and Costs	Costs are associated with staff time for research and grant funding application, initial purchase of the generator and installation, as well as fuel, maintenance, and annual testing. Costs are also associated with the expected life cycle of the generator (e.g., between 20 and 30 years if maintained). Benefits including creating safer communities, speeding up recovery, and addressing multiple hazards.
2. Update City Emergency Plans	
Overview	This project is revised Projects E-4 and T/S-4 from the 2018 LHMP, which has been expanded from its original scope relating to earthquakes and tsunamis primarily to cover all hazards. The relevant City Emergency Plans include the current Emergency Operations Plan, Incident Commend structure, Cordova Continuity of Operations Plan, and personal Responder READY courses, among others.
Hazards	All
Goals	1, 2, 3, 4, 5
Asset Type	Multiple
Benefits and Costs	Costs are associated with staff time to complete the updates. Benefits include creating a safer community, speeding up recovery, lessening the financial impact of hazards, increasing public awareness, strengthening community partnerships, and addressing multiple hazards.
3. Cordova's Mapping System Updates	
Overview	This project is revised Projects A/L-1 and A/L-5, which prohibit construction in avalanche zones and install warning signage in mapped landslide zones. These projects have been expanded to include a more comprehensive mapping project addressing multiple hazards, which includes the official City Zone Map and adding a geologic layer to the mapping system. It also includes updating construction prohibited areas and installing signage as appropriate in hazard zones, such as avalanche, flood, and landslide.

Hazards	All
Goals	1, 2, 3, 4, 5
Asset Type	Multiple
Benefits and Costs	Costs are associated with staff time to complete the mapping projects, and equipment and materials for signage. Benefits include creating a safer community, speeding up recovery, lessening the financial impact of hazards, increasing public awareness, strengthening community partnerships, and addressing multiple hazards.
4. Public Awareness	
Overview	This project is revised Projects FLD-10, SW-2, SW-3, WF-3, A/L-6, VAF-1, and TPHH-2, which described public information efforts for each hazard individually. These projects have been merged to cover multiple hazards and focus on increasing public knowledge about hazards impacting property owners and visitors to Cordova. This project relates to continued use of existing materials and expansion of the distribution of brochures, pamphlets, or use of the City website or other methods of communication for all hazards. The project also includes special awareness activities such as Winter Weather Awareness Fair, avalanche awareness classes, "Shelter in Place," and Flood Awareness Week, as well as National Oceanic and Atmospheric Administration Weather Radio.
Hazards	All
Goals	1, 5
Asset Type	Multiple
Benefits and Costs	Costs are associated with staff time to complete the public information and awareness campaigns, including equipment and materials for items such as pamphlets and brochures. Benefits include creating safer communities, speeding up recovery, lessening the financial impacts, and increasing public awareness.
5. Complete Communications Trailer	
Overview	The City of Cordova Communications Trailer, owned by the Cordova Telecom Cooperative, is a mobile unit designed to support emergency and temporary communication needs, and is equipped with various communication tools including satellite phones, radios, and internet connectivity to ensure reliable communication during emergencies of events when regular infrastructure might be compromised. This project is to coordinate with the Cordova Telecom Cooperative to complete the interior installation of the City of Cordova Communications Trailer.
Hazards	All
Goals	1, 2, 3, 4, 5
Asset Type	Communications Trailer (New)

Benefits and Costs	Costs are associated with staff time to coordinate with Cordova Telecom Cooperative. Benefits include creating a safer community, speeding up recovery, lessening the financial impact of hazards, increasing public awareness, strengthening community partnerships, and addressing multiple hazards.
6. Community Resiliency Hubs	
Overview	Community resiliency hubs in Alaska are designed to support local communities in preparing for, responding to, and recovering from various challenges, including natural disasters, climate change, and economic disruptions. This project identifies resources necessary to construct multifunctional facilities for shelter, emergency medical care, food distribution, storage of emergency supplies, and renewable energy to support the local energy grid to supplement or expand existing facilities.
Hazards	All
Goals	1, 2, 3, 4, 5
Asset Type	Community resiliency hubs (new)
Benefits and Costs	Costs are associated with staff time for research and securing funding, coordination with State and other relevant entities, and costs of equipment and materials, if necessary. Benefits include creating a safer community, speeding up recovery, lessening the financial impact of hazards, increasing public awareness, strengthening community partnerships, and addressing multiple hazards.
7. Heavy Equipment for Snow / Debris Removal	
Overview	This project is revised Projects SW-5, T/S-7 from the 2018 LHMP. The project aims to evaluate and procure additional heavy equipment for snow and debris removal and other needs created by avalanches, landslides, severe weather, and tsunamis.
Hazards	Avalanche, Earthquake, Flood, Landslide, Severe Weather, Tsunami
Goals	1, 2, 5
Asset Type	Multiple
Benefits and Costs	Costs are associated with staff time to research equipment types and secure funding, purchase equipment, and training, if needed, for staff on how to use equipment. Costs are also associated with fuel and maintenance of equipment, and the expected life cycle of the equipment (e.g., 7–15 years depending on the type and maintenance). Benefits include creating a safer community, speeding up recovery, lessening the financial impact of hazards, and addressing multiple hazards.
8. Avalanche Mapping	
Overview	This project is revised Project A/L-7 from the 2018 LHMP. The Alaska Division of Geological & Geophysical Survey (DGGS) is conducting landslide and snow avalanche mapping and slope analysis for community-selected areas in and around Cordova. This project is specifically focused on completing the avalanche mapping and mitigation alternatives overview of other avalanche areas within the city of Cordova, including Power Creek and Shepard Point. This project differs from Project 4 in that is relates specifically to the DGGS-led mapping and recommendations rather than City-led mapping.

Hazards	Avalanche, Landslide
Goals	1, 4, 5
Asset Type	Multiple
Benefits and Costs	Costs are associated with staff time to collaborate with DGGS. Benefits include creating a safer community, lessening the financial impact of hazards, increasing public awareness, strengthening community partnerships, and addressing multiple hazards.
Project Example	Cordova avalanche and landslide hazards Project | Alaska Division of Geological & Geophysical Surveys
9. Avalanche Events Record-Keeping	
Overview	This project is revised Project A/L-8 from the 2018 LHMP. The Cordova Avalanche Center maintains records of avalanche observations, weather conditions, and accidents. These records are crucial for forecasting and understanding avalanche risks. This project expands the previous project to include public and private lands in Cordova. The project aims to continue current practice to maintain records of past and present avalanche events affecting Cordova.
Hazards	Avalanche
Goals	1, 4, 5
Asset Type	Multiple
Benefits and Costs	Costs are associated with staff time to complete the record-keeping. Benefits include creating a safer community, lessening the financial impact of hazards, increasing public awareness, and strengthening community partnerships.
Project Example	Cordova Avalanche Center - Homepage | AAIC
10. Sheridan Glacier and Sheridan River Studies	
Overview	The Sheridan Glacier has been experiencing melting which can lead to flooding conditions on transportation facilities, particularly access to the landfill. Glacier melting is influenced by and accelerated by climate change with warming temperatures. Melting glacial water can accumulate and create glacial lake outburst floods where water from a glacier-dammed lake is suddenly released causing significant flooding and impacting roads and infrastructure. This project aims to complete a study of the Sheridan River considering accelerated glacier melt to identify the feasibility of measures to protect transportation and landfill facilities, in collaboration with DOT & PF and the Native Village of Eyak.
Hazards	Climate Change, Erosion, Flood
Goals	1, 2, 4, 5
Asset Type	Transportation, Landfill (Existing)
Benefits and Costs	Costs are associated with staff time to coordinate with partners and participate in study. Benefits include creating a safer community, speeding up recovery, lessening the financial impact of hazards, and strengthening community partnerships.

11. Repair, Replace, and Maintain Storm Drain Systems	
Overview	This project is revised Projects FLD-17 and SW-6 from the 2018 LHMP. The project identifies areas requiring repair or replacement of existing storm drains systems, ditches, and surface hardening to control erosion caused by floods. The project includes consideration of nature-based solutions and other natural solutions.
Hazards	Climate Change, Erosion, Flood, Severe Weather
Goals	1, 2, 3, 5
Asset Type	Multiple
Benefits and Costs	Costs are associated with staff time, and/or hiring an engineer, to complete the assessment and any updates as needed (e.g., annually). Benefits include creating a safer community, speeding up recovery, lessening the financial impact of hazards, increasing public awareness, and strengthening community partnerships.
12. Cordova Water and Sewer Master Plan Update	
Overview	This project is revised from Projects FLD-2 and FLD-5 in the 2018 LHMP which focused on specific projects which would be included in this larger master plan update (the Alternative Water Source to Six-Mile Subdivision, and the Heney Creek Waterline). The Water and Sewer Master Plan Update will focus on expanded and reliable year-round water supply, as well as evaluation of water and sewer infrastructure and high priority needs.
Hazards	Drought, Flood
Goals	1, 2, 4, 5
Asset Type	Water and Sewer Infrastructure (Existing)
Benefits and Costs	Costs are associated with staff time to complete the plan update, plus capital expenditures and costs for environmental planning, design and review. Benefits include creating a safer community, speeding up recovery, lessening the financial impact of hazards, strengthening community partnerships, and addressing multiple hazards.
13. Water System Vulnerabilities	
Overview	In 2019, the city of Cordova experienced a significant drought which impacted its reservoirs, including the Eyak Lake and Meals Reservoir. This project focuses on identifying and implementing equipment upgrades, catchment upgrades, or additional pieces of equipment that might be needed during periods of low water levels, such as pumps and siphons, at reservoirs and lakes serving as the city's water supply.
Hazards	Drought
Goals	1, 2, 5
Asset Type	Water Supply and Distribution (Existing)

Benefits and Costs	Costs are associated with capital expenditures and maintenance costs. Benefits include creating a safer community, speeding up recovery, and lessening the financial impact of hazards.
14. Building Inspectors	
Overview	This project aims to secure funding for multiple people to become building inspectors and be qualified in post-disaster assessment of buildings through the National Earthquake Technical Assistance Program (NETAP) or similar programs.
Hazards	Earthquake
Goals	1, 2, 5
Asset Type	Multiple
Benefits and Costs	Costs are associated with fees for course enrollment, staff time to complete the trainings, and staff time to implement inspections. Benefits include creating a safer community, speeding up recovery, lessening the financial impact of hazards, increasing public awareness, and strengthening community partnerships.
Project Example	NETAP Training Course Descriptions, Contacts and Associated Materials | FEMA.gov
15. Engineering Assessment of Earthquake Vulnerbility	
Overview	This project is revised Project E-1 from the 2018 LHMP. If funding is available, the project would be to perform an engineering assessment of the earthquake vulnerability of each identified critical infrastructure owned by the City of Cordova.
Hazards	Earthquake
Goals	1, 2, 5
Asset Type	Multiple
Benefits and Costs	Costs are associated with staff time to complete the assessment and any updates as needed (e.g., annually). Benefits include creating a safer community, speeding up recovery, lessening the financial impact of hazards, increasing public awareness, and strengthening community partnerships.
Project Example	https://seismic.alaska.gov/download/ashsc_meetings_minutes/pr_2021-1_resilient_critical_infrastructure.pdf
16. Assess and Retrofit Buildings	
Overview	This project is Project E-3 in the 2018 LHMP. The project is to contract a structural engineering firm to assess the identified buildings and facilities to determine their structural integrity and develop a strategy to improve their earthquake resistance. The project also includes retrofitting or upgrading critical structures as recommended by a structural engineer. This project was not completed in 2018.
Hazards	Earthquake
Goals	1, 2, 5

Asset Type	Multiple
Benefits and Costs	Costs are associated with staff time to complete the feasibility and need analysis, and to procure and manage a contracted engineering firm. Benefits include creating a safer community, speeding up recovery, and lessening the financial impact of hazards.
17. Encourage Community Partners in Preparation Activities	
Overview	This project encourages the City to continue partnering with community organizations in evacuation preparation and other preparedness activities, such as the Great Alaksa Shakeout.
Hazards	Earthquake, Tsunami
Goals	1, 2, 4, 5
Asset Type	Multiple
Benefits and Costs	Costs are associated with staff time to coordinate and communicate with community organizations annually. Benefits include creating a safer community, speeding up recovery, lessening the financial impact of hazards, increasing public awareness, and strengthening community partnerships.
Project Example	The Great Alaska ShakeOut - Get Ready!
18. Stabilize Break Water Avenue	
Overview	Breakwater Avenue is located near the Cordova Harbor, an area susceptible to damage from erosion. Breakwater Ave is the only roadway that connects the north harbor to the rest of Cordova's road network. Protecting this connection is vital to ensuring that goods continue to flow through the port for decades to come. Doing so will ensure that this crucial freight corridor will withstand the industrial demands placed upon it and stand up to the effects of natural forces and climate change, which is currently taking its toll on the roadway in the form of tidal erosion and stormwater sheet flow erosion. This erosion has reduced the roadway's width over time, creating compounding effects on safety, efficiency, and resiliency. This project will stabilize the roadway and protect it from future erosion by creating a bulkhead along the full length of Breakwater Ave. This bulkhead will stabilize the roadway and provide protection from tidal erosion, and storm and tsunami surges by creating a solid barrier that will absorb and deflect these forces. Stormwater erosion will be eliminated as the newly created uplands behind the bulkhead incorporate modern stormwater collection systems. This system will collect the stormwater, separate contamination, such as oil and other pollutants, and then safely discharge them in a way that does not cause erosion.
Hazards	Erosion, Severe Weather, Tsunami
Goals	1, 2, 3, 5
Asset Type	Multiple

Benefits and Costs	Costs are associated with staff time for planning, design and engineering and also include maintenance costs for the project life expectancy (depending on materials used can be 30-50 years). Benefits include creating safer communities and lessening the financial impacts of hazards. The project addresses multiple hazards.
19. Power Creek Road Slope Stabilization and Repairs	
Overview	This project is revised Project FLD-6 from the 2018 LHMP. The Power Creek Hydro Facility was repaired as of the 2018 LHMP by Cordova Electric Power Network. This project is a revision of the FLD-6 to focus on the road to the Power Creek Hydro Facility. This project aims to identify locations susceptible to erosion and landslide hazards and complete slope stabilization and other repairs or preventative measures.
Hazards	Erosion, Landslide
Goals	1, 2, 5
Asset Type	Power Creek Hydro Facility (Existing)
Benefits and Costs	Costs are associated with staff time to complete the assessment of locations susceptible to erosion and landslide and capital expenditures for stabilization, repairs, or other preventative measures. Benefits include creating a safer community, speeding up recovery, and lessening the financial impact of hazards.
20. Setbacks for New Structures	
Overview	This project is revised Project FLD-15 from the 2018 LHMP. The project requires that all new structures in the Flood Zone be constructed according to National Flood Insurance Program (NFIP) requirements and set back from the river shoreline to lessen future erosion and flood concerns and costs. Flood Insurance Rate Maps (FIRMs) were completed in 2015, and the City will need to continuously monitor for updates and monitor new structure siting.
Hazards	Erosion, Flood
Goals	1, 2, 3, 5
Asset Type	Multiple (New)
Benefits and Costs	Costs are associated with staff time to monitor and assess new structure siting. Benefits include creating a safer community, speeding up recovery, lessening the financial impact of hazards, and insuring public buildings through the NFIP.
21. Six-Mile Subdivision Drainage System	
Overview	This project is revised Project FLD-1 from the 2018 LHMP. This project is unchanged from the 2018 LHMP and aims to complete comprehensive analysis of storm drain system at Six-Mile Subdivision.
Hazards	Flood
Goals	1, 2, 5
Asset Type	Drainage System (New)

Benefits and Costs	Costs are associated with staff time to complete the analysis and any updates as needed (e.g., annually). Benefits include creating a safer community, speeding up recovery, and lessening the financial impact of hazards.
22. Continue to Comply with NFIP and Facilitate FIRM Update	
Overview	There are multiple projects from the 2018 LHMP that were revised and combined for this 2025 LHMP, including FLD-3, FLD 9, FLD 13, FLD-14. This project aims to obtain flood insurance for City structures located within Flood Zone, comply with the NFIP, complete letters of map revision for FIRMS, investigate obtaining a community rating system rating to lower flood insurance rates, and track updates to FIRMs.
Hazards	Flood
Goals	1, 2,4, 5
Asset Type	Multiple
Benefits and Costs	Costs are associated with staff time to coordinate, track, and provide updates as needed (e.g., annually). Benefits include creating a safer community, speeding up recovery, lessening the financial impact of hazards, increasing public awareness, and strengthening community partnerships.
23. Hospital Flood Proofing	
Overview	This project is carried over from the 2018 LHMP (FLD-4). The project is to design and construct flood proofing for Cordova Hospital.
Hazards	Flood
Goals	1, 2, 5
Asset Type	Cordova Hospital (Existing)
Benefits and Costs	Costs are associated with staff time for planning, engineering, design, and review. Benefits include creating a safer community, speeding up recovery, and lessening the financial impact of hazards.
24. Complete Watershed Mapping	
Overview	This project is revised Project FLD-7 from the 2018 LHMP. This project expands the 2018 project by including a comprehensive watershed map that includes drainage patterns.
Hazards	Flood
Goals	1, 2, 3, 5
Asset Type	Multiple

Benefits and Costs	Costs are associated with staff time and/or hiring an engineer to complete the assessment and any updates as needed (e.g., annually). Benefits include creating a safer community, speeding up recovery, lessening the financial impact of hazards, increasing public awareness, and strengthening community partnerships.
Project Example	Alaska's Watershed Prioritization Map
25. Structure Elevation and/or Relocation	
Overview	This project is revised Project FLD-8 from the 2018 LHMP. The project aims to identify critical facilities and other structures that are in flood risk and/or tsunami hazard areas for elevating and/or relocating identified structures.
Hazards	Flood, Tsunami
Goals	1, 2, 5
Asset Type	Multiple
Benefits and Costs	Costs are associated with staff time to complete the assessment and, if identified for relocation, costs associated with planning, design, permitting, and capital expenditures for construction. Benefits include creating a safer community, speeding up recovery, lessening the financial impact of hazards, increasing public awareness, and strengthening community partnerships.
Project Example	Unalakleet Foothills Subdivision Master Plan 2011
26. Update and Replace Existing Streamflow and Rainfall Gauges	
Overview	This project is revised Project FLD-11 from the 2018 LHMP. The National Oceanic and Atmospheric Administration installed new stream flow and rainfall measuring gauges according to the 2018 LHMP. These gauges need to be maintained, updated, and replaced as needed.
Hazards	Flood
Goals	1, 2, 3, 4, 5
Asset Type	Multiple
Benefits and Costs	Costs are associated with staff time to complete repairs, updates, or other maintenance as needed (e.g., annually). Costs are also associated with staff time to coordinate with partners and data management. Benefits include creating a safer community, speeding up recovery, and lessening the financial impact of hazards.
Project Example	Remote Sensing of Streamflow in Alaska Rivers—New Technology to Improve Safety and Expand Coverage of USGS Streamgaging — FS 2019-3024
27. Funding for Riverbank Protection	
Overview	This is Project FLD-12 from the 2018 LHMP. The project is focused on securing grants/funds to implement riverbank protection methods.

Hazards	Flood
Goals	1, 2, 3, 4, 5
Asset Type	Multiple
Benefits and Costs	Costs are associated with staff time to complete grant applications. Benefits include creating a safer community, speeding up recovery, lessening the financial impact of hazards, increasing public awareness, and strengthening community partnerships.
28. Conditional Ownership and Management of Eyak Lake Weir	
Overview	The weir at the mouth of Eyak Lake is failing, which would cause the lake to drain and would impact salmon habitat downstream. The weir was owned by the State of Alaska's Division of Waters and Harbors that no longer exists. The Copper River Watershed Project and partners are looking for opportunities to address the failing weir to improve fish passage up and downstream of where the weir is located, while maintaining current water levels to protect important nearshore spawning sites for salmon, as well as maintain current property lines along the lakeshore. The project is to take over ownership and management of the new weir and is conditional upon a partner state or regional organization installing a new weir.
Hazards	Flood
Goals	1, 2, 3, 4 5
Asset Type	Eyak Lake Weir (Existing)
Benefits and Costs	Costs are associated with the management of the new weir, including staff time to coordinate with partners and annual maintenance costs. Benefits include creating a safer community, speeding up recovery, lessening the financial impact of hazards, increasing public awareness, and strengthening community partnerships.
Project Example	Eyak Lake Weir - Copper River Watershed Project
29. Meals Lake Dam Monitoring and Repair	
Overview	Meals Lake is an important water supply source for the City of Cordova. The dam was assigned a fair rating from the State of Alaska Department of Natural Resources Division of Mining, Land & Water Dam Safety and Construction Unit in 2017. Meals Lake Dam has visible seeps as noted in multiple years of assessment reports. It is assumed there are leaks occurring within the internal structure of the dam. The internal structure of the dam needs to be assessed to determine if components have begun to fail causing leaks and seeps. If so, they should be repaired accordingly. The spillway for the damn has experienced severe erosion and spalding. This has led to structural concerns about the spillway and its potential for failure. Spillway should be refinished to address these issues. A permanent depth gauge is needed for measuring the depth of the reservoir. Currently staff brings a stick to use for measuring which leads to inconsistent measurements and lack of ability to properly monitor the depth of the reservoir. Remote monitoring equipment is necessary for security and monitoring. Currently there is no way to monitor the dam and spillway without physically being at the dam. During inclement weather when it is most needed to be monitored we often cannot safely reach the dam. Cameras and depth sensors that can be monitored remotely are needed.

Hazard	Flood, Drought
Goals	1,2,3,4,5
Asset Type	Meals Lake Dam
Benefits and Costs	Cost are associated with repairs that are beyond that typical maintenance costs, including staff time to coordinate with partners. Benefits include creating a safer community, speeding up recovery, and lessening the financial impact of hazards.
30. Identify and Organize Local Resources	
Overview	This is Project TPHH-1 from the 2018 LHMP. The project focused on identifying and organizing local resources.
Hazards	Hazardous Materials, Technological / Cyber Threat
Goals	1, 2, 5
Asset Type	Multiple
Benefits and Costs	Costs are associated with staff time. Benefits include creating a safer community, speeding up recovery, lessening the financial impact of hazards, increasing public awareness, and strengthening community partnerships.
31. Hazardous Material Trainings	
Overview	This is Project TPHH-3 from the 2018 LHMP. The project is to encourage training, education, planning, and safety in the production, use, and transportation of oil and hazardous substances.
Hazards	Hazardous Materials
Goals	1, 2, 4, 5
Asset Type	Multiple
Benefits and Costs	Costs are associated with staff time to complete the trainings and updates as needed (e.g., annually). Benefits include creating a safer community, speeding up recovery, lessening the financial impact of hazards, increasing public awareness, and strengthening community partnerships.
Project Example	SEAPRO - Training ASTI Website
32. Hazardous Material Drills and Exercises	
Overview	This is Project TPHH-4 from the 2018 LHMP. The project is to continue participation in regional oil spill drills and exercises.
Hazards	Hazardous Materials
Goals	1, 2, 5

Asset Type	Multiple
Benefits and Costs	Costs are associated with staff time to coordinate and complete the drills and exercises annually. Benefits include creating a safer community, speeding up recovery, lessening the financial impact of hazards, increasing public awareness, and strengthening community partnerships.
Project Example	Spill Response Exercise Schedule
33. Continue to Participate in StormReady	
Overview	This is revised Project SW-1 from the 2018 LHMP. The City joined the StormReady program in 2012. This project focuses on renewal when required and continuation of the program to ensure Cordova meets StormReady standards.
Hazards	Severe Weather
Goals	1, 2, 3, 4 5
Asset Type	Multiple
Benefits and Costs	Costs are associated with staff time to complete the renewal and any reporting or other coordination as needed. Benefits include creating a safer community, speeding up recovery, lessening the financial impact of hazards, increasing public awareness, and strengthening community partnerships.
Project Example	StormReady® and TsunamiReady® in Alaska
34. Continue to Participate in Tsumani Ready	
Overview	This is revised Projects T/S-5 from the 2018 LHMP. The city joined the TsunamiReady program in 2012. This project focused on renewal when required and continuation in the program to ensure Cordova meets TsunamiReady standards. This project identifies and considers relocation of critical facilities located within the tsunami inundation areas, including the police/fire/jail and public safety building. The project also aims to complete signage installation at Shephard Point Road and Orca Road, and to identify and initiate construction of high ground parking, Americans with Disabilities Act–compliant shelter, and secure storage space outside of the tsunami inundation area.
Hazards	Tsunami
Goals	1, 2, 5
Asset Type	Multiple
Benefits and Costs	Costs are associated with staff time to complete the assessment. Benefits include creating a safer community, speeding up recovery, lessening the financial impact of hazards, increasing public awareness, and strengthening community partnerships.
Project Example	StormReady® and TsunamiReady® in Alaska

35. Update and Expand Communications	
Overview	This project aims to expand and update the notifications list for areas outside of the audible siren and includes adding an automated text notification or similar for issuing public alerts.
Hazards	Tsunami
Goals	1, 2, 5
Asset Type	Multiple
Benefits and Costs	Costs are associated with staff time to coordinate and maintain a communications list. Benefits include creating a safer community, speeding up recovery, lessening the financial impact of hazards, increasing public awareness, and strengthening community partnerships.
Project Example	Division of Homeland Security and Emergency Management | Alaska Emergency Alert System Plan
36. Fire and Emergency Service Vehicles, Training and Equipment	
Overview	This is revised Project WF-1 from the 2018 LHMP. The project aims to purchase new and update existing fire and emergency vehicles, and to continue to support the firefighting department with training and equipment.
Hazards	Wildfire
Goals	1, 2, 3, 4, 5
Asset Type	Fire (New)
Benefits and Costs	Costs are associated with staff time to research and coordinate funding, and capital expenditures for purchase of equipment. Costs are also associated with trainings and maintenance (annual). Benefits include creating a safer community, speeding up recovery, lessening the financial impact of hazards, increasing public awareness, and strengthening community partnerships.
37. Water Usage and Filtration Limits	
Overview	This is Project VAF-2 from the 2018 LHMP. The project is to determine water usage levels and filtration limits of current system to determine whether water rationing may be necessary in the event ashfall impacts drinking water supply.
Hazards	Volcano
Goals	1, 2, 5
Asset Type	Multiple
Benefits and Costs	Costs are associated with staff time to complete the assessment. Benefits include creating a safer community, speeding up recovery, lessening the financial impact of hazards, increasing public awareness, and strengthening community partnerships.

38. Ash Masks	
Overview	This is revised Project VAF-3 from the 2018 LHMP. The project aims to ensure a local supply of ash masks, ensure supplies are maintained and not expired, and store at emergency shelters.
Hazards	Volcano
Goals	1, 2, 5
Asset Type	Multiple
Benefits and Costs	Costs are associated with staff time to research and coordinate funding, and capital expenditures for purchase of supplies. Benefits include creating a safer community, speeding up recovery, and lessening the financial impact of hazards.

APPENDIX D—PLAN MAINTENANCE

Annual Review Tracker (2026-2029)

Task	Description
Disasters / hazards that occurred over the past year	
Critical facilities and infrastructure as well as other major assets damaged from disasters / hazards that occurred over the past year	
Mitigation-focused public outreach that was conducted over the past year	
Mitigation actions (measures and projects) that were implemented over the past year	
New and/or updated studies, reports, and maps that were published over the past year	
Changes made to 2025 LHMP over the past year or needed to be made to the future LHMP	
Additional information	

APPENDIX E - ADOPTION RESOLUTION