

## EXECUTIVE SUMMARY

Alaska experiences many severe natural hazards; therefore, it is vital to have a proactive and comprehensive hazard mitigation strategy. Mitigation measures save lives, reduce injuries, protect critical infrastructure, and decrease financial losses. They can range from public education and land use planning to specific construction actions that reduce hazard losses.

The 2023 Alaska State Hazard Mitigation Plan (Alaska SHMP) is the culmination of a cooperative partnership between the Alaska Division of Homeland Security and Emergency Management (DHS&EM), the Federal Emergency Management Agency (FEMA), and other state and federal agencies, education centers, and community agencies. The Alaska SHMP serves as the strategy document for Alaska's hazard mitigation program while also meeting FEMA requirements for a five-year State Hazard Mitigation Plan update under the Stafford Act. The Alaska SHMP is a living document that is updated annually as new information is obtained.

Successful mitigation is a state-wide effort involving an informed public, dedicated community leaders, and active agencies who jointly strive to prevent, reduce, or eliminate natural hazard impacts. DHS&EM acknowledges the importance of the participation of local boroughs and communities, governmental agencies, universities, subject matter experts, private sector partnerships, and the public, and have incorporated their contributions into this document. Alaska's hazards, vulnerabilities, and mitigation strategy are incorporated into this plan along with data accumulated from 106 approved local, multi-jurisdictional, and tribal hazard mitigation plans.

Based on the results of the risk assessment (Chapter 4), and review of the goals identified in past SHMPs, the Alaska SHMP Task Force revised and streamlined the goals for this 2023 Alaska SHMP update:

- Goal 1: Increase public awareness about the risks from and resilience to the following hazards: cryosphere and permafrost degradation, earthquake, flood and erosion, ground failure, tsunami and seiche, volcano, severe weather, wildland and community fire, and high hazard potential dams.
- Goal 2: Identify locations and State of Alaska (State) critical facilities (CFs) that are vulnerable to the following hazards: cryosphere and permafrost degradation, earthquake, flood and erosion, ground failure, tsunami and seiche, volcano, severe weather, wildland and community fire, and high hazard potential dams; and support local and tribal communities through technical and/or financial assistance in their efforts to do the same.
- Goal 3: Implement projects to reduce risks and increase resilience to the following hazards: cryosphere and permafrost degradation, earthquake, flood and erosion, ground failure, tsunami and seiche, volcano, severe weather, wildland and community fire, and high hazard potential dams; and support local and tribal communities through technical and/or financial assistance in their efforts to do the same.

This 2023 Alaska SHMP update considers the following population and critical facilities:

Table ES-1 shows the population of Alaska from April 2020 to July 2022 with population changes and net migration by economic region.

**Table ES-1: Population of Alaska by Economic Region, Borough, and Census Area, 2010 - 2022**

Area Name	Census April 2010	Census April 2020	Estimate July 2021	Estimate July 2022	Natural Increase		Net Migration		Population Change		Average Annual	
					(Births-Deaths)		(In-Out Migrants)				Growth Rate (Percent)	
					2010– 2020	2020– 2022	2010– 2020	2020– 2022	2010– 2020	2020– 2022	2010– 2020	2020– 2022
Alaska	710,231	733,391	736,105	736,556	67,000	8,222	-43,840	-5,057	23,160	3,165	0.32	0.19
Anchorage/ Matanuska-Susitna Region	380,821	398,328	399,496	401,562	36,349	4,191	-18,842	-957	17,507	3,234	0.45	0.36
Anchorage, Municipality of	291,826	291,247	290,410	289,810	28,113	3,137	-28,692	-4,574	-579	-1,437	-0.02	-0.22
Matanuska-Susitna Borough	88,995	107,081	109,086	111,752	8,236	1,054	9,850	3,617	18,086	4,671	1.84	1.90
Gulf Coast Region	78,631	81,619	81,700	82,481	4,821	466	-1,833	396	2,988	862	0.37	0.47
Chugach Census Area	6,684	7,102	7,028	7,013	497	83	-79	-172	418	-89	0.61	-0.56
Copper River Census Area	2,955	2,617	2,637	2,619	126	-17	-464	19	-338	2	-1.21	0.03
Kenai Peninsula Borough	55,400	58,799	59,108	60,017	2,833	253	566	965	3,399	1,218	0.60	0.91
Kodiak Island Borough	13,592	13,101	12,927	12,832	1,365	147	-1,856	-416	-491	-269	-0.37	-0.92
Interior Region	112,021	109,425	111,552	110,588	12,636	1,849	-15,232	-686	-2,596	1,163	-0.23	0.47
Denali Borough	1,826	1,619	1,658	1,645	101	29	-308	-3	-207	26	-1.20	0.71
Fairbanks North Star Borough	97,581	95,655	97,729	96,747	11,645	1,747	-13,571	-655	-1,926	1,092	-0.20	0.50
Southeast Fairbanks Census Area	7,026	6,808	6,897	7,046	610	86	-828	152	-218	238	-0.32	1.53
Yukon-Koyukuk Census Area	5,588	5,343	5,268	5,150	280	-13	-525	-180	-245	-193	-0.45	-1.63
Northern Region	26,445	28,870	28,342	27,774	3,837	555	-1,412	-1,651	2,425	-1,096	0.88	-1.72
Nome Census Area	9,492	10,046	9,715	9,682	1,418	228	-864	-592	554	-364	0.57	-1.64
North Slope Borough	9,430	11,031	11,033	10,746	1,164	161	437	-446	1,601	-285	1.56	-1.16
Northwest Arctic Borough	7,523	7,793	7,594	7,346	1,255	166	-985	-613	270	-447	0.35	-2.62
Southeast Region	71,664	72,286	72,683	72,218	3,382	159	-2,760	-227	622	-68	0.09	-0.04
Haines Borough	2,508	2,080	2,621	2,575	30	3	-458	492	-428	495	-1.87	9.45

Area Name	Census April 2010	Census April 2020	Estimate July 2021	Estimate July 2022	Natural Increase		Net Migration		Population Change		Average Annual Growth Rate (Percent)			
					(Births-Deaths)		(In-Out Migrants)		2010– 2020	2020– 2022	2010– 2020	2020– 2022	2010– 2020	2020– 2022
					2010– 2020	2020– 2022	2010– 2020	2020– 2022						
Hoonah-Angoon Census Area	2,149	2,365	2,357	2,349	47	-3	169	-13	216	-16	0.96	-0.30		
Juneau, City and Borough of	31,275	32,255	32,237	32,202	1,860	137	-880	-190	980	-53	0.31	-0.07		
Ketchikan Gateway Borough	13,477	13,948	13,930	13,762	657	24	-186	-210	471	-186	0.34	-0.60		
Petersburg Borough	3,203	3,398	3,376	3,357	132	2	63	-43	195	-41	0.59	-0.54		
Prince of Wales-Hyder Census Area	6,172	5,753	5,747	5,720	254	-19	-673	-14	-419	-33	-0.70	-0.26		
Sitka, City and Borough of	8,881	8,458	8,408	8,350	287	24	-710	-132	-423	-108	-0.49	-0.57		
Skagway Borough, Municipality of	968	1,240	1,206	1,146	55	4	217	-98	272	-94	2.46	-3.50		
Wrangell, City and Borough of	2,369	2,127	2,102	2,084	20	-17	-262	-26	-242	-43	-1.08	-0.91		
Yakutat, City and Borough of	662	662	699	673	40	4	-40	7	0	11	0.00	0.73		
Southwest Region	40,649	42,863	42,332	41,933	5,975	1,002	-3,761	-1,932	2,214	-930	0.53	-0.97		
Aleutians East Borough	3,141	3,420	3,586	3,685	69	9	210	256	279	265	0.85	3.32		
Aleutians West Census Area	5,561	5,232	5,118	5,003	192	27	-521	-256	-329	-229	-0.61	-1.99		
Bethel Census Area	17,013	18,666	18,485	18,207	3,149	552	-1,496	-1,011	1,653	-459	0.93	-1.11		
Bristol Bay Borough	997	844	824	800	27	5	-180	-49	-153	-44	-1.66	-2.38		
Dillingham Census Area	4,847	4,857	4,729	4,673	615	72	-605	-256	10	-184	0.02	-1.72		
Kusilvak Census Area	7,459	8,368	8,163	8,158	1,742	323	-833	-533	909	-210	1.15	-1.13		
Lake and Peninsula Borough	1,631	1,476	1,427	1,407	181	14	-336	-83	-155	-69	-1.00	-2.13		

Source: Alaska Department of Labor and Workforce Development. 2023.

**Table ES-2: State-Owned Facility Types, Counts, and Estimated Values**

State Facility Type	Count	Estimated Value
Airports	53	\$1,903,146,376
Corrections	154	\$820,515,116
Education	37	\$215,845,525
Emergency Services	58	\$30,092,700
Healthcare/Nursing Homes/Protected Populations	64	\$811,938,925
Law Enforcement	62	\$177,786,920
Libraries & Museums	3	\$143,425,000
Maintenance	380	\$637,851,010
Office Facilities	864	\$2,492,806,048
Ports & Harbors	46	\$47,254,100
<b>Total</b>	<b>1,721</b>	<b>\$7,280,661,720</b>

Notes: State Risk Management Office. Data include estimated values of insured state assets.

**Table ES-3: Transportation Facilities**

Facility Type	Count
Airports	289
Bridges	1,272
Ferry Terminals	39
Harbors	149
Maintenance Facilities	81
Ports	13
Railroad Facilities	14
<b>Total</b>	<b>1,857</b>

Notes: State-wide transportation facilities with various ownership (duplicates removed from table above, but comprehensive value information is not available). Numbers include state-owned and other ownership for airports, ferry terminals, and harbors.

**Table ES-4: Transportation Route Mileages**

Facility Type	Miles
Roads	14,231
Alaska Railroad	695
<b>Total</b>	<b>14,926</b>

**Table ES-5: Local Community Critical Facilities**

Facility Type	Count	Estimated Value
Bridges/Culverts	3	\$2,000,000
Community	1,418	\$82,952,000

<b>Facility Type</b>	<b>Count</b>	<b>Estimated Value</b>
Education	331	\$127,500,829
Emergency	330	\$4,446,110
Government	568	\$26,083,000
Health	205	\$16,963,365
Housing	149	\$1,130,000
Transportation	10	\$44,594,857
Utilities	2,791	\$157,952,536
<b>Total</b>	<b>5,805</b>	<b>\$463,622,697</b>

Notes: Local community critical facility data are incomplete and may include duplicate data from state-owned critical facilities. This information has been collected from historical inventories and local and tribal hazard mitigation plans. Estimated values are not available for most communities and are therefore incomplete.

**Table ES-6: Statewide Snapshot of Vulnerability and Prioritized Mitigation Actions**

Hazard Type	# of Critical Facilities	Est. Value of Critical Facilities	Population	Housing Units	Recent Development	Planned Development	Multi-Hazard Mitigation Actions	Priority Mitigation Actions
Glacier	108	\$322,429,922	24,832	12,336	Bridge, road, airport, ports and harbor, trails replacement, improvement, reconstruction, and new construction; planning, maintenance, research, training, preservation.	Bridge, road, airport, ports and harbor, trails replacement, improvement, reconstruction, and new construction; planning, maintenance, research, training, preservation.	Mitigation Planning Database Expansion; Local and Tribal Hazard Mitigation Planning Support; Local and Tribal Community Mitigation Strategies Link-Up to State Mitigation Strategy; Risk Map Expansion; Alaska Climate Change Impact Mitigation Program Expansion; Alaska Statewide Digital Elevation Model Update; Statewide Transportation Facilities Comprehensive Dataset Expansion; UAF/SNAP Database Expansion; Expansion of SCERP Program; State Critical Facility Rapid Visual Screenings Expansion; State Critical Facility Structural Hardening Assessments; Rural Resilience Workshop Expansion	
Avalanche	9	\$7,367,000	2,751	1,365				Avalanche Susceptibility Map Expansion
Permafrost	1,009	\$5,094,563,254	502,395	218,391				
Earthquake	1,704	\$7,229,826,803	727,780	323,204				Continuation of Building Safety month; Increase Awareness of the Shakeout Program/Drill
Flood (coastal)	787	\$4,483,814,145	248,422	118,046				Coastal Community Flood Assessment Expansion; Shoreline Change Mapping Expansion; Coastal and Riverbank Stabilization Program; National Flood Insurance Program Expansion
Flood (riverine)	215	\$693,021,479	75,124	32,755				Shoreline Change Mapping Expansion; Flood Buyout Expansion; Coastal and Riverbank Stabilization Program; National Flood Insurance Program Expansion; Wetland Map Expansion; Wetlands Action Plan Templates
Erosion	2	\$950,000	16,372	5,535				Erosion Forecast Mapping Expansion; Shoreline Change Mapping Expansion
Ground failure (landslide)	92	\$165,206,482	14,688	7,345				Landslide Susceptibility Map Expansion
Tsunami (seiche)	114	\$428,785,304	118,890	55,445				Tsunami Inundation Mapping Program Expansion; Tsunami Operations Workshop Expansion; TsunamiReady Expansion
Volcano (ash)	1,077	\$5,422,889,421	591,100	326,199				Increase Instrumentation and Data Accessibility for the National Volcano Early Warning System; Volcano Awareness Month
Severe weather	1721	\$7,220,661,720	736,566	326,200				StormReady Expansion
Wildland Fire	1,720	\$7,276,944,939	736,566	329,199				Wildfire Exposure Map Expansion; State Critical Facility Defensible Space Assessments; Hazard Fuel Reduction Program Expansion; Community Wildfire Protection Plan Outreach Expansion; Alaska Firewise Expansion
High-Hazard Potential Dams	26	unknown	4,000	unknown				Inundation Mapping Quality and Program Expansion for HHPD; Complete HHPD Failure Dataset; HHPD Remedial Investigations and Repair

See Section 4 for statewide risk detail for each hazard and Table 4.3-1 for Local Jurisdiction Probability and Magnitude.

All hazards identified have a high probability of occurrence depending on location.

See Table 4.4-1 for details regarding historic and planned development projects.