

**U.S. Department of Homeland Security
Federal Emergency Management Agency
National Exercise Program**

**National Exercise Program
Capstone Exercise 2014
Scenario Ground Truth**

U.S. Department of Homeland Security Trusted Agents Only

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3 GENERAL INFORMATION

3.1 Purpose

The purpose of this document and associated annexes is to establish a single, unified scenario and ground truth that is scientifically plausible and maximizes the opportunity for all National Exercise Program Capstone Exercise shareholders to perform agency-specific objectives.

3.2 National Exercise Program Capstone Exercise 2014 Overview

The Post-Katrina Emergency Management Reform Act requires that the Administrator of the Federal Emergency Management Agency periodically, but not less than biennially, conducts national exercises to test and evaluate the Nation's ability to detect, disrupt, and prevent catastrophic acts of terrorism or to respond to and recover from catastrophic incidents. The National Exercise Program Capstone Exercise 2014 will serve as the culminating event for the 2013-2014 National Exercise Program cycle, engaging the whole community to address all four Principals' Objectives, associated core capabilities, and exercise-specific objectives.

National Exercise Program Capstone Exercise 2014 will focus on the Nation's continuity, mitigation, emergency response, and disaster recovery capabilities. The Capstone Exercise will link several existing National Exercise Program exercises, which are discussed below. A key component event, Alaska Shield 2014, will provide the core framework for the Capstone Exercise. Sponsored by the State of Alaska, Alaska Shield 2014 commemorates the 50th anniversary of the 1964 Great Alaskan Earthquake, which resulted in significant damage and triggered a tsunami that affected the greater Pacific Northwest. The Capstone Exercise will also build upon several preparedness activities sponsored by other departments and agencies that are designed to educate and prepare officials and representatives across the whole community for complex, large-scale disasters and emergencies.

Events within the Capstone Exercise are aligned with the four Principals' Objectives of the 2013-2014 National Exercise Program cycle and examine the collective ability of the Nation to coordinate and implement risk assessments, core capabilities, and plans across four mission areas: prevention, mitigation, response, and recovery.

National Exercise Program Capstone Exercise 2014 will involve stakeholders in emergency management and homeland security from all levels of government, non-governmental organizations, the private sector, and select representatives from the international community. The Capstone Exercise will focus on the Nation's ability to respond to and recover from a catastrophic incident using the National Response Framework, National Disaster Recovery Framework, and other applicable plans. Maximizing available support resources, the Capstone Exercise will use pre-selected whole-community exercises that will progress from initial response and recovery and culminate with an in-depth examination of long-term recovery. Linking these exercises under the National Exercise Program Capstone Exercise 2014 construct provides a single exercise environment for operational management, resource allocation, and decision-making.

3.3 Principals' Objectives

1. Exchange intelligence, information, data, or knowledge to enable timely and informed decision-making prior to and during an incident that threatens the security of the Nation.
2. Identify threats and hazards and share prompt, reliable, and actionable risk information with the public, including actions to be taken and assistance made available during the onset of any hazard that threatens the security of the Nation.
3. Establish and maintain a unified and coordinated operational structure and process, capable of identifying, prioritizing, and delivering resources across all hazards and lead-federal agency authorities, including catastrophic incidents where a Stafford Act declaration is not likely and domestic response to foreign nations overwhelmed by disaster.
4. Establish and maintain plans, authorities, responsibilities, and coordination capabilities that support the recovery of local communities affected by catastrophic disasters.

3.4 Capstone Exercise 2014 Objectives

1. Assess the ability of local, state, tribal, federal, and other whole community officials to exchange intelligence and information and achieve common and accurate situational awareness.
2. Demonstrate the ability of local, state, tribal, and federal government officials to establish and maintain coordinated risk communication measures following a catastrophic event in the United States.
3. Examine the ability of senior government officials to establish and promulgate initial response activities, establish recovery priorities, and allocate critical resources to affected communities in accordance with the National Response Framework, National Disaster Recovery Framework, and other applicable plans and frameworks.
4. Assess the ability of federal officials to activate continuity plans, perform their respective Primary Mission Essential Functions and Mission Essential Functions at alternate facilities, and plan for reconstitution operations in accordance with established continuity plans and directives.
5. Examine the National Disaster Recovery Framework and National Mitigation Framework and assess the capability of the whole community to implement recovery strategies and coordinate, support, and sustain long-term recovery efforts following a catastrophic event in the United States.

3.5 Exercise Structure

National Exercise Program Capstone Exercise 2014 uses several pre-existing whole-community exercises to maximize use of available resources. Silver Phoenix, a recovery-focused national exercise, will be threaded through these whole-community exercises and will culminate in a long-term recovery tabletop exercise to ensure a complete Capstone Exercise. Linked by a unified scenario and sequence of events, the Capstone Exercise will not be a series of five separate, unrelated exercises. This national-level exercise will be structured as a one-exercise/one-world concept for the purpose of enabling operational and resource allocation

decisions. The multi-component approach permits greater participation across the whole community and facilitates the examination of a wide range of policy and planning issues, including recovery operations, long-term recovery planning, and event-driven mitigation. Figure 1 illustrates the theme of each Capstone component.

Alaska Shield 2014 Focus: Alaska Earthquake and Tsunami Response/Recovery	Eagle Horizon 2014 Focus: Continuity of Operations	Silver Phoenix 2014 Focus: Long-Term Recovery
Ardent Sentry 2014 Focus: Alaska Earthquake Response/Recovery		
NUWAIX 2014 Focus: Nuclear Weapon Response and Retrieval		

Figure 1. Component Themes

Taken together, these efforts afford National Exercise Program Capstone Exercise 2014 participants an environment to examine the four Principals' Objectives, coordinate national-level play across the selected exercises, and implement a common national-level and whole community evaluation process. National Exercise Program component events include: Alaska Shield 2014, Ardent Sentry 2014, Nuclear Weapon Accident Incident Exercise 2014, Eagle Horizon 2014, and Silver Phoenix 2014. Table 1 provides a timeline for National Exercise Program Capstone Exercise 2014.

3.5.1 Alaska Shield 2014

- **Type:** Full-scale
- **Duration:** Seven days
- **Date:** Thursday, March 27, to Wednesday, April 2, 2014
- **Location:** Alaska (multiple locations)
- **Focus:** Alaska Shield 2014 commemorates the anniversary of the 9.2-magnitude 1964 Great Alaskan Earthquake, and replicates the earthquakes and corresponding tsunami effects, which resulted in significant damage and affected the Pacific Northwest. The exercise will emphasize disaster operations with the first portion of the exercise focusing on the collective ability to share information among local, state, tribal, federal, and other whole community officials; achieve common and accurate situational awareness; and communicate meaningful risk information to the public. As the exercise progresses, focus shifts to unified coordination essential to identifying short- and long-term recovery considerations.

3.5.2 Ardent Sentry 2014

- **Type:** Full-scale
- **Duration:** Seven days
- **Date:** Thursday, March 27, to Wednesday, April 2, 2014

- **Location:** Alaska, Colorado, and Mexico
- **Focus:** The U.S. Department of Defense has aligned key components of the annual Ardent Sentry exercise with Alaska Shield 2014, focusing on Defense Support to Civilian Authorities mission, Homeland Defense Mission Assurance, and Foreign Humanitarian Assistance/Disaster Response operations.

3.5.3 Nuclear Weapon Accident Incident Exercise 2014

- **Type:** Full-scale
- **Duration:** Three days
- **Date:** Tuesday, April 1, to Thursday, April 3, 2014
- **Location:** Vicinity of Grand Junction, Colorado
- **Focus:** Nuclear Weapon Accident Incident Exercise 2014 features an accident occurring to a secure transportation convoy of nuclear weapons within the Continental United States. Intelligence and national leadership will need to quickly determine the cause and significance of the accident. Although the accident is not the result of a terrorist attack, government officials will need to address multiple events simultaneously.

3.5.4 Eagle Horizon 2014

- **Type:** Full-scale
- **Duration:** Two days
- **Date:** Tuesday, April 1, to Wednesday, April 2, 2014
- **Location:** Department/Agency alternate facilities
- **Focus:** Eagle Horizon 2014 focuses on continuity of operations and reconstitution planning. Eagle Horizon requires federal departments and agencies to activate continuity plans and perform their Primary Mission Essential Functions and Mission Essential Functions during transition to, and while at, their primary alternate facilities. Departments and agencies are required to plan for reconstitution operations; however, there will be no operational aspects (e.g., full-scale movements of resources or establishing/activating additional facilities) associated with reconstitution planning during the Capstone Exercise.

3.5.5 Silver Phoenix 2014

- **Type:** Full-scale (Phase I) and Table Top Exercise (Phase II)

Phase I

- **Duration:** Seven days
- **Date:** Thursday, March 27, to Wednesday, April 2, 2014
- **Location:** National Capital Region

Phase II

- **Duration:** Three days
- **Date:** Tuesday, April 22, to Thursday, April 24, 2014
- **Location:** National Capital Region
- **Focus:** Silver Phoenix 2014 occurs throughout the Capstone Exercise, with recovery elements spread across all component events and culminating in a 3-day Table Top Exercise focused on long-term recovery issues. This exercise explores challenges associated with

examining, prioritizing, and conducting recovery activities involving multiple geographically dispersed, competing events using the National Disaster Recovery Framework. Participants will also consider potential outputs in support of the National Mitigation Framework.

Table 1. National Exercise Program Capstone Scenario Timeline

Date and Time	Description
Thursday, March 27, 2014	
7:00 a.m. Mountain Daylight Time/ 9:00 a.m. Eastern Daylight Time	AMALGAM MAKO Event I involving a Vessel of Interest that originated in Thailand and is enroute to Vancouver, BC, with a subsequent scheduled port of call in Seattle, WA.
9:00 a.m. Mountain Daylight Time/ 11:00 a.m. Eastern Daylight Time	North American Aerospace Defense Command Operation Noble Eagle event involving a Boeing 777 enroute to Seattle, WA, from Tokyo, JP.
10:10 a.m. Alaska Daylight Time/ 2:10 p.m. Eastern Daylight Time	An earthquake occurs in Alaska, lasting for nearly 5 minutes. The 9.2-magnitude earthquake is centered approximately 70 miles east of Anchorage and 50 miles west of Valdez at a depth of 16 miles.
10:11 a.m. Alaska Daylight Time/ 2:11 p.m. Eastern Daylight Time	A 20' tsunami hits Valdez, AK.
10:12 a.m. Alaska Daylight Time/ 2:12 p.m. Eastern Daylight Time	A 27' 3" tsunami hits Seward, AK.
10:13 a.m. Alaska Daylight Time/ 2:13 p.m. Eastern Daylight Time	A 19' 8" tsunami hits Homer, AK.
10:15 a.m. Alaska Daylight Time/ 2:15 p.m. Eastern Daylight Time	A 16' tsunami hits Cordova, AK.
10:40 a.m. Alaska Daylight Time/ 2:40 p.m. Eastern Daylight Time	A 6.1-magnitude aftershock occurs in Matanuska-Susitna Borough, AK, along the Castle Mountain Fault, west of Horseshoe Lake.
10:58 a.m. Alaska Daylight Time/ 2:58 p.m. Eastern Daylight Time	A 22' 7" tsunami hits Kodiak, AK.
1:00 p.m. Mountain Daylight Time/ 3:00 p.m. Eastern Daylight Time	North American Aerospace Defense Command Operation Noble Eagle event involving an Alaska Airlines aircraft.
12:40 p.m. Alaska Daylight Time/ 4:40 p.m. Eastern Daylight Time	A 1' 2" tsunami hits Unalaska, AK.
1:55 p.m. Alaska Daylight Time/ 5:55 p.m. Eastern Daylight Time	A 5.1-magnitude aftershock occurs in Matanuska-Susitna Borough, AK, along the Castle Mountain Fault, west of Horseshoe Lake.
2:34 p.m. Alaska Daylight Time/ 6:34 p.m. Eastern Daylight Time	A 7' tsunami hits Elfin Cove, AK (near Juneau, AK).
	Cyber attacks are expected throughout the exercise by members of anti-government organizations, such as Free Americans Against Socialist Tyranny and individuals sympathetic to their cause.
Friday, March 28, 2014	
5:30 a.m. Alaska Daylight Time/ 9:30 a.m. Eastern Daylight Time	A 6.9-magnitude aftershock occurs near Shemya, AK. This generates a small local tsunami.
5:30 a.m. Alaska Daylight Time/ 9:30 a.m. Eastern Daylight Time	A 1' local tsunami hits Unalaska, AK.
8:00 a.m. Alaska Daylight Time/ 12:00 p.m. Eastern Daylight Time	A 6.5-magnitude aftershock occurs near Kodiak, AK.
9:00 a.m. Alaska Daylight Time/ 1:00 p.m. Eastern Daylight Time	A 6.4-magnitude aftershock occurs northeast of Valdez, AK, which also affects Cordova, AK.
9:18 a.m. Alaska Daylight Time/ 1:18 p.m. Eastern Daylight Time	A 6.8-magnitude aftershock occurs near Ketchikan, AK.
9:45 a.m. Alaska Daylight Time/ 1:45 p.m. Eastern Daylight Time	A 6.9-magnitude aftershock occurs near Delta Junction, AK.

Table 1. National Exercise Program Capstone Scenario Timeline

Date and Time	Description
10:00 a.m. Alaska Daylight Time/ 2:00 p.m. Eastern Daylight Time	A 5.6-magnitude aftershock occurs 2 miles west of Cordova, AK, and creates a 16' local tsunami.
10:05 a.m. Alaska Daylight Time/ 2:05 p.m. Eastern Daylight Time	A 16' tsunami hits Cordova, AK.
1:00 p.m. Alaska Daylight Time/ 5:00 p.m. Eastern Daylight Time	A 6.4-magnitude aftershock occurs 15 miles south of Cordova, AK.
1:30 p.m. Alaska Daylight Time/ 5:30 p.m. Eastern Daylight Time	A 5.2-magnitude aftershock occurs 10 miles east of Cordova, AK.
1:30 p.m. Alaska Daylight Time/ 7:25 p.m. Eastern Daylight Time	A 6.8-magnitude aftershock occurs near Houston, AK.
Saturday, March 29, 2014	
9:15 a.m. Alaska Daylight Time/ 1:15 p.m. Eastern Daylight Time	A 6.8-magnitude aftershock occurs near Wasilla, AK.
9:56 a.m. Alaska Daylight Time/ 1:56 p.m. Eastern Daylight Time	A 7.5-magnitude aftershock occurs southwest of Valdez, AK. The aftershock will fracture the previously weakened slope of Mount Thomas, sending tons of rock, snow, dirt, and debris into Prince William Sound near Shoupe Bay. This generates a 10' to 15' local tsunami.
10:16 a.m. Alaska Daylight Time/ 2:16 p.m. Eastern Daylight Time	An 11' to 15' local tsunami hits Valdez, AK.
Sunday, March 30, 2014	
10:30 a.m. Alaska Daylight Time/ 2:30 p.m. Eastern Daylight Time	A 6.5-magnitude aftershock occurs near Kodiak, AK.
Monday, March 31, 2014	
9:00 a.m. PDT/ 12:00 p.m. Eastern Daylight Time	AMALGAM MAKO Event II involving a cruise ship collision with a merchant vessel off the coast of San Diego, CA. Two hours after departing Ensenada, MX, the Cruise Ship SHANGRI-LA collides with Merchant Vessel PUTNAM COUNTY southeast of San Clemente Island, 30 nautical miles north of the U.S./Mexico International Border.
9:50 a.m. PDT/ 12:50 p.m. Eastern Daylight Time	Cruise Ship SHANGRI-LA reports flooding and fire on board. Merchant Vessel PUTNAM COUNTY sustained minimal damage.
12:45 p.m. PDT/ 3:45 p.m. Eastern Daylight Time	Cruise Ship SHANGRI-LA passengers abandon ship.
Tuesday, April 1, 2014	
4:00 a.m. PDT/ 7:00 a.m. Eastern Daylight Time	Cruise Ship SHANGRI-LA crew abandons ship.
5:45 a.m. PDT/ 8:45 a.m. Eastern Daylight Time	Cruise Ship SHANGRI-LA sinks.
7:00 a.m. Mountain Daylight Time/ 9:00 a.m. Eastern Daylight Time	Traffic accident involving nuclear weapon transport convoy occurs on I-70 near Grand Junction, CO.
10:00 a.m. Eastern Daylight Time	Intel leads to Presidential order for activation of Continuity of Government Readiness Conditions-1.
12:00 p.m. Alaska Daylight Time/ 4:00 p.m. Eastern Daylight Time	A 6.4-magnitude aftershock occurs northeast of Valdez, AK.
TBD	North American Aerospace Defense Command Operation Noble Eagle event takes place in Northern Oregon and is not connected to any Alaska event.

4 ALASKA

4.1 2014 Alaskan Community Information

Figure 2 shows the initiating earthquake epicenter and the primary communities affected.

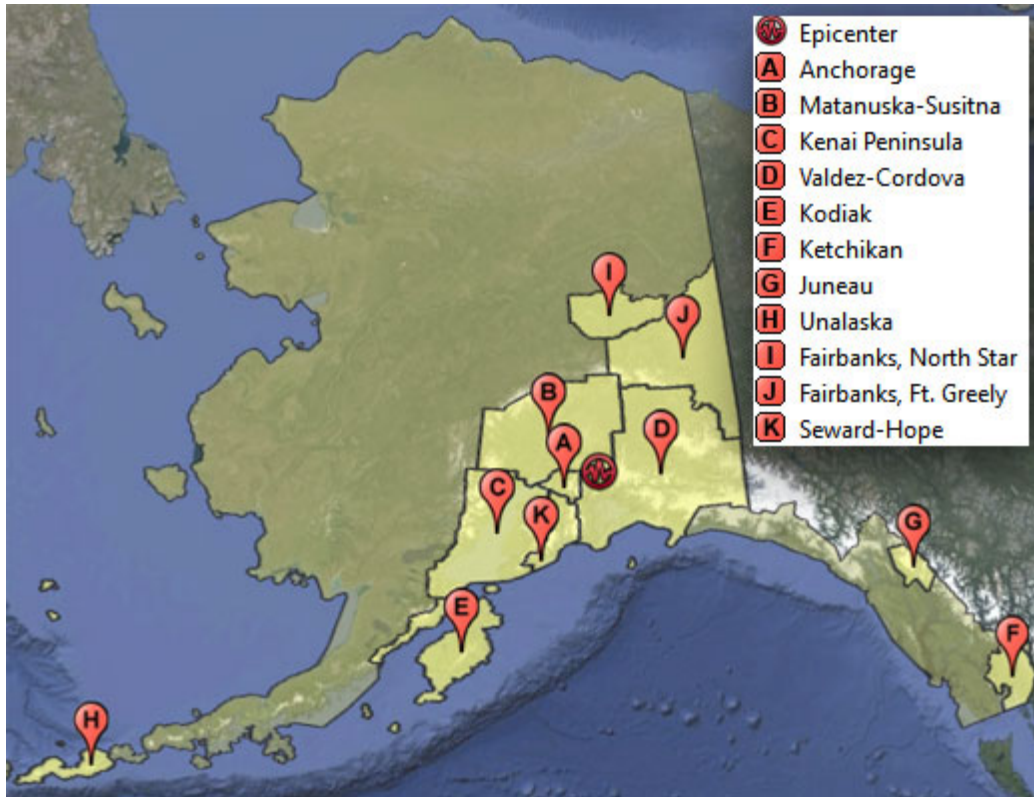


Figure 2. Earthquake Epicenter and Affected Communities

4.1.1 Southcentral Alaska

Table 2 provides community information for Southcentral Alaska based on 2010 and 2012 census data.

Table 2. Southcentral Alaska Community Information

Community	Population, 2012 Estimate	Average Temperature, March	Average Snowfall, Annual	Average Snowfall, March	Median Household Income	Population Under 5 Years (2010 census)	Population Over 65 Years	Total Housing Units	% Population Under Poverty Line
Southcentral Alaska									
Anchorage	298,610	19°F-35°F	69 in	10 in	\$76,495	21,961; 7.5%	21,139; 7.2%	113,032	7.7%
Matanuska-Susitna Borough	93,925	14°F-36°F	52 in	5.8 in	\$70,728	6,900; 7.8%	7,069; 7.9%	41,329	9.9%
Kenai Peninsula Borough	56,900 ¹	16°F-34°F	64 in	8.7 in	\$59,421	3,464; 6.3%	6,276; 11.3%	30,578	9.1%
Valdez-Cordova Combined ²	9,717	24°F-36°F	352 in (27 ft)	50 in	\$67,421	621, 5.9%	798, 8.3%	6,102	7.0%
Cordova	See above	22°F-38°F	80 in	8 in	See above	See above	See above	See above	See above
Kodiak Island Borough	14,239	27°F-39°F	77.6 in	12.3 in	\$70,976	1,151; 8.5%	915; 6.7%	5,303	11.5%

4.1.1.1 Anchorage

Anchorage is the most populated municipality in Alaska with a current population of around 300,000 and is located in Southcentral Alaska at the head of the Cook Inlet. It is a 3-hour flight from Seattle. Controlled airports include the state-owned Ted Stevens Anchorage International Airport and Lake Hood Float Plane Base, the municipality's Merrill Field, and U.S. Army and Air Force facilities. The Alaska Railroad connects Anchorage to Seward, Whittier, and Fairbanks (this is known as the Railbelt). The Port of Anchorage handles 85 percent of the general cargo for the Alaska Railbelt area. There are five terminal berths; three general cargo, and two petroleum products terminals with 3,488 linear feet of birthing space available.

¹ 2010 census data. 2012 census data unavailable for this area.

² The Census department combines Valdez and Cordova for reporting purposes. The combined community information is provided though the communities are distinct and geographically separate.

4.1.1.2 *Matanuska-Susitna Borough*

Matanuska-Susitna Borough, approximately 40 miles northeast of Anchorage, is comprised of the lush farmlands of the Matanuska and Susitna Valleys with a current population of 93,801. Low housing costs, the rural lifestyle, and a reasonable commute to Anchorage for employment and services has made the borough one of the fastest growing areas of Alaska in recent years. The area accesses both the Glenn and George Parks Highways. Commercial airlines serve the nearby Anchorage International Airport, but a local municipal airport supports private and chartered services. The Alaska Rail Road provides for delivery of ocean freight.

4.1.1.3 *Kenai Peninsula Borough*

Kenai Peninsula Borough is comprised of the Kenai Peninsula, Cook Inlet, and a large unpopulated area northeast of the Alaska Peninsula with a current population of about 57,000. The borough includes portions of the Chugach National Forest, Kenai National Wildlife Refuge, Kenai Fjords National Park, Lake Clark National Park, and Katmai National Park. The cities of Kenai and Soldotna are the population centers of the borough. The Kenai Peninsula, located 60 air miles south of Anchorage, is filled with stunning scenery, fascinating history, and a rich cultural heritage. The Kenai River is a major sport fishing location for Anchorage residents and tourists. The river is world-renowned for trophy salmon and trout fishing. The peninsula is well-traveled by sportsmen during summer months. The area has well-capitalized infrastructure including airports, roads, public schools, and energy-related facilities. The economy of the borough consists of heritage industries, including commercial fishing, mining, and timber, as well as tourism and petroleum industry activities. The natural beauty and recreational activities have led to a growing tourism industry with a well-developed list of attractions. Although many fishing boats are based in Kenai, it does not have a formal port and harbor. There are docks for offloading catch, but commercial fishing boats are generally moored offshore in the Kenai River.

4.1.1.4 *Valdez*

Valdez is located on the north shore of Port Valdez, a deep-water fjord in Prince William Sound. It lies 305 road miles east of Anchorage and 364 road miles south of Fairbanks with a current population of just over 4,000 residents. Valdez is a commercial and sport fishing port. Limited freight moves through Valdez bound for the interior of Alaska. Richardson Highway, the only overland route connecting Valdez to the rest of the Alaska roadway network, goes through Thompson Pass northeast of Valdez. Thompson Pass is the snowiest place in Alaska and is subject to avalanches. Sightseeing, viewing marine life and glaciers, sport fishing, and heliskiing support a large tourist industry. The community has been marked by a number of significant events: the 1964 Great Alaskan Earthquake, being chosen as the terminus of the Trans-Alaska Pipeline System, and the 1989 Exxon Valdez Oil Spill.

4.1.1.5 *Cordova*

Cordova is located at the southeastern end of Prince William Sound in the Gulf of Alaska with a current full-time population of about 2,300. 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. Cordova has a significant Eyak-Athabaskan population with an active village council. Commercial fishing is the main industry in Cordova. Half of all households in Cordova have at least one person involved in commercial fishing or processing.

4.1.1.6 Kodiak

Kodiak Island is located on the western side of the Gulf of Alaska with a current population of just over 14,000. It lies 252 air miles south of Anchorage (a 55-minute flight), and is a 3-hour flight from Seattle. The climate of the Kodiak Islands is dominated by a strong marine influence. There is little or no freezing weather, moderate precipitation, and frequent cloud cover and fog. Severe storms are common from December through February. Transportation to and from the island is provided by ferry service on the Alaska Marine Highway as well as local commercial airlines. Kodiak is a major commercial fishing center. Tourism, mainly those seeking outdoor adventure trips, is a lesser economic influence.

4.1.2 Southeast Alaska

Table 3 provides community information for Southeast Alaska based on 2010 and 2012 census data.

Table 3. Southeast Alaska Community Information

Community	Population, 2012 Estimate	Average Temperature, March	Average Snowfall, Annual	Average Snowfall, March	Median Household Income	Population Under 5 Years (2010 census)	Population Over 65 Years	Total Housing Units	% Population Under Poverty Line
Southeast Alaska									
Ketchikan Gateway Borough	13,779	33°F-44°F	37 in	3.4 in	\$59,736	903; 6.7%	1,367; 10.1%	6,166	10.3%
City and Borough of Juneau	32,556	28°F-61°F	88.8 in	11.6 in	\$78,947	1,982; 6.3%	2,635; 8.4%	13,055	6.4%

4.1.2.1 Ketchikan Gateway Borough/City of Ketchikan

Ketchikan Gateway Borough is located near the southernmost boundary of Alaska, in the Southeast Panhandle. It is comprised of the Cities of Ketchikan and Saxman with a current population of about 14,000. The area lies in the maritime climate zone noted for its warm winters, cool summers, and heavy precipitation. Ketchikan's economy is based upon tourism and fishing. Ketchikan serves as both an air and marine transportation hub for southern Southeast Alaska. The Ketchikan International Airport serves as both a gateway for Alaska Airlines jet service to and from Seattle, Juneau, and Anchorage.

4.1.2.2 City/Borough of Juneau

Juneau is located on the mainland of Southeast Alaska opposite Douglas Island. Juneau was built at the heart of the Inside Passage and has a current population of around 33,000. It lies 900 air miles northwest of Seattle and 577 air miles southeast of Anchorage. Juneau has a mild, maritime climate. As the capital of Alaska, government is the primary employer in Juneau, by a large margin. This includes municipal, state and federal government. The tourism industry is another large contributor to the local economy, at least on a part-time basis.

4.1.3 Other Participating Communities

Table 4 provides information for other participating communities based on 2010 and 2012 census data.

Table 4. Other Participating Community Information

Community	Population, 2012 Estimate	Average Temperature, March	Average Snowfall, Annual	Average Snowfall, March	Median Household Income	Population Under 5 Years (2010 census)	Population Over 65 Years	Total Housing Units	% Population Under Poverty Line
Other Participating Communities									
Aleutians West Census Area (Unalaska)	5,547	28°F-38°F	91.5 in	16.5 in	\$77,292	205; 3.7%	193; 3.5%	1,929	10.5%
Fairbanks North Star Borough	100,272	-19°F-+25°F	65 in	5 in	\$69,485	7,922; 8.1%	6,375; 6.5%	41,783	8.0%
North Pole	2,210	-19°F-+25°F	65in	5 in	\$71,250	213; 10.1%	105; 5.1%	916	5.7%
Fort Greely	539 ³	4°F-24°F	37 in	N/A	\$83,214	39; 7.2%	23; 4.3%	364	0%

4.1.3.1 Unalaska

Unalaska is a rapidly growing and culturally diverse community with a current population of over 4,700, and it is primarily focused on fishing and fish-processing activities. Almost all of the community's port facilities are on Amaknak Island, better known as Dutch Harbor or "Dutch." It is the largest fisheries port in the United States by volume caught. With about 225 rainy days a year, Unalaska is among the rainiest places in the United States.

4.1.3.2 Fairbanks

Fairbanks, located in the heart of Alaska's Interior, is the largest city in the interior region of Alaska and the second largest in the state with a current population of over 100,000. By air, Fairbanks is a short 45-minute flight from Anchorage, or 358 miles by road. Government services account for over one third of the employment. The University of Alaska Fairbanks and tourism are also major employers.

³ 2010 Census data. 2012 census data unavailable for this area.

4.1.3.3 *City of North Pole*

North Pole is located 14 miles southeast of Fairbanks on the Richardson Highway and 386 miles north of Anchorage. North Pole experiences seasonal temperature extremes; average March temperatures range from -19°F to +25°F. March snow fall averages are about 5 inches. Annual averages are typically 65 inches.

4.1.3.4 *Fort Greely*

Fort Greely is a U.S. Army launch site for anti-ballistic missiles located approximately 100 miles southeast of Fairbanks and located in the community of Delta Junction. It is also the home of the Cold Regions Test Center, as Fort Greely is one of the coldest areas in Alaska, and can accommodate cold, extreme cold, or temperate weather testing depending on the season.

4.2 Alaska Shield 2014 Start of Exercise (STARTEX) Conditions

4.2.1 Weather Conditions

- Real-world weather will be used.

4.2.2 Statewide Conditions in Alaska

- State Emergency Operations Center cold start, “Situation Normal.”
- All hospitals in the state are operating normally with full staff.
- The Alaska Department of Health and Social Services is dealing with a typical flu season with nothing out of the ordinary on the horizon.
- There are no significant events hindering normal operation for any of the communities involved in the exercise.

4.2.3 U.S. Department of Defense

- U.S. Department of Defense in Alaska, “Situation Normal.”
- Alaska’s active military forces are preparing for/currently participating in/recently concluded a major exercise event. They are fully staffed with no units deployed to contingency operations areas/arenas.
- U.S. Army Alaska helicopters are at 50-percent availability. All other Alaska-based Title 10 assets per real-world availability on Thursday, March 27.
- Alaska National Guard is preparing for a Multi-Unit Training Assembly weekend. Soldiers are scheduled to arrive at Camp Carroll and Kulis Air National Guard Base (Joint Base Elmendorf-Richardson) on Friday, March 28, and drill through the weekend.

4.2.4 Ports

The following outlines the status of the various ports throughout Alaska prior to the earthquake on Thursday, March 27.

4.2.4.1 *Port of Anchorage*

- Crews are performing routine maintenance around the port.
- Security is performing their regular duties.

- There are currently no cargo ships at the dock.
- One petroleum vessel at petroleum, oil, and lubricants #2 is discharging 75,000 barrels of petroleum for Ted Stevens Anchorage International Airport.

Schedule:

- Shipments are scheduled to arrive on Sunday, March 30, and Tuesday, April 1.

4.2.4.2 Nikiski Port

- One petroleum vessel has completed offloading 75,000 barrels of petroleum at Tesoro and is awaiting the pilot to depart to Anchorage.

4.2.4.3 Port of Homer

- The ferry is not in port.
- The Pioneer Dock is the lifeblood for the community as it provides for the offloading of approximately 90 percent of the fuel used by the community.
- The northern pier is critical for servicing two oil platforms.
- There is one residence on the Homer Spit.
- There are approximately 500 recreational boats in the harbor.
- There are five commercial fishing boats at the dock, and four are currently in bound.

Schedule:

- The ferry carrying people and cars from Kodiak is scheduled to arrive at 2:00 a.m. on Saturday, March 29, and depart again at 11:00 a.m. on Saturday, March 29.
- There are 5 to 10 commercial fishing landings at various unscheduled times each day, with approximately 50 people offloading.

4.2.4.4 Port of Cordova

- The ferry is not in the port; it leaves at 5:00 a.m. on March 27.
- There are currently no cruise ships at the dock.
- There are approximately 250 to 300 recreational boats in the harbor.

Schedule:

- The ferry is scheduled to arrive at 12:00 a.m. on Thursday, March 27, and leave again at 5:00 a.m. on Friday, March 28.

4.2.4.5 Port of Seward

- There is currently a coal ship in port.
- There are approximately 300 recreational boats in the small boat harbor.
- There are currently no cruise ships at the dock.
- There is little commercial fishing.

Schedule:

- The coal ship is scheduled to depart on Saturday, March 29.
- There are no cruise ships inbound for at least another month.
- There are currently no commercial fishing vessels inbound.

4.2.4.6 Port of Kodiak

- The container vessel, Horizon, is in port.

Schedule:

- On Friday, March 28; Monday, March 30; and Wednesday, April 2, the Kennicott Ferry, carrying people and cars, is scheduled to depart Whittier at 11:45 a.m., enroute to Chenega Bay with an estimated arrival at 1:15 p.m.

4.2.4.7 Port of Valdez

- The Alaska State Ferry Terminal is closed for inspection.
- There are currently no cruise ships at the dock.
- There are approximately 300 recreational boats.
- The U.S. Coast Guard will have the cutter, Long Island; two 45-foot ships; and two 25-foot ships in port with one trailer on land.
- There is no commercial fishing.
- There are no tanker vessels present at the Valdez Marine Terminal.

Schedule:

- There is an oil tanker enroute to the port due in on Saturday, March 29, at 5:00 a.m.
- There are no cruise ships inbound until mid April.

4.2.4.8 Port of Whittier

- There are currently no cruise ships in port.
- There are approximately 300 personal fishing and recreational boats in the harbor.

Schedule:

- Nothing is anticipated.

4.2.5 Airports

On a typical Thursday morning at approximately 10:15 a.m. Alaska Daylight Time, the Federal Aviation Administration Anchorage Air Route Traffic Control Center on average would control approximately 48 flights, of which 26 are air carriers, 9 are air taxis, 3 are general aviation, and 10 are military. Approximately 9 would operate in the oceanic environment and approximately 39 within radar-controlled domestic airspace.

Table 5 depicts the average number of arrivals and departures at airports within the State of Alaska on a typical Thursday morning.

Table 5. Average Arrivals and Departures at Regional Airports

Airport Name	Aircraft Arriving and Departing Average per hour	Average Instrument Flight Rules Arrival and Departure	Instrument Flight Rules Arrival and Departure Aircraft Composition	Average Visual Flight Rules Arrival and Departure	Visual Flight Rules Arrival and Departure Aircraft Composition
Ted Stevens Anchorage International Airport (ANC)	25	20	Air Carrier – 12 Air Taxi – 6 General Aviation – 1 Military – 1	5	Air Carrier – 0 Air Taxi – 1 General Aviation – 4 Military – 0
Fairbanks International Airport (FAI)	10	3	Air Carrier – 1 Air Taxi – 2 General Aviation – 0 Military – 0	7	Air Carrier – 0 Air Taxi – 3 General Aviation – 4 Military – 0
Juneau International Airport (JNU)	7	1	Air Carrier – 1 Air Taxi – 0 General Aviation – 0 Military – 0	6	Air Carrier – 0 Air Taxi – 5 General Aviation – 1 Military – 0
Kenai Municipal Airport (ENA)	4	2	Air Carrier – 0 Air Taxi – 1 General Aviation – 0 Military – 1	2	Air Carrier – 0 Air Taxi – 1 General Aviation – 1 Military – 0
Kodiak Airport (ADQ)	2	1	Air Carrier – 0 Air Taxi – 1 General Aviation – 0 Military – 0	1	Air Carrier – 0 Air Taxi – 1 General Aviation – 0 Military – 0
King Salmon Airport (AKN)	1	1	Air Carrier – 0 Air Taxi – 0 General Aviation – 0 Military – 1		Air Carrier – 0 Air Taxi – 0 General Aviation – 0 Military – 0

4.2.5.1 Ted Stevens Airport (Prior to the Event)

Runways:

- Runway 07R/25L – Fully operational
- Runway 07L/25 R – Fully operational
- Runway 15/33 – Fully operational

Tower structure/Air traffic control capability – Fully operational

Navigational aids:

- Nav aids/Instrument Landing System Runway 07R – Fully operational
- Nav aids/Instrument Landing System Runway 07L – Fully operational
- Nav aids/Instrument Landing System Runway 15 – Fully operational
- Nav aids/ Very High Frequency Omnidirectional Range/Distance Measuring Equipment – Fully operational

Lighting:

- Airfield Lighting Runway 07R (Approach/Runway/Taxiways) – Fully operational
- Airfield Lighting Runway 07L (Approach/Runway/Taxiways) – Fully operational
- Airfield Lighting Runway 15 (Approach/Runway/Taxiways) – Fully operational

Fuel:

- Petroleum tanks – Fully operational
- Ground fuel hydrants – Fully operational
- Fuel trucks – Fully operational

Fuel Storage:

- Contains 3 day supply for normal operations.
- Resupply daily by pipeline from the Port of Anchorage.

Parking:

- Parking maximum on ground/Working maximum on ground – No restrictions
- Slot Time Allocation/Aircraft Priority (Department of Defense/Federal Emergency Management Agency/Commercial) – No restrictions

Other:

- Material handling equipment – Fully operational
- Passenger operations – Fully operational
- Hangar status – No restrictions
- Crash/Fire rescue – No restrictions

4.2.5.2 *Joint Base Elmendorf Richardson*

Runways:

- Runway 06/24 – Fully operational
- Runway 16/34 – Fully operational

Tower structure/Air traffic control capability – Fully operational

Navigational Aids:

- Nav aids/Instrument Landing System Runway 06 – Fully operational
- Nav aids/Localizer/Distance Measuring Equipment Runway 06 – Fully operational
- Nav aids/Tactical Air Navigation System Channel 81 Runway 06/16 – Fully operational

Lighting:

- Airfield Lighting (Approach/Runway/Taxiways) – Fully operational

Fuel:

- Petroleum tanks – Fully operational
- Ground fuel hydrants – Fully operational
- Fuel trucks – Fully operational

Parking:

- Parking maximum on ground/working maximum on ground – No restrictions
- Slot Time Allocation/Aircraft Priority/Department of Defense/Federal Emergency Management Agency/Commercial) – No restrictions

Other:

- Material handling equipment – Fully operational
- Passenger operations – Fully Operational
- Hangar status – No restrictions
- Crash/Fire rescue – No restrictions

4.2.5.3 *Merrill Field*

Normal operations

4.3 Start of Exercise Artificialities

4.3.1 Weather Conditions

- Snow loads in all of Southeast and Southcentral Alaska's mountain ranges are well above normal, not the record depths of 2011 and 2012, but still above the norm. At the Mount Alyeska Ski Resort, 50 miles south of Anchorage, snowfall at the top of the mountain averages 650 inches, annually. Mount Alyeska currently has over 700 inches of accumulated snow.
- Snow pack in the Thompson Pass area, northeast of Valdez, has reached 20 feet. Avalanches in Thompson Pass continue to threaten the Richardson Highway.

4.3.2 U.S. Department of Defense

- An approximate 400-person chemical, biological, radiological, nuclear, explosive subject matter expert element from the Washington Homeland Response Force; Hawaii and Oregon Chemical, Biological, Radiological, Nuclear, Explosive Enhanced Response Force Packages; and portions of the California, Nevada, Indiana, and Nebraska Civil Support Teams have been deployed to Alaska to help support the Arctic Winter Games in Fairbanks on March 15-22. Following the Arctic Winter Games, these Chemical, Biological, Radiological, Nuclear, Explosive units will start training on or about March 27 with the Alaska National Guard to fulfill their annual training requirement and external evaluation. Some of these units will remain in Alaska to participate in the Hazardous Material Symposium in Kodiak planned for April 1-3, 2014.
- The 101st Civil Support Team is in Kodiak for training.
- Headquarters & Headquarters Troop/1-297th Reconnaissance and Surveillance will be able to travel to Valdez.
- National Guard forces will be deployed to Valdez and Cordova.

4.3.3 Communications

- Tactical communication equipment (deployed by the State of Alaska or National Guard units) will have community frequencies and code plugs preloaded into deployed units.

- The Tsunami Warning System and City Watch call-out from the Alaska State Emergency Operations Center will be operational in order to validate the system operability.
- Valdez and Cordova will experience a communication outage all day on March 27. No communication will be established by any outside organization for the first 24 hours of the exercise.
- Power and communication will be intermittent for the duration of the exercise throughout the Matanuska-Susitna Borough.

4.3.4 Damages

- There will be no damage to Trans-Alaska Pipeline System; however, it will be shut down and require inspections.
- There will be no damage to Delta Junction, a major thoroughfare, which sits on the Delta River at the intersection of the Richardson Highway and the Alaska Highway following the 7.8-magnitude aftershock on March 28. The aftershock is needed to drive play at Fort Greely for the Alaska National Guard.
- The National Tsunami Warning Center in Palmer continues its operational capability at a marginal level with potential latent structural damage.

4.3.5 Timeline

- Joint Logistics over the Shore deployment is artificially accelerated to allow this event to take place during the timeframe of the exercise.
- The arrival timing and transportation methods will be artificiality for personnel and equipment participating in full-scale exercise play during the exercise. Logistics constraints based on notional earthquake and tsunami damage will not affect the real world deployment of these exercise participants to ensure their participation can take place during the timeframe of the exercise.

4.3.6 Other

- The aftershocks only impact the communities listed.
- The Matanuska-Susitna Borough Emergency Operations Center personnel will already be assembled on March 27 to participate in a training event, so activation will be expedited.
- The estimated sheltering, feeding, and hydration numbers exceed the population of Valdez. The assumption is that these numbers represent visitors.
- The equipment for the Alaska Medical Station will be pre-staged at the fairgrounds.
- There are currently 6,000 tourists, business travelers, and family visitors in the Anchorage area.
- At the time of the earthquake, 14,000 Matanuska-Susitna Borough residents are in the Municipality of Anchorage. 10,000 of them desire to return to their homes north of the Knik River.

4.3.7 International

- Alaska International Film Festival
 - The Mexican Consulate of Anchorage is hosting a workshop for the International Film Festival at the 3rd Avenue hotel in Anchorage. Speakers scheduled for the

workshop are a Mexican consulate official, a Mexican film director, and the film festival director. Forty people are registered to attend; 22 American citizens and 18 foreign nationals.

- International Trade and Commerce Conference
 - On March 26-27, the inaugural Arctic Development Foundation Conference at a 5th Avenue hotel in Downtown Anchorage will focus on the theme of international trade and business opportunities that flow from development of resources in the Arctic. Working from a context of who stands to benefit most—which regions, countries, industries, and companies—discussions will address issues such as supply chains, innovation, markets, commerce, and maritime and air transport. Speakers scheduled for the workshop are American and foreign business leaders, a foreign energy Cabinet-level minister, a foreign trade official, an Anchorage Chamber of Commerce official, and an Alaska Consular Corps Honorary Consul. One hundred seven people are registered to attend; 65 American citizens and 42 foreign nationals.
- Israel Defense Forces (IDF) National Rescue Unit (NRU) Training Event in Anchorage
 - On March 28, Alaska National Guard is hosting an Israeli Defense Force National Rescue Unit to participate in a joint training event at Joint Base Elmendorf-Richardson. The training event will allow participants to discuss search and rescue plans and procedures, direction of search and rescue tactical operations, conduct of search and rescue reconnaissance, and extrication. Israel Defense Forces is particularly interested in search and rescue operations in arctic environments, to enhance their ability to respond to international disasters with similar environments and challenges. All Israel Defense Forces members are cleared and entered the United States on March 26, as the group planned to conduct a variety of meetings with Department of Defense, National Guard, and State of Alaska officials on March 27, prior to the training event. The group is staying at a hotel in downtown Anchorage.

4.4 Alaska Earthquake Scenario

4.4.1 Initiating Event⁴

4.4.1.1 *Earthquake*

At 10:10 a.m. Alaska Daylight Time on March 27, an earthquake occurs in Alaska. The shaking, which lasts nearly 5 minutes, has caught most of the affected area's population either at work or school. Preliminary estimates indicate a 9.2-magnitude earthquake initiated approximately 70 miles east of Anchorage and 50 miles west of Valdez at a depth of 16 miles, rupturing a fault that spans an area from beyond the western edge of Kodiak Island to the eastern side of Prince William Sound and from well offshore to inland near upper Cook Inlet. This event is felt throughout most of Alaska, as far east as White Horse Yukon Territory, Canada, and south to

⁴ Additional information and mapping including Shake Maps and inundation details can be found in Appendix A – Maps.

British Columbia and northern Washington State. Over the next several days Alaska will experience 13 aftershocks ranging from 5.1 magnitude to 7.8 magnitude.

The U.S. Geological Survey and Alaska Earthquake Information Center have determined that an area of the Alaska-Aleutian megathrust, approximately 400 miles long and several hundred miles wide, has slipped causing the North American Plate to override the Pacific Plate. Movement on the megathrust has been responsible for many historic earthquakes in this region, including the 1964 Great Alaskan Earthquake.

4.4.1.2 *Tsunami*

At 10:15 a.m. Alaska Daylight Time, the National Tsunami Warning Center (formerly the Alaska Tsunami Warning Center) issues a tsunami warning to all coastal areas in Southeast Alaska, Southcentral Alaska, the Aleutian Islands, British Columbia, Canada, the Northwestern United States, Hawaii, and the Pacific Rim countries.

4.4.1.3 *Avalanche*

The initial shaking causes avalanche activity in many of the slide zones in the affected area. Additional aftershocks will bring down the more solid snow slabs, disrupting rail and road traffic throughout the region.

4.4.1.4 *Immediate Consequences*

Most communication pathways in Southcentral Alaska are out of service, making damage reporting and requests for fire and emergency medical service nearly impossible; telephone lines, communication towers, and fiber optic cables are down or damaged.

Motorists are stranded on nearly every road and highway in Southcentral Alaska. Roadways are blocked by snow and ice from avalanche activity from Healy and Glenn Allen in the north to Seward and Homer in the south. Bridges are damaged throughout the region; some have been affected by the shaking others by liquefaction. People are being forced to find alternate routes around the damaged areas. The distinct odor of natural gas is present in most populated neighborhoods of Southcentral Alaska.

As tsunami warnings are issued, residents head for the safety of higher ground. Structural damage, debris, and snow slow their progress. Additionally, roadways on some tsunami routes are impassable because of avalanches.

4.4.1.5 *Anticipated Immediate Action*

The State of Alaska is expected to request a Presidential Disaster Declaration within hours of the initiating event, using established protocols. Additionally, a recommendation to request a Dual Status Commander is expected from the Alaska National Guard Adjutant General to the Governor of Alaska. Approval for the Dual Status Commander from the Secretary of Defense is expected to occur on day one of the exercise.

Joint Staff J1 (manpower, personnel, and administration) is expected to direct a state-wide Department of Defense Personnel Disaster Accountability report as specified in the Federal Emergency Management Agency Region X All-Hazards Plan.

4.4.2 Aftershock and Tsunami Timeline

Table 6 provides a timeline for anticipated aftershocks and tsunamis; the intent is for damage to be localized.

Table 6. Aftershock and Tsunami Timeline

Date and Time	Description
Thursday, March 27, 2014	
10:11 a.m. Alaska Daylight Time/ 2:11 p.m. Eastern Daylight Time	A 20' tsunami hits Valdez, AK.
10:12 a.m. Alaska Daylight Time/ 2:12 p.m. Eastern Daylight Time	A 27' 3" tsunami hits Seward, AK.
10:13 a.m. Alaska Daylight Time/ 2:13 p.m. Eastern Daylight Time	A 19' 8" tsunami hits Homer, AK.
10:15 a.m. Alaska Daylight Time/ 2:15 p.m. Eastern Daylight Time	A 16' tsunami hits Cordova, AK.
10:40 a.m. Alaska Daylight Time/ 2:40 p.m. Eastern Daylight Time	A 6.1-magnitude aftershock occurs along the Castle Mountain fault west of Horseshoe Lake.
10:58 a.m. Alaska Daylight Time/ 2:58 p.m. Eastern Daylight Time	A 22' 7" tsunami hits Kodiak, AK.
12:40 p.m. Alaska Daylight Time/ 4:40 p.m. Eastern Daylight Time	A 1' 2" tsunami hits Unalaska, AK.
1:55 p.m. Alaska Daylight Time/ 5:55 p.m. Eastern Daylight Time	A 5.1-magnitude aftershock occurs along the Castle Mountain fault west of Horseshoe Lake.
2:34 p.m. Alaska Daylight Time/ 6:34 p.m. Eastern Daylight Time	A 7' tsunami hits Elfin Cove, AK (near Juneau, AK).
Friday, March 28, 2014	
5:30 a.m. Alaska Daylight Time/ 9:30 a.m. Eastern Daylight Time	A 6.9-magnitude aftershock occurs near Shemya, AK, and drives play for Unalaska. This generates a small local tsunami.
5:30 a.m. Alaska Daylight Time/ 9:30 a.m. Eastern Daylight Time	A 1' local tsunami hits Unalaska, AK.
8:00 a.m. Alaska Daylight Time/ 12:00 p.m. Eastern Daylight Time	A 6.5-magnitude aftershock occurs near Kodiak, AK.
9:00 a.m. Alaska Daylight Time/ 1:00 p.m. Eastern Daylight Time	A 6.4-magnitude aftershock occurs northeast of Valdez, AK, and also affects Cordova, AK.
9:18 a.m. Alaska Daylight Time/ 1:18 p.m. Eastern Daylight Time	A 6.8-magnitude aftershock occurs near Ketchikan, AK.
9:45 a.m. Alaska Daylight Time/ 1:45 p.m. Eastern Daylight Time	A 6.9-magnitude aftershock occurs near Delta Junction, AK.
10:00 a.m. Alaska Daylight Time/ 2:00 p.m. Eastern Daylight Time	A 5.6-magnitude aftershock occurs 2 miles West of Cordova, AK, and creates a 16' local tsunami.
10:05 a.m. Alaska Daylight Time/ 2:05 p.m. Eastern Daylight Time	A 16' local tsunami hits Cordova, AK.
1:00 p.m. Alaska Daylight Time/ 5:00 p.m. Eastern Daylight Time	A 6.4-magnitude aftershock occurs 15 miles South of Cordova, AK.
1:30 p.m. Alaska Daylight Time/ 5:30 p.m. Eastern Daylight Time	A 5.2-magnitude aftershock occurs 10 miles East of Cordova, AK. A 6.8-magnitude aftershock occurs near Houston, AK.

Table 6. Aftershock and Tsunami Timeline

Date and Time	Description
Saturday, March 29, 2014	
9:15 a.m. Alaska Daylight Time/ 1:15 p.m. Eastern Daylight Time	A 6.8-magnitude aftershock occurs near Wasilla, AK.
9:56 a.m. Alaska Daylight Time/ 1:56 p.m. Eastern Daylight Time	A 7.5-magnitude aftershock occurs southwest of Valdez, AK. The aftershock will fracture the previously weakened slope of Mount Thomas, sending tons of rock, snow, dirt, and debris into Prince William Sound near Shoupe Bay. This generates a 10' to 15' local tsunami.
10:16 a.m. Alaska Daylight Time/ 2:16 p.m. Eastern Daylight Time	A 10' to 15' local tsunami hits Valdez, AK.
Sunday, March 30, 2014	
10:30 a.m. Alaska Daylight Time/ 2:30 p.m. Eastern Daylight Time	A 6.5-magnitude aftershock occurs near Kodiak, AK.
Tuesday, April 1, 2014	
12:00 p.m. Alaska Daylight Time/ 4:00 p.m. Eastern Daylight Time	A 6.4-magnitude aftershock occurs northeast of Valdez, AK.

4.5 Initial Alaska Earthquake-Related Consequences

The following information describes the effects to the region's building stock, critical infrastructure, emergency services, and medical and public health system caused by the initial March 27 10:10 a.m. Alaska Daylight Time 9.2-magnitude earthquake and subsequent tsunamis.

4.5.1 Consequences to Infrastructure

Table 7 through Table 14 provide information on the effects to the region's building stock and critical infrastructure caused by the earthquake and subsequent tsunamis affecting the region.

4.5.1.1 Residential Building Damage

Table 7. Residential Building Damage

Residential Buildings					
Community	Name	USNG	Damage Level	Damage Status	Description
Anchorage	Turnagain Heights	6V UN 41930 88157	Complete	Not Operational	Turnagain Heights area; estimating 3 dozen homes destroyed in a 1 mile square by ½ mile square area. Landslides destroyed most of the homes, with 20 people missing. The low estimate is attributed to the time of day the earthquake occurs and residents being at work, school, and running errands.
Anchorage	South Anchorage and Hillside	6V UN 46369 84790	Complete	Not Operational	South Anchorage and Hillside is an area of multi-family residential and expensive homes, where thousands of wealthier Alaskans reside. Estimating 500 residential homes or apartment houses destroyed with over 200 people missing.

Table 7. Residential Building Damage

Residential Buildings					
Community	Name	USNG	Damage Level	Damage Status	Description
Anchorage	Southwest Anchorage	6V UN 44406 79143	Complete	Not Operational	Southwest Anchorage area of expensive homes with some overlooking the bluffs. Estimating 150 homes destroyed with 75 people missing.
Anchorage	Slide area M Street and 5th Street	6V UN 43918 90448	Complete	Not Operational	Slide area M Street and 5th Street, several homes collapsed in the 500 block also homes/buildings collapsed in the 300 block of L street.
Anchorage	2nd Avenue between K and H Streets	6V UN 44259 90790	Major	Not Operational	Major damage of homes/buildings along 2nd Avenue between K and H Streets.
Anchorage	Grid 2932	6V UN 45738 77510	Complete	Not Operational	Heavy damage in grid 2932 ; homes destroyed at 1100 to 13351 Ocean View Drive, 13300 to 13341 Cove Circle, 13511 to 13700 Jarvi Drive, 13621 to 137040 Venus Way, and 13910 to 14041 Jarvi Drive.
Anchorage	Grid 3032	6V UN 46399 76506	Major	Not Operational	Heavy damage in grid 3032; homes destroyed at 14000 to 14200 Jarvi Drive.
Anchorage	Grid 3033	6V UN 46219 76684	Major	Not Operational	Heavy damage to homes in grid 3033; 14120 to 14272 Jarvi Drive.
Anchorage	Grid 3034	6V UN 47584 75964	Major	Not Operational	Heavy damage in grid 3034; homes damaged at 2700 to 2946 Nugget Lane.
Anchorage	Grid 3134	6V UN 47628 75760	Major	Not Operational	Heavy damage in grid 3134; homes damaged at 2730 to 2901 Porcupine Trail Road.
Anchorage	Grid 1538	6V UN 50905 88224	Major	Not Operational	Heavy damage to homes in grid 1538; town homes collapsed at 5501 to 5521.
Anchorage	Grid 1438	6V UN 51307 88860	Complete	Not Operational	Heavy damage in grid 1438; homes collapsed at 1606, 1608, 1612, 1613, and 1614 Kepner Drive. No one at home , reported by APD Homes 1611, 1609, and 1607 Elmendorf Drive has significant damage.
Anchorage	Grid 1328	6V UN 43435 90026	Complete	Not Operational	Heavy Damage in grid 1328; homes collapsed or sustained severe damage at 909, 919, 936, 938, 941, and 943 David Place. Homes have severe damage at 1701 , 1712, and 1717 11th Street; homes have collapsed at 1112 and 1130 S Street; homes have collapsed at 184, 1836, 1834, and 1814 Scenic Way.
Anchorage	Grid 1329	6V UN 44066 89676	Major	Not Operational	Grid 1329; massive amounts of damage to Inlet Towers at 1200 L Street, residents are being evacuated from the building.
Anchorage	Grid 1529	6V UN 43351 88694	Complete	Not Operational	Grid 1529; homes at 1349, 1341, 1321, and 1315 Hillcrest have slid off their foundations and are blocking the roadway.
Anchorage	Grid 1526	6V UN 41055 88649	Major	Not Operational	Grid 1526; homes heavily damaged at 2206, 2200, 2130, 2120, and 2110 Kissee Court. Multiple homes with heavy damage at 2468 to 2300 on Tulik Drive.

Table 7. Residential Building Damage

Residential Buildings					
Community	Name	USNG	Damage Level	Damage Status	Description
Anchorage	Grid 1626	6V UN 40934 87644	Major	Not Operational	Grid 1626; heavy damage to home at 3887 to 3820 Galatcia Drive.
Anchorage	Grid 1627	6V UN 42368 87168	Major	Not Operational	Grid 1627; heavy damage to homes on Woodland Park.
Anchorage	Grid 3536	6V UN 49216 72027	Complete	Not Operational	Grid 3536; homes collapsed at 4701, 4702, and 4711 Potter Crest Circle, no one hurt or missing. Other homes in the area have significant damage.
Anchorage	Grid 1834	6V UN 70618 93749	Moderate	Reduced	Multi unit fire reported at Twin Birch Trailer and Wright Street. 5 trailer homes are on fire.
Anchorage	Apartment Building E	6V UN 44219 90504	Severe	Not Operational	5th Street, 12-15 floors of glass frontage on the building has fallen; estimating 15 people are missing and potentially buried under the rubble on the sidewalk below.
Cordova	Cordova	6V WN 67916 12691	Complete	Not Operational	Initial damage assessments indicate significant possible structural damage to housing units, and private residences. Numerous collapsed buildings and unknown injuries in Lindow neighborhood. Two major structural collapses requiring an urban search and rescue team: - 2-story, concrete building with an unknown number trapped (at least 5 people). - 3-story, concrete building with 12 people missing.
Fairbanks	Fairbanks	6W VS 65702 91220	Minor	Operational	No significant damage.
Fort Greely	Fort Greely	6V WR 70943 87232	Minor	Operational	No significant damage.
Homer	Homer	5V NG 83107 12588	Major	Not Operational	70% of the residential neighborhoods in the tsunami zone suffer damage ranging from moderate to severe.
Hope	Hope	6V UN 56775 56696	Minor	Reduced	Most homes sustain minor damage.
JBER	JBER	6V UN 49447 94024	Complete	Not Operational	20% of the housing units have moderate or worse damage. 37 housing units are completely damaged (buildings 7003 to 7052). Additional 30 houses with extensive damage, 22 with moderate damage, 39 with slight damage, and 553 are undamaged.
Juneau	Juneau	8V NK 34189 62259	Minor	Operational	No significant damage.
Kenai Peninsula Borough	Kenai Peninsula Borough	5V NG 76408 13965	Major	Not Operational	100 homes along Homer bluff are severely damaged.
Kodiak	Kodiak	5V NE 35569 06264	Complete	Not Operational	On Hillside Drive, 20 single family dwellings from 514 to 814 Hillside Drive will be damaged and unusable; and 5 single family residences will be completely destroyed between 410 and 422 Hillside Drive.

Table 7. Residential Building Damage

Residential Buildings					
Community	Name	USNG	Damage Level	Damage Status	Description
Matanuska-Susitna Borough	Matanuska-Susitna Borough	6V UQ 66667 21403	Major	Not Operational	20,000 homes suffer minimal to severe damage and residents may require sheltering. The extent of damages will be determined based on windshield surveys conducted by the Alaska National Guard. There is severe damage to homes along Lake View Avenue and Lake Lucille Drive. Several fires are reported in the residential areas of Talkeetna.
North Pole	North Pole	6W VS 83251 80762	Minor	Operational	No significant damage.
Seward	Seward	6V UM 64290 67630	Complete	Not Operational	100 residential houses including 3 multi-unit apartment buildings are severely or totally damaged.
Seward	Bayside Apartments	6V UM 64340 66568	Severe	Not Operational	Severely Damaged. 1011 4th Ave, Seward, AK 99664.
Unalaska	Unalaska	3U UV 99630 72253	Moderate	Reduced	40 homes are damaged displacing 200 people.
Valdez	Valdez	6V WN 34781 77417	Major	Not Operational	Homes in the outlying subdivisions to the east suffer minor damage. Approximately 2 dozen coastal homes will be damaged or destroyed.

4.5.1.2 Commercial Building Damage

Table 8. Commercial Building Damage

Commercial Buildings						
Community	Name	USNG	Address	Damage Level	Damage Status	Description
Anchorage	Hotel Building A	6V UN 44462 90443	720 W 5th Ave	Complete	Not Operational	5th Avenue, 14 floors; total collapse. 200 rooms, restaurant. 60% occupancy – estimating 160 people are trapped or missing.
Anchorage	Hotel Building B	6V UN 44066 89676	1200 L St	Complete	Not Operational	L Street, 14 floors; total collapse. 180 rooms at 60% occupancy – estimating 120 people are trapped or missing.
Anchorage	Hotel Building C	6V UN 44668 90652	500 W 3rd Ave	Complete	Reduced	3rd Avenue, 15 floors; partial collapse. 600 rooms at 60% occupancy – estimating 75 people are trapped or missing.
Anchorage	Hotel Building C	6V UN 44704 90651	500 W 3rd Ave	Complete	Reduced	Hotel Building C has major damage and collapse of tower.
Anchorage	Hotel Building D	6V UN 45544 90365	401 E 6th Ave	Severe	Reduced	6th Avenue, 14 floors; partial collapse. 400 rooms at 40% occupancy – estimating 45 people are trapped or missing.
Anchorage	Clothing Store #2	6V UN 44787 90387	406 W 5th Ave	Complete	Not Operational	Clothing Store #2 parking garage collapse: north side, debris in road way (6th

Table 8. Commercial Building Damage

Commercial Buildings						
Community	Name	USNG	Address	Damage Level	Damage Status	Description
						avenue), possible trapped personnel.
Anchorage	Parking Garage #1	6V UN 44985 90491	440 B St	Complete	Not Operational	Parking garage #1 for 5th Avenue map partial collapse on south side along 5th and C Street.
Anchorage	Parking Garage #2	6V UN 44685 90267	517 W 7th Ave	Complete	Not Operational	Parking Garage #2 collapse; north side debris in roadway, complete blockage of E Street and 7th Avenue.
Anchorage	Parking Garage #3	6V UN 44583 90145	600 W 7th Ave	Complete	Not Operational	Parking Garage #3 (underground) partial collapse south side (F Street and 8th Avenue); building is compromised.
Anchorage	Bus Station #1	6V UN 44474 90332	700 W 6th Ave	Major	Not Operational	Heavy damage to parking/bus station at 6th and G street, glass and debris is in the roadway of both 6th and G and H street but passable.
Anchorage	Parking garage #4	6V UN 44922 87107	3601 C St	Complete	Not Operational	Parking garage #4 and walk way at 36th Ave and C street (Frontier Building) has major damage, walk way and garage has collapsed.
Anchorage	Office building #2	6V UN 44969 87104	3601 C St	Major	Not Operational	Office building #2 has structural damage, broken glass and other debris from the building is in both 36th Ave and A street.
Anchorage	Home Improvement Warehouse	6V UN 48801 90339	400 Rodeo Pl	Major	Not Operational	Home Improvement Warehouse in the vicinity of Northway Mall area. Structure collapse with an unknown number of people trapped or missing. Chemicals in the store have leaked and/or mixed causing contamination throughout the rubble.
Anchorage	Business	6V UN 43697 88564	2248 Spenard Rd	Moderate	Reduced	Business at 2248 Spenard Road is on fire
Cordova	Cannery #1	6V WN 67952 12881	N Railroad Ave	Complete	Not Operational	Cannery #1 has both sustained severe damage and numerous roof collapses and is non-operational. No immediate ammonia leaks.
Cordova	Cannery #2	6V WN 68119 13729	Cannery Row	Complete	Not Operational	Cannery #2 has both sustained severe damage and numerous roof collapses and is non-operational. No immediate ammonia leaks.
Homer	Seafood Processing Plant	5V NG 84126 12246	Lake Shore Drive	Major	Not Operational	All Seafood processing plants are damaged due to tsunami.
Joint Base Elmendorf-Richardson	Commissary	6V UN 51575 92061	5800 Westover Ave	None	Reduced	No power.

Table 8. Commercial Building Damage

Commercial Buildings						
Community	Name	USNG	Address	Damage Level	Damage Status	Description
Joint Base Elmendorf-Richardson	Gas Station #3	6V UN 47260 92540	6201 Arctic Warrior Drive	None	Reduced	No power.
Joint Base Elmendorf-Richardson	Shoppette #1	6V UN 47082 92451	Arctic Warrior Drive	None	Reduced	No power.
Kenai	Hardware Store #1	5V NH 96573 15232	10480 Kenai Spur Hwy	Moderate	Reduced	Damaged
Kenai	Big Box Supercenter #4	5V NH 97254 15557	10096 Kenai Spur Hwy	Moderate	Reduced	Damaged
Kenai	Grocery Store #1	5V NH 96461 15087	10576 Kenai Spur Hwy Kenai	Moderate	Reduced	Damaged
Kenai	Refinery #1	5V NH 89183 28563	Kenai	Major	Not Operational	Refinery #1 has been taken off-line for inspection. At least one of the petroleum storage tanks has collapsed--estimate 100,000-gallon oil spill. The spill is contained.
Kenai	Grocery Store #9	5V NH 96770 14934	10575 Kenai Spur Highway	Moderate	Reduced	Damaged
Kodiak	A commercial building	5V NE 37752 07955	2911 Mill Bay Rd	Major	Not Operational	There is significant damage to a commercial building within the tsunami zone and moderate damage due to the earthquake.
Kodiak	Seafood Processing Plant	5V NE 34864 05138	317 Shelikof St	Major	Not Operational	All seafood processing plants are damaged due to tsunami.
Palmer	Grocery Store #7	6V UP 87247 31405	664 W Evergreen Ave	Major	Not Operational	Damaged
Palmer	Merchant Store #4	6V UP 87546 31522	650 S Cobb St	Major	Not Operational	Damaged
Seward	Hotel E	6V UM 64315 66405	911 4th Ave	Major	Not Operational	Severely damaged.
Seward	Hotel F	6V UM 64442 67258	1412 4th Ave	Major	Not Operational	Severely damaged.
Seward	Merchant Store #6	6V UM 69811 87449	Mile 1 Seward Highway	Major	Not Operational	Severely damaged.
Seward	Hotel G	6V UM 64328 67076	1306 Seward Hwy	Major	Not Operational	Severely damaged.
Seward	Restaurant #1	6V UM 64355 66927	307 S Harbor St	Major	Not Operational	Severely damaged.
Seward	Seafood Processing Plant	6V UM 64423 67182	1408 4th Ave	Major	Not Operational	All Seafood processing plants are damaged due to tsunami.

Table 8. Commercial Building Damage

Commercial Buildings						
Community	Name	USNG	Address	Damage Level	Damage Status	Description
Soldotna	Merchant Store #4	5V PH 07166 07530	43843 Sterling Hwy	Moderate	Reduced	No initial damage. Supplies in store almost depleted. Out of gas.
Talkeetna	Downtown Talkeetna	5V PK 49915 13283	Talkeetna	Major	Not Operational	Downtown Talkeetna is severely damaged and several buildings are on fire.
Talkeetna	Grocery Store #1	5V PK 49579 13515	13650 N Main Street	Major	Not Operational	Store and at least 3 surrounding buildings are on fire.
Unalaska	Seafood Processing Plant	3U UV 99630 72253	Unalaska	None	Operational	No significant damage.
Valdez	Downtown Valdez	6V WN 34757 77526	Valdez	Minor	Reduced	Minor damage to buildings in the downtown area.
Valdez	Seafood Processing Plant	6V WN 35254 76717	209 S Harbor Dr	Major	Not Operational	Seafood processing plants are damaged due to tsunami.
Wasilla	Hardware Store #2	6V UP 73436 28986	2561 Sun Mountain Ave	Major	Not Operational	Damaged
Wasilla	Big Box Supercenter #3	6V UP 74472 28418	1350 S Seward Meridian Pkwy	Major	Not Operational	Damaged
Wasilla	Hardware Store #3	6V UP 71597 29317	1255 E Palmer-Wasilla Hwy	Major	Not Operational	Damaged
Wasilla	Merchant Store #1	6V UP 72417 29511	1801 E Parks Hwy	Major	Not Operational	Store has collapsed and there are an estimated 30-50 people trapped inside. The north wall and part of the roof have collapsed.
Wasilla	Merchant Store #2	6V UP 72099 29696	1501 E Parks Hwy	Severe	Not Operational	Partial collapse

4.5.1.3 Schools

Table 9. Schools Damage

Schools						
Community	Name	USNG	Address	Damage Level	Damage Status	Description
Akhiok	St Mary's School	5V NE 37857 07770	Akhoik	Complete	Not Operational	Partial collapse of sections of the school.
Akhiok	Akhiok School	5V MD 28804 11951	3rd Ave	Major	Not Operational	Structural damage and partial collapse.
Anchorage	Holy Rosary Academy	6V UN 44099 88383	1010 W Fireweed Ln	Moderate	Not Operational	Sustains some structural damage to the frame and cracks in the wall.
Anchorage	Avail School	6V UN 44966 90505	425 C Street	Major	Not Operational	Structural damage and partial collapse.

Table 9. Schools Damage

Schools						
Community	Name	USNG	Address	Damage Level	Damage Status	Description
Anchorage	Bear Valley Elementary	6V UN 51722 75265	15001 Mountain Air Drive	Minor	Operational	Shelter site.
Anchorage	Family Partnership Charter School	6V UN 45454 88253	401 E Fireweed Lane, Suite 100	Major	Not Operational	Structural damage and partial collapse.
Anchorage	Goldenview Middle School	6V UN 50126 74675	15800 Goldenview Drive	Moderate	Not Operational	Golden View Middle School: loss of power and water, sustains some structural damage to the frame and cracks in the walls; school will evacuate.
Anchorage	Government Hill Elementary	6V UN 45922 92199	525 Bluff Drive	Major	Not Operational	Government Hills Elementary School: sustains major structural damage and is not habitable; school will evacuate.
Anchorage	Inlet View Elementary	6V UN 43861 89670	1219 N Street	Major	Not Operational	Structural damage and partial collapse.
Anchorage	North Star Elementary	6V UN 44516 88487	605 W Fireweed Lane	Moderate	Not Operational	Sustains some structural damage to the frame and cracks in the wall.
Anchorage	O'Malley Elementary	6V UN 50868 79340	11100 Rockridge Drive	Moderate	Reduced	Sustains some structural damage to the frame and cracks in the wall.
Anchorage	Romig Middle School	6V UN 43365 88366	2500 Minnesota Dr	Major	Not Operational	Structural damage and partial collapse.
Anchorage	South Anchorage High School	6V UN 48605 77174	13400 Elmore Road	Moderate	Reduced	Sustains some structural damage to the frame and cracks in the wall.
Anchorage	Steller Secondary School	6V UN 44534 88259	2508 Blueberry Lane	Moderate	Not Operational	Sustains some structural damage to the frame and cracks in the walls, and broken windows.
Anchorage	Susitna Elementary	6V UN 52876 87950	7500 Tyone Circle	Minor	Reduced	Whaley Charter School and Sustina Elementary: evacuating due to a gas leak in the area.
Anchorage	Turnagain Elementary	6V UN 41555 88006	3500 W Northern Lights Blvd	Moderate	Reduced	Visible cracks in the walls and broken windows.
Anchorage	West High School	6V UN 43260 88666	1700 Hillcrest Dr	Major	Not Operational	Structural damage and partial collapse.
Anchorage	Whaley School	6V UN 48775 88415	2220 Nichols St	Minor	Reduced	Whaley Charter School and Sustina Elementary: evacuating due to a gas leak in the area.
Anchorage	Winterberry Public School	6V UN 44716 90748	508 W 2nd Ave	Major	Not Operational	Structural damage and partial collapse.
Big Lake	Big Lake Elementary	6V UP 70293 30455	Mile 45 South Big Lake Road	Complete	Not Operational	Big Lake Elementary schools experience a partial collapse.
Big Lake	Houston High School	6V UP 53020 31638	12501 W Hawk Rd	Moderate	Reduced	Houston Middle and High Schools are damaged.
Big Lake	Houston Middle School	6V UP 52858 31288	12801 W Hawk Lane	Moderate	Reduced	Houston Middle and High Schools are damaged.
Chenega Bay	Chenega Bay School	6V VM 43735 59157	Chenega	Complete	Not Operational	Partial collapse of sections of the school.

Table 9. Schools Damage

Schools						
Community	Name	USNG	Address	Damage Level	Damage Status	Description
Chiniak	Chiniak School	5V ND 49641 86366	Chiniak	Complete	Not Operational	Partial collapse of the Chiniak School and East Elementary School is reported; structural assessments needed.
Cooper Landing	Cooper Landing School	6V UN 45858 09830	19100 Bean Creek Rd	Complete	Not Operational	Partial collapse of sections of the school.
Cordova	Cordova Jr/Sr High School	6V WN 68076 12251	100 Fisherman Ave	Complete	Not Operational	Initial damage assessments indicate significant possible structural damage to the high school (24% moderate or greater damage).
Cordova	Mt. Eccles Elementary	6V WN 68236 12580	200 Adams St	None	Operational	Suitable for occupancy.
Fritz Creek	Kachemak Selo School	5V PG 08384 29911	35071 Reutov Dr	Moderate	Reduced	Visible cracks in the walls and broken windows.
Girdwood	Girdwood School	6V UN 83831 59848	680 Hightower	Major	Not Operational	Structural damage and partial collapse
Homer	Fireweed Academy	5V NG 84147 13613	1340 East End Rd	Minor	Reduced	Difficult to access schools due to road damage throughout the city.
Homer	Homer Flex School	5V NG 83438 13206	4122 Ben Walters Lane	Minor	Operational	Difficult to access schools due to road damage throughout the city.
Homer	Homer High School	5V NG 82956 13561	600 E Fairview Ave	Minor	Operational	Difficult to access schools due to road damage throughout the city.
Homer	Homer Middle School	5V NG 81381 12352	500 Sterling Hwy	Minor	Operational	Difficult to access schools due to road damage throughout the city.
Homer	Mcneil Canyon Elementary	5V NG 97909 24418	52188 East End Road	Moderate	Reduced	Difficult to access schools due to road damage throughout the city.
Homer	Paul Banks Elementary	5V NG 84214 13665	1340 East Road	Moderate	Reduced	Difficult to access schools due to road damage throughout the city.
Homer	Razdolna School	5V PG 07537 32102	31746 Basargin Rd.	Moderate	Reduced	Difficult to access schools due to road damage throughout the city.
Homer	Voznesenka Elementary	5V PG 06819 30035	32908 Voznesenka Rd.	Moderate	Reduced	Difficult to access schools due to road damage throughout the city.
Homer	West Homer Elementary	5V NG 80705 12591	3719 Soundview Ave	Minor	Reduced	Difficult to access schools due to road damage throughout the city.
Hope	Hope School	6V UN 57853 56490	Mile 15.5 Hope Hwy	None	Operational	Shelter site.
Joint Base Elmendorf-Richardson	Aurora Elementary	6V UN 46324 92587	5085 10th Street	Minor	Operational	Shelter site. In Joint Base Elmendorf-Richardson but part of the Anchorage School District.
Joint Base Elmendorf-Richardson	Orion Elementary School	6V UN 46510 92259	5112 Arctic Warrior Dr	Major	Not Operational	Orion Elementary School: loss of power, sustains major structural damage and is not habitable; school will evacuate. In Joint Base Elmendorf-Richardson but part of the Anchorage School District.

Table 9. Schools Damage

Schools						
Community	Name	USNG	Address	Damage Level	Damage Status	Description
Joint Base Elmendorf-Richardson	Mount Iliamna Elementary	6V UN 46718 92215	4140 Eaker Ave	None	Operational	Shelter site.
Karluk	Karluk School	5V NE 35925 05888	Main Street	Complete	Not Operational	Partial collapse of sections of the school.
Kenai	Kenai Central High School	5V NH 97996 15269	9583 Spur Hwy	Minor	Operational	District follow-up reports the failure of the pool roof at Kenai Central, but the rest of the school is usable with open ceiling tiles and sporadic power.
Kodiak	Big Sandy Lake	5V NE 36266 06179	722 Mill Bay Rd	Complete	Not Operational	Structural damage and partial collapse.
Kodiak	Danger Bay School	5V NE 35952 05944	722 Mill Bay Rd	Complete	Not Operational	Partial collapse of sections of the school.
Kodiak	East Elementary	5V NE 37578 07150	200 Benny Benson Drive	Complete	Not Operational	Partial collapse of the Chiniak School and East Elementary School is reported; structural assessments needed.
Kodiak	Kodiak Christian School	5V NE 37513 07374	2320 Mill Bay Rd	Complete	Not Operational	Structural damage and partial collapse.
Kodiak	Kodiak High School	5V NE 36031 05866	917 Rezanof East	Complete	Not Operational	Partial collapse of sections of the school.
Kodiak	Kodiak Island Corresp.	5V NE 35952 05944	722 Mill Bay Road	Complete	Not Operational	Partial collapse of sections of the school.
Kodiak	Kodiak Middle School	5V NE 36174 05906	1017 Rezanof East	Complete	Not Operational	Partial collapse of sections of the school.
Kodiak	Main Elementary	5V NE 36187 06087	128 Powell Avenue	Complete	Not Operational	Partial collapse of sections of the school.
Kodiak	North Star Elementary	5V NE 37713 09008	961 Mallard	Complete	Not Operational	Partial collapse.
Kodiak	Peterson Elementary	5V NE 29990 00678	Avenue G, Bldg 550	Complete	Not Operational	Partial collapse.
Larsen Bay	Larsen Bay School	5V MD 41417 77921	Larsen Bay	Major	Not Operational	Structural damage and partial collapse.
Moose Pass	Moose Pass School	6V UN 66644 27694	Depot Rd	Major	Not Operational	Structural damage and partial collapse.
Old Harbor	Old Harbor School	5V MD 81692 42406	R 1 Three Saints Ave	Complete	Not Operational	Partial collapse.
Ouzinkie	Ouzinkie School	5V NE 29175 20200	3rd Street	Major	Not Operational	Sustains structural damage.
Palmer	Colony Middle School	6V UP 82591 32402	9250 Colony School Drive	Complete	Not Operational	Partial collapse of 2 classrooms.
Port Graham	Port Graham School	5V NF 66240 79605	Graham Rd	Moderate	Reduced	Visible cracks in the walls and broken windows.
Port Lions	Port Lions School	5V NE 07058 14822	2010 Airport Rd	Complete	Not Operational	Partial collapse.
Seldovia	Susan B English School	5V NF 72951 90000	365 Winnifred	Moderate	Reduced	Visible cracks in the walls and broken windows.

Table 9. Schools Damage

Schools						
Community	Name	USNG	Address	Damage Level	Damage Status	Description
Seward	Seward Elementary	6V UM 64695 68672	600 Sealion Drive	Moderate	Operational	Seward Middle and Elementary Schools have moderate damage but are usable. Staff is evaluating stability of all schools and working with the borough and the city to see if they are safe to use as shelters. The siren system is functional and control at school allows voice messages to parts of the community.
Seward	Seward High School	6V UM 64277 68395	2001 Swetmann Dr.	Moderate	Reduced	Seward High School suffers damage from the earthquake and the west side of the school is impacted by an avalanche with a couple feet of snow on parts of the roof.
Seward	Seward Middle School	6V UM 64378 68580	304 Sealion Drive	Moderate	Operational	Seward Middle and Elementary Schools have moderate damage but are usable. Staff is evaluating stability of all schools and working with the borough and the city to see if they are safe to use as shelters. The siren system is functional and control at school allows voice messages to parts of the community.
Seward	Spring Creek School	6V UM 65733 69505	Mile 5 Nash Road	Complete	Not Operational	Partial collapse of sections of the school.
Talkeetna	Talkeetna Elementary	5V PJ 54582 95836	13798 E Veterans Way	Major	Not Operational	Talkeetna Elementary and Big Lake Elementary schools experience a partial collapse.
Tatitlek	Tatitlek Community School	6V WN 17404 48644	Tatitlek	Complete	Not Operational	Partial collapse.
Valdez	George H Gilson Jr. H.S.	6V WN 34501 78339	357 Robe River Drive	Major	Not Operational	Structural damage.
Valdez	Hermon Hutchens Elementary	6V WN 33704 77734	1009 West Klutina	None	Operational	Shelter site.
Valdez	Valdez High School	6V WN 34598 78345	319 Robe River Drive	Major	Not Operational	Structural damage.
Wasilla	Finger Lake Elementary	6V UP 77775 32738	5981 Eek Street	Complete	Not Operational	Finger Lake Elementary School suffers a partial collapse of 2 classrooms and the office portion of the school.
Whittier	Whittier Community School	6V VN 08152 38530	Portage Street	Complete	Not Operational	Partial collapse.

4.5.1.4 State and Local Government Buildings

Table 10. State and Local Government Building Damage

State and Local Government						
Community	Name	USNG	Address	Damage Level	Damage Status	Description
Anchorage	City Hall	6V UN 44530 90353	632 West Sixth	Major	Not Operational	City Hall sustains heavy structural damage to the entire building including large cracks in the outside walls, broken windows, and a loss of power. The building is rated unsafe and is evacuated. Debris from the building is blocking 6th Avenue between F and G Streets.
Anchorage	Animal Control	6V UN 49070 85851	4711 Elmore Rd	Major	Reduced	Animal control has lost power to the facility but reports no major damage.
Anchorage	Public Health Laboratories	6V UN 50520 85988	5455 Dr Martin Luther King Dr	Moderate	Reduced	Anchorage Fire Department 1 is contacted by the Anchorage Emergency Operations Center to respond to a potential Hazardous Material incident at the Public Health Laboratories complex. Lab workers indicated that they had been working on several hazardous products and the aftershocks have destroyed the lab. They also cited that several of their products might have been jeopardized or mixed together and subsequently formed ne unknown compounds.
Cordova	Cordova Administrative Offices	6V WN 67984 12652	602 Railroad Ave	Major	Not Operational	City Hall suffers significant water damage due to the water main breaks and is in the tsunami zone.
Cordova	Cordova City Baler	6V WN 67991 12652	White Shed Rd			The city baler is not reachable due to road blockage.
Houston	Houston City Hall	6V UP 51573 36305	13878 Armstrong Rd	Moderate	Reduced	Houston City Hall suffers damage including visible cracks in the walls and broken windows throughout.
Palmer	Dorothy Swanda Jones Building (Gov Admin bldg)	6V UP 88114 31420	350 E. Dahlia Avenue	Complete	Not Operational	Government Admin Building in Palmer suffers a partial collapse—the older portion of the building is damaged and needs to be evacuated—the newer section is sound.
Wasilla	Wasilla Public Works	6V UP 70247 30066	290 E. Herning Avenue	Moderate	Reduced	Damaged

4.5.1.5 Federal Facilities

Table 11. Federal Facility Damage

Federal Facilities						
Community	Name	USNG	Address	Damage Level	Damage Status	Description
Anchorage	Federal Building	6V UN 44561 90607	601 W 4th Ave	Major	Not Operational	Extensive damage—major portions of the building have collapsed and there are people trapped.
Anchorage	Federal Court House	6V UN 45039 90166	222 West 7th Avenue	Major	Not Operational	Federal Court house on 7th Avenue and C Street. Major damage and the glass atrium is damaged.
Anchorage	Bureau of Land Management Facility	6V UN 50593 84236	5600 Science, S Center Dr	None	Reduced	No structural damage but there is no power or water. There is also damage to the roads in the vicinity of the facility.
Anchorage	United State Department of Agriculture Calais II	6V UN 44823 87389	3301 C Street	Moderate	Reduced	Suffers moderate structural damage to frame, there are cracks in the walls, and broken windows.
Anchorage	United State Department of Agriculture Day Care Building	6V UN 45710 90416	545 East 5th Ave	Moderate	Reduced	Suffers moderate structural damage to frame, there are cracks in the walls, and broken windows.
Clear Air Force Station	General Summary	6W US 94162 31217	Anderson Road	None	Operational	No significant damage.
Cordova	Air Support Facility	6V WN 84103 07378	Copper River Hwy	None	Operational	No significant damage.
Cordova	U.S. Forest Service bunkhouses	6V WN 68186 12712	612 2nd St	Major	Not Operational	50% damaged with roof collapse.
Cordova	United State Department of Agriculture Cordova District Office	6V WN 67964 12838	612 2nd Street	Moderate	Reduced	Suffers moderate structural damage to frame, there are cracks in the walls, and broken windows.
Eielson Air Force Base	General Summary	6W VS 95159 71191	Eielson Air Force Base	None	Operational	No significant damage.
Fort Wainwright	General Summary	6W VS 69488 89418	Neely Road	None	Operational	No significant damage.
Homer	United State Department of Agriculture Homer Office	5V NG 83026 13176	4014 Lake Street	Moderate	Reduced	Suffers moderate structural damage to frame, there are cracks in the walls, and broken windows.

Table 11. Federal Facility Damage

Federal Facilities						
Community	Name	USNG	Address	Damage Level	Damage Status	Description
Joint Base Elmendorf-Richardson	United States Army Corps of Engineers	6V UN 47134 91637	2204 3rd St	Major	Not Operational	United States Army Corps of Engineers Alaska District (Joint Base Elmendorf-Richardson – 2204 3rd Street). Damage to the building is apparent from the exterior of the building and includes significant flexural and shear cracks (X cracking) to walls, broken windows, and cracks that appear to run through the building foundation. The building is not safe to occupy until a structural safety assessment is completed.
Kenai	United State Department of Agriculture	5V NH 96168 15062	110 Trading Bay Rd	Moderate	Reduced	Kenai Area Office suffers moderate structural damage to frame, there are cracks in the walls, and broken windows.
Kodiak	Air Station	5V NE 30126 00987	G Avenue	Major	Not Operational	Sustains damage from the Tsunami.
Seward	United State Department of Agriculture Seward Garage	6V UM 64348 66110	4th and A Street	Moderate	Reduced	Suffers moderate structural damage to frame, there are cracks in the walls, and broken windows.
Seward	United State Department of Agriculture Seward District Office	6V UM 67941 75566	334 4th Avenue	Moderate	Reduced	Suffers moderate structural damage to frame, there are cracks in the walls, and broken windows.
Seward	United State Department of Agriculture Seward Residence 1	6V UM 64348 66110	4th and A Streets	Moderate	Reduced	Suffers moderate structural damage to frame, there are cracks in the walls, and broken windows.
Shemya Air Force Station	General Summary	60U UD 05030 44167	Shemya Air Force Station	None	Operational	No significant damage.

4.5.1.6 United States Coast Guard Units

Table 12. United States Coast Guard Unit Statuses

United States Coast Guard		
Unit	Pre-Earthquake Status	Post-Earthquake Status
Aids to Navigation Team Kodiak	38' SPC-TB FMC at dock.	38' Special Purpose Craft-Training BoatS wrecked (injuries and damage to be determined).
Air Station Kodiak	C-130: C (hanger); B-0 (tarmac); B-2 (Cold Bay-Logistics); A ~Sitkinak Strait (training) H-60: C (hanger); B-6 (hanger); B-0 (tarmac); B-2 (Cold Bay); A ~Afognak Island (training); H-65: C and B-2 (hanger); (Coast Guard Cutter Munro); (Coast Guard Cutter Midgett).	C-130: 1 damaged in hanger; 1 B-2 (Cold Bay); 2 airborne (Sitkinak Strait, and local) H-60: 2 damaged in hanger; 2 airborne (~Afognak and local).H-65: 1 damaged in hanger; 1 airborne (local); 1 (Coast Guard Cutter Munro); 1 (Coast Guard Cutter Midgett) At the time of the 6.5-magnitude aftershock on March 28, all aircraft in hangers 1 and 3 remain out of commission for lack of airworthy spare parts and the means to outfit them C-130 hanger 1 will flood 2.5' during tsunami; hangers 2 and 3 will flood 1.5'; debris and seawater intrusion will damage equipment .
Air Station Sitka	H-60: C (hanger); B-2 (hangar); B-0 (tarmac).	H-60: C (hanger); B-2 (hangar); B-0 (tarmac).
Air Support Facility Cordova	Caretaker status (no aircraft).	Available after inspection.
United States Coast Guard Midgett	Underway 20M NW of Kiska Island. W/H-65 and AVDET; estimate 34 days endurance.	Underway 20M NW of Kiska Island. W/H-65 and Aviation Detachment; estimate 34 days endurance.
United States Coast Guard Sycamore -- Cordova	Charlie -- Cordova. Awaiting new governor from Seattle to complete repairs to #2 SSD generator. Pre-event Estimated time of Arrival was 96 hours by FEDEX ground.	Remains in Charlie status at pier. Require governor parts from Seattle for #2 Ships's Service Diesel Generator repair. Access highway closed, but 12 hour estimated time of return for Ships's Service Diesel Generator once parts are received. Capable of getting under way with #1Ships's Service Diesel Generator. Tsunami impacts only if still in port at 10:00 a.m. on Friday, March 28: Charlie with jammed rudder and suspected Controllable Pitch Propeller damage due to tsunami impact at moorings. Tsunami near limit of tidal range. Rudder struck bottom while in trough of tsunami.
United States Coast Guard Hickory -- Homer	Charlie (Homer Spit)	Adrift with crew in Kachemak Bay Grounding is imminent approximately 2 hours Estimated time of arrival 3 hours to regain propulsion.
United States Coast Guard Roanoke Island -- Homer	B-2 (Homer Spit)	Adrift with crew in Kachemak Bay. Able to start engines. Crew able to start engines to prevent grounding, then assist as directed.

Table 12. United States Coast Guard Unit Statuses

United States Coast Guard		
United States Coast Guard Alex Haley -- Kodiak	B-12 Kodiak (Womens Bay)	10:58 a.m. tsunami breaks moorings and set aground on tarmac 15' SW of C-130 hanger, blocking the taxiway. Minor injuries to crew. Remains aground after the 6.5-magnitude aftershock on the March 28, blocking taxiway. Will require long-term salvage planning.
United States Coast Guard Munro -- Kodiak	A: U/W Sitkinof Strait with H-65 and AVDET	Underway as before and available for tasking. Estimated 18 days endurance. Crew total does not include Aviation Detachment.
United States Coast Guard SPAR -- Kodiak	A: U/W Sitkinak Strait	A: Underway Sitkinak Strait. As utilized; no casualties.
United States Coast Guard Long Island -- Valdez	Charlie (Valdez)	Charlie (Valdez). No communications with outside for 24 hours.
United States Coast Guard Maple -- Sitka	B-2 (hanger); B-0 (tarmac) Charlie: ASD Shipyard Ketchikan	B-2 (hanger); B-0 (tarmac). Charlie: ASD Shipyard Ketchikan.
United States Coast Guard Mustang -- Seward	Charlie (Ketchikan Shipyard)	Charlie (Ketchikan Shipyard).
Marine Safety Detachment Homer	Workday routine.	Expect to be determined injuries and damage.
Marine Safety Detachment Kodiak	Workday routine.	Expect to be determined injuries and damage.
Marine Safety Unit Valdez	Workday routine.	No communications with outside for 24 hours.
Sector Anchorage	Workday routine. (15% leave/Temporary Additional Duty/Sick in Quarters)	10% isolated from dependents. 10% unable to contact dependents.
Coast Guard Station Valdez	(2) 45' Response Boat-Medium are fully mission capable/available; 25' RBS is winterized on trailer.	(2) 45' Response Boat-Medium are fully mission capable/available; 25' RBS is winterized on trailer.

4.5.1.7 Dams

Table 13. Dams Damage

Dams					
Community	Name	USNG	Damage Level	Damage Status	Description
Kodiak	Upper Reservoir Dam	5V NE 35547 07168	Major	Reduced	The upper reservoir dam is compromised and may break apart causing flooding in a residential neighborhood.

4.5.1.8 Other Facilities

Table 14. Damage to Other Facilities

Other Buildings						
Community	Name	USNG	Address	Damage Level	Damage Status	Description
Anchorage	Dena'ia Civic and Convention Center	6V UN 44535 90235	600 W 7th Ave	Major	Not Operational	Sustains heavy damage and is considered unsafe. There is a loss of power, windows are broken, and doorways are bent out of shape. The concrete siding is cracked and some of the debris is blocking 7 th Avenue between G and F Streets; glass and debris from the building have crushed cars parked along F Street. There are three Dead on Arrival at the scene.
Anchorage	William A. Eagan Civic and Convention Center	6V UN 44649 90468	555 W 5th Ave	Moderate	Reduced	The Eagan Center has damage to the front of the building; glass is broken and doors are unable to be used. There is broken glass and debris along the sidewalk and into 5th Avenue. There is a loss of power and heat to the facility.
Anchorage	Sullivan Arena	6V UN 45693 88946	1600 Gambell St	None	Operational	Sullivan Arena is reporting no damage, all power and water is on.
Anchorage	Fairview Recreation Center	6V UN 46260 89845	1121 E 10th Ave	None	Reduced	Fairview Recreation Center is reporting no damage but they have no power at this time.
Cordova	Red Dragon	6V WN 68153 12464	Lake Ave	Complete	Not Operational	The roof collapsed on the Red Dragon Community Building. There is a troop of girl scouts trapped and injured inside. Unknown number of victims; estimates indicate 10 to 20.
Cordova	Bidarki Recreation Center	6V WN 68218 12854	401 Council Ave	None	Operational	Recreation Center is undamaged and a suitable shelter location.
Cordova	Cordova Community Baptist Church	6V WN 68174 12726	701 2nd Street	None	Operational	Church is undamaged and a suitable shelter location.

Table 14. Damage to Other Facilities

Other Buildings						
Seward	Sealife Center	6V UM 64253 65083	301 Railway Ave	Major	Not Operational	Severely damaged, all wildlife at risk.
Valdez	Valdez Harbor Area	6V WN 35304 77128	255 N Harbor Dr	Major	Not Operational	Major destruction occurs to all harbor-area facilities. The canneries and SERV buildings are destroyed by the tsunami wave.

4.5.2 Consequences to Emergency Services

- Many fire, law enforcement, and Emergency Medical Service facilities have sustained damage and have limited communication capabilities.
- Information and specific intelligence about the disaster is spotty and unreliable.
- Facilities with emergency generators are able to partially and temporarily compensate for disruptions in commercial power. Generator-dependent facilities will require fuel to continue operations.
- Significant numbers of off-duty first responders are not available for immediate recall to duty due to communications disruptions and infrastructure damage. Others need to tend to injured family members and damaged homes before reporting for duty.
- Fire departments and other first responders in minimally-affected surrounding areas are mobilizing and offering mutual aid support.
- Law enforcement personnel are stretched extremely thin as they are:
 - Participating in rescue operations
 - Performing damage assessments
 - Providing security at critical sites
 - Performing traffic control duties

Table 15 through Table 18 provide information on the status of emergency services.

4.5.2.1 Emergency Operations Centers

Table 15. Emergency Operations Center Damage

Emergency Operations Centers					
Community	Name	USNG	Damage Level	Damage Status	Description
Anchorage	Municipality Of Anchorage Office Of Emergency Operations	6V UN 44715 89497	None	Operational	Operational with minimal staffing.
Bethel	Bethel Emergency Operations Center	4V CN 49376 42248	None	Operational	No damage.
Cordova	Cordova EOC	6V WN 68001 12648	Moderate	Not Operational	City Hall has significant water damage from broken water main, moderate structural damage, and loss of power. Threat of local tsunami is high. Emergency Operations Center will need to relocate immediately to the alternate Emergency Operations Center.

Table 15. Emergency Operations Center Damage

Emergency Operations Centers					
Community	Name	USNG	Damage Level	Damage Status	Description
Fairbanks	Fairbanks North Star Borough Emergency Operations Center	6W VS 63076 88489	None	Operational	No significant damage.
Fort Greely	Fort Greely Emergency Operations Center	6V WR 70943 87232	None	Operational	No significant damage.
Fort Richardson	State Emergency Operations Center	6V UN 58565 95712	None	Operational	No damage.
Homer	Homer Emergency Operations Center	5V NG 82744 13034	Minor	Operational	Minor damage; facility is operational.
Joint Base Elmendorf-Richardson	Joint Base Elmendorf-Richardson Emergency Operations Center	6V UN 49447 94024	None	Operational	Operational but on generator power; requires survey.
Juneau	Juneau Emergency Operations Center	8V NK 28773 68422	None	Operational	No significant damage.
Ketchikan	Ketchikan Emergency Operations Center	9U UB 32082 36089	None	Operational	No significant damage.
Kodiak	Kodiak Island Borough Emergency Operations Center	5V NE 35790 05747	Moderate	Reduced	There is reduced capability due to moderate damage from the earthquake, but no structural damage is reported.
North Pole	North Pole Emergency Operations Center	6W VS 83282 81199	None	Operational	No significant damage.
Seward	Seward Emergency Operations Center	6V UM 64389 65411	Minor	Operational	Minor structural damage, but operational. After two days, generator power is lost and must transition to an alternate site.
Sitka	Sitka Emergency Operations Center-Alternate	8V MJ 78727 24612	None	Operational	No damage.
Sitka	Sitka Emergency Operations Center	8V MJ 79700 23253	None	Operational	No damage.
Soldotna	Kenai Peninsula Emergency Response Center	5V PH 05883 06796	None	Operational	No damage.
Unalaska	Unalaska Emergency Operations Center	3U UV 98816 70481	None	Operational	No significant damage.
Valdez	Valdez Emergency Operations Center	6V WN 34648 77047	None	Operational	The City Emergency Operations Center is operational at the Civic Center with staffing as the unified command.
Wasilla	Wasilla Emergency Operations Center	6V UP 72218 29261	None	Operational	No damage.

Table 15. Emergency Operations Center Damage

Emergency Operations Centers					
Community	Name	USNG	Damage Level	Damage Status	Description
Wasilla	Matanuska-Susitna Borough Emergency Operations Center	6V UP 74681 30364	None	Operational	No damage.
Wasilla	Matanuska-Susitna Borough Emergency Operations Center-Alternate	6V UP 69847 30280	None	Operational	No damage.

4.5.2.2 Emergency Medical Services

Table 16. Emergency Medical Services Damage

Emergency Medical Services						
Community	Name	USNG	Address	Damage Level	Damage Status	Description
Anchorage	Anchorage	6V UN 44256 90380	901 W 6th Ave	Minor	Operational	Minor damage and loss of power. Emergency Medical Service units are having difficulty moving around the city due to debris on the roads.
Cordova	Cordova	6V WN 68000 12650	502 Railroad Ave	Moderate	Reduced	Cordova Fire and Emergency Medical Services Station suffer moderate damage and a loss of power. Fire/Emergency Medical System bay doors on west side are unable to open.
Fairbanks	Fairbanks	6W VS 65702 91220	729 1st Ave	None	Operational	No significant damage.
Fort Greely	Fort Greely	6V WR 70943 87232	Fort Greely	None	Operational	No significant damage.
Homer	Homer	5V NG 97913 24401	53048 Ashwood Ave	Minor	Operational	Minor, facility is operational.
Joint Base Elmendorf-Richardson	Joint Base Elmendorf-Richardson	6V UN 49447 94024	Slammer Ave	None	Operational	Operational – no damage.
Juneau	Juneau	8V NK 34189 62259	449 W Willoughby Ave	None	Operational	No significant damage.
Kenai Peninsula Borough	Kenai Peninsula Borough	5V NH 97066 14930	Walker Lane	None	Operational	No damage.
Ketchikan	Ketchikan	9U UB 30506 36994	Hemlock St	None	Operational	No damage.
Kodiak	Kodiak	5V NE 35349 05662	219 Lower Mill Bay Rd	Minor	Reduced	Reduced capability. Units are having difficulty moving around the Island due to debris in the roadway.
Matanuska-Susitna Borough	Matanuska-Susitna Borough	6V UQ 66667 21403	Matanuska-Susitna Borough	None	Reduced	No damage to facilities, but operations are affected by damage in the area and Emergency Medical Services units are having difficulty getting to where they are needed.
Northpole	Northpole	6W VS 83251 80762	450 N Santa Claus Ln	None	Operational	No significant damage.
Seward	Seward	6V UM 64208 66469	200 D St	Major	Not Operational	The ambulance core building is severely damaged and is inoperable. Two of three ambulances are severely damaged and are not

Table 16. Emergency Medical Services Damage

Emergency Medical Services						
Community	Name	USNG	Address	Damage Level	Damage Status	Description
						operational.
Unalaska	Unalaska	3U UV 99630 72253	Unalaska	None	Operational	No significant damage.
Valdez	Valdez	6V WN 34745 77505	212 Pioneer Dr	None	Operational	Emergency Medical Services personnel are responding to all areas of the community.

4.5.2.3 Police Departments

Table 17. Police Department Damage

Police Departments						
Community	Name	USNG	Address	Damage Level	Damage Status	Description
Anchorage	Alaska Department Of Public Safety	6V UN 50733 85978	5700 East Tudor Road	Minor	Operational	No significant damage.
Anchorage	Anchorage Police Department	6V UN 49120 86016	4501 Elmore Road	Moderate	Reduced	Significantly impacted, affecting operations.
Anchorage	University Of Alaska Anchorage Police Department	6V UN 47767 87101	2601 Providence Drive	Minor	Operational	No significant damage.
Anchorage	Alaska State Troopers - Anchorage Headquarters	6V UN 50733 85979	5700 East Tudor Road	Minor	Operational	No significant damage.
Anchorage	Anchorage Police Department Russian Jack	6V UN 49160 89031	1569 Bragaw Street	Moderate	Reduced	Significantly impacted, affecting operations.
Anchorage	Neighborhood Crime Watch	6V UN 49033 85965	4501 South Bragaw Street	Minor	Operational	No significant damage.
Anchorage	Anchorage Police Department Alaska Regio	6V UN 48161 89457	2801 Debarr Road	Minor	Operational	No significant damage.
Cooper Landing	Alaska State Troopers - Cooper Landing	6V UN 43077 09279	1900 Bean Creek Road	Minor	Operational	No significant damage.
Cordova	Alaska State Troopers - Cordova	6V WN 67983 12684	711 1st Street	Moderate	Not Operational	Police Station suffers moderate damage and a loss of power. Water mains have broken and water is spraying all over everything.
Cordova	National Park Service - Chugach National	6V WN 68080 12300	612 2nd Street	Moderate	Reduced	Moderate damage and are not fully operational.

Table 17. Police Department Damage

Police Departments						
Community	Name	USNG	Address	Damage Level	Damage Status	Description
Fairbanks	Fairbanks	6W VS 65810 90738	911 Cushman St	None	Operational	No damage.
Fort Greely	Fort Greely	6V WR 61445 92437	Building 663, First Street	None	Operational	No damage.
Girdwood	Alaska State Troopers - Girdwood	6V UN 82334 58126	Alyeska Highway	Minor	Operational	No significant damage.
Homer	Homer Police Department	5V NG 82894 13278	4060 Heath Street	Complete	Not Operational	Major damage, not operational.
Joint Base Elmendorf-Richardson	Joint Base Elmendorf-Richardson Police Department	6V UN 55311 95025	656 A St	None	Operational	No damage.
Juneau	Juneau	8V NK 28784 68425	6255 Alaway Avenue	None	Operational	No damage.
Kenai	Kenai Police Department	5V NH 95978 14997	107 South Willow Street	None	Operational	No damage.
Ketchikan	Ketchikan	9U UB 32100 36131	361 Main St	None	Operational	No damage.
Kodiak	Alaska State Troopers - Kodiak	5V NE 37889 07836	2921 Mill Bay Road	Moderate	Reduced	Some structural damage.
Kodiak	Kodiak Police Department	5V NE 35366 05563	217 Lower Mill Bay Road	Moderate	Reduced	15% to 20% of infrastructure is damaged from the initial event. Some impact on Police operations. The ceiling tiles fall, causing initial disarray in the 911 center.
Matanuska-Susitna	Matanuska-Susitna	6V UQ 66667 21403	Matanuska-Susitna	None	Operational	No damage.
Northpole	Northpole	6W VS 83268 81178	125 Snowman Ln	None	Operational	No damage.
Seward	National Park Service - Chugach National	6V UM 64344 65555	334 Fourth Avenue	Moderate	Reduced	Some structural damage.
Seward	Alaska State Troopers - Seward	6V UM 64396 65404	410 Adams Street	Moderate	Reduced	Some structural damage.
Seward	Seward Police Department	6V UM 64396 65404	410 Adams Street	Moderate	Reduced	Moderate damage and are not fully operational.
Soldotna	Alaska State Troopers - Soldotna	5V PH 05018 05760	46333 Kalifornsky Beach Road	Minor	Operational	No significant damage.
Unalaska	Unalaska	3U UV 98629 70301	29 Safety Way	None	Operational	No damage.
Valdez	Alaska State Troopers - Valdez	6V WN 35051 77495	Meals Avenue	Minor	Operational	No significant damage.
Valdez	Valdez Police Department	6V WN 34863 77466	212 Chenega Avenue	Major	Reduced	Police structures are significantly damaged, effecting operations.
Whittier	Whittier Police Department	6V VN 08182 38685	100 Kenai Street	Moderate	Reduced	Some structural damage.

4.5.2.4 Fire Departments

Table 18. Fire Department Damage

Fire Departments						
Community	Name	USNG	Address	Damage Level	Damage Status	Description
Anchorage	Anchorage Fire Department Battalion 2 -	6V UN 50919 79698	6151 Omalley Road	Minor	Operational	No significant damage.
Anchorage	Anchorage Fire Department Battalion 2 -	6V UN 45919 78220	1148 Huffman Road	Minor	Operational	No significant damage.
Anchorage	Anchorage Fire Department Battalion 2 -	6V UN 51579 75508	14861 Mountain Air Drive	Minor	Operational	No significant damage.
Anchorage	Anchorage Fire Department Battalion 2 -	6V UN 46187 82728	7920 Homer Drive	Minor	Operational	No significant damage.
Anchorage	Anchorage Fire Department Battalion 3 -	6V UN 46768 86319	4350 Macinnes Street	Minor	Operational	No significant damage.
Anchorage	Anchorage Fire Department Battalion 3 -	6V UN 52392 89214	1301 Patterson Street	Minor	Operational	No significant damage.
Anchorage	Anchorage Fire Station 1	6V UN 44223 91113	122 East 4th Ave	Minor	Reduced	West bay doors are damaged and unable to open.
Anchorage	Anchorage Fire Station 10	6V UN 51572 75512	14861 Mountain Air Dr	Minor	Reduced	Loss of Power.
Anchorage	Anchorage Headquarters	6V UN 44223 91113	100 East 4th Ave	Major	Not Operational	Windows blown out. West stairwell bent and unusable.
Chenega Bay	Chenega Bay Volunteer Fire Department	6V VM 43758 59187	623 Main Street	Moderate	Reduced	Some structural damage.
Cooper Landing	Cooper Landing Emergency Services	6V UN 45635 09207	Snug Harbor Road	Minor	Operational	No significant damage.
Cordova	Cordova Fire and EMS Station	6V WN 68430 12466	602 Railroad AVE	Moderate	Reduced	No power and west side bay doors do not open.
Eagle River	South Fork Volunteer Fire Department Inc	6V UN 69355 90308	Hiland Road	Minor	Operational	No significant damage.
Fairbanks	Fairbanks Fire	6W VS 65922 90627	1101 Cushman St	None	Operational	No damage.
Fort Greely	Fort Greely	6W WR 62285 99620	Building 504, First Street	None	Operational	No damage.
Fort Richardson	Fort Richardson Fire And Emergency Servi	6V UN 57174 94376	Fort Richardson Military Reservation	Minor	Operational	No significant damage.

Table 18. Fire Department Damage

Fire Departments						
Community	Name	USNG	Address	Damage Level	Damage Status	Description
Girdwood	Anton Anderson Memorial Tunnel Fire Brig	6V VN 01800 40588	Portage Glacier Road	Moderate	Reduced	Some structural damage.
Girdwood	Girdwood Fire Department	6V UN 84501 60488	186 Egloff Drive	Minor	Operational	No significant damage.
Homer	Homer Volunteer Fire Department	5V NG 82815 13080	604 East Pioneer Avenue	Minor	Operational	Minor damage; facility is still operational.
Hope	Hope Sunrise Volunteer Fire Department /	6V UN 58233 56760	19925 Hope Highway	Minor	Operational	No significant damage.
Joint Base Elmendorf-Richardson	Joint Base Elmendorf-Richardson Fire	6V UN 58540 91754	100 East 4th Ave	None	Operational	Operational - no damage.
Juneau	Juneau Fire	8V NK 33880 62367	820 Glacier Ave	None	Operational	No significant damage.
Karluk	Native Village Of Karluk Fire Department	5V MD 13565 80604	Alex Brown Street	Minor	Operational	No significant damage.
Kenai	Kenai Fire Department	5V NH 95996 14973	105 South Willow Street	None	Operational	No damage.
Ketchikan	Ketchikan Fire	9U UB 29449 37593		None	Operational	No significant damage.
Kodiak	City Of Kodiak Fire Department	5V NE 35376 05574	219 Lower Mill Bay Road	Moderate	Reduced	Some structural damage.
Kodiak	Kodiak Island Burrough Fire Protection D	5V NE 38248 09184	4606 Rezanof Drive East	Moderate	Reduced	Overhead doors damaged, Emergency Medical Service equipment cannot get out for response operations.
Kodiak	United States Coast Guard Fire And Rescu	5V NE 29882 00895	Dolphin Avenue	Moderate	Reduced	Some structural damage.
Kodiak	Womens Bay Volunteer Fire Department	5V ND 25149 97221	538 Sargent Creek Road	Moderate	Reduced	Some structural damage.
Larsen Bay	Larsen Bay Volunteer Fire Department	5V MD 41097 77537	609 3rd Street	Minor	Operational	No significant damage.
Moose Pass	Moose Pass Volunteer Fire And Emergency	6V UN 69764 08016	Mile Post 29 1/2 Seward Highway	Moderate	Reduced	Some structural damage.
Nanwalek	Nanwalek Volunteer Fire Department	5V NF 61530 80352	Nikita Street	Minor	Operational	No significant damage.
Northpole	Northpole	6W VS 83026 81232	110 Lewis St, North Pole	None	Operational	No damage.
Old Harbor	Old Harbor Volunteer Fire Department	5V MD 82712 40742	12 Elderberry Street	Moderate	Reduced	Some structural damage.

Table 18. Fire Department Damage

Fire Departments						
Community	Name	USNG	Address	Damage Level	Damage Status	Description
Ouzinkie	Ouzinkie Volunteer Fire Department	5V NE 28651 19961	3rd Street	Minor	Reduced	Broken windows.
Port Graham	Port Graham Volunteer Fire Department	5V NF 66664 79298	63755 Graham Road	Minor	Operational	No significant damage.
Port Lions	Port Lions Department Of Public Safety	5V NE 06528 13829	441 Bayview Drive	Moderate	Reduced	Some structural damage.
Seldovia	Seldovia Village Tribe Barabara Heights	5V NF 74819 92389	Mile Post 4 Jakolof Bay Road	Minor	Operational	No significant damage.
Seldovia	Seldovia Volunteer Fire And Emergency Me	5V NF 72927 89584	259 Lipke Lane	Minor	Operational	No significant damage.
Seward	Bear Creek Fire Department	6V UM 66691 72565	Seward Highway	Moderate	Operational	No significant damage.
Seward	Lowell Point Volunteer Fire Department	6V UM 63870 62380	13913 Lowell Point Road	Minor	Reduced	No significant damage.
Seward	Seward Fire Department	6V UM 64352 65476	316 4th Avenue	Slight	Operational	Minor structural damage.
Talkeetna	Talkeetna And Palmer-Fishhook Stations 3-9	5V PK 51406 03366	630 E. Steel Loop	Complete	Not Operational	Partial Collapse.
Tatitlek	Tatitlek Fire Department	6V WN 17570 47994	Hillside Drive	Moderate	Reduced	Some structural damage and broken windows.
Unalaska	Unalaska Fire	3U UV 98629 70300	29 Safety Way	None	Operational	No damage.
Valdez	Alyeska Pipeline Service Company Fire An	6V WN 32267 72112	300 Dayville Road	Minor	Operational	No significant damage.
Valdez	Valdez Fire Department Station 1	6V WN 34863 77466	212 Chenega Avenue	Minor	Operational	No significant damage.
Valdez	Valdez Fire Department Station 3	6V WN 43132 73373	114 River Drive	Minor	Operational	No significant damage.
Valdez	Valdez Fire Department Station 4	6V WN 53287 70243	5040 Richardson Highway	Minor	Operational	No significant damage.
Whittier	Whittier Volunteer Fire Department	6V VN 08256 38802	Whittier Street	Moderate	Reduced	No significant damage.

4.5.3 Consequences to Transportation

The following section describes damage to roads and bridges, ports, ferries, railroads, and airports and runways in the affected region.

4.5.3.1 Roads and Bridges

- All bridges and roads in Southcentral Alaska have sustained extensive damage.
- Immediately after the earthquake, abandoned vehicles clog many roads in the affected area, hampering first responder movement.
- The initial earthquake will require the inspection of all roads, bridges, and overpasses north of Anchorage to the Knik River Bridge and south of Anchorage to the Kenai Peninsula before they can be reopened for other than emergency traffic.⁵
- Each subsequent aftershock will necessitate the reinspection of all roads, bridges, and overpasses within the affected area.

Table 19 lists the status of roads and bridges in Alaska.

Table 19. Alaska Road and Bridge Damage

Roads and Bridges					
Community	Name	USNG	Damage Level	Damage Status	Description
Anchorage	7th Ave & E Street	6V UN 44658 90240	Major	Not Operational	Atwood Building debris (glass from building) in road way blocking 7th Avenue between F and E Streets.
Anchorage	7th Ave & G Street	6V UN 44488 90190	Major	Not Operational	Conoco Building debris has blocked G Street between 7th and 8th Avenues.
Anchorage	5th Ave and C Street	6V UN 44937 90447	Major	Not Operational	Debris from collapse of Sky bridge over 5th Ave and C Street is blocking roadway.
Anchorage	6th Ave and D Street	6V UN 44790 90344	Major	Not Operational	Debris from collapse of sky bridge at 6th Ave between E and D street blocking roadway.
Anchorage	5th Ave and K Street	6V UN 44225 90478	Major	Not Operational	Debris from the Capt. Cook Hotel is in the roadway of 5th Avenue between K and I Streets. APD reports 3 DOAs from falling debris.
Anchorage	M Street	6V UN 43948 90633	Major	Not Operational	Debris form hillside at M street is blocking rail road tracks.
Anchorage	3rd Ave and F Street	6V UN 44677 90678	Major	Not Operational	Debris from Hilton Hotel is blocking 3rd Ave between F and E street.
Anchorage	36th Ave and A Street	6V UN 45019 87146	Moderate	Reduced	Frontier Building debris and broken glass from the building is in 36th ave and A Street
Anchorage	6th Avenue between C and A Streets	6V UN 44956 90337	Minor	Reduced	The statue in front of the museum is partially blocking 6th ave between C and A streets
Anchorage	Spenard Rd and Fireweed Ln	6V UN 43875 88411	Moderate	Reduced	Intersection signal lights are out

⁵ A map of the inspection zone and the road and bridge status can be found in the controller portion of the Capstone Collaboration Tool.

Table 19. Alaska Road and Bridge Damage

Roads and Bridges					
Community	Name	USNG	Damage Level	Damage Status	Description
Anchorage	Arctic Blvd and Fireweed Ln	6V UN 44276 88369	Moderate	Reduced	Intersection signal lights are out
Anchorage	C Street and Fireweed Ln	6V UN 44866 88308	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 1229	6V UN 44003 90801	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 1230	6V UN 44789 90766	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 1231	6V UN 45599 90722	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 1328	6V UN 43177 90030	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 1329	6V UN 43986 89995	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 1330	6V UN 44753 89961	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 1331	6V UN 45575 89924	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 1332	6V UN 46379 89888	Moderate	Reduced	Intersection signal lights are out
Anchorage	Airport Heights Dr and Glenn Hwy	6V UN 48204 90305	Moderate	Reduced	Intersection signal lights are out
Anchorage	Airport Heights Dr and Debarr Road	6V UN 48340 89425	Moderate	Reduced	Intersection signal lights are out
Anchorage	International Airport Rd and Fairbanks	6V UN 45499 85521	Moderate	Reduced	Intersection signal lights are out
Anchorage	International and Old Seward Hwy	6V UN 45758 85507	Moderate	Reduced	Intersection signal lights are out
Anchorage	48th and Old Seward Hwy	6V UN 45773 85907	Moderate	Reduced	Intersection signal lights are out
Anchorage	Tudor Rd and Old Seward Hwy	6V UN 45789 86302	Moderate	Reduced	Intersection signal lights are out
Anchorage	Tudor Rd and Lake Otis Pkwy	6V UN 47405 86241	Moderate	Reduced	Intersection signal lights are out
Anchorage	Old Seward Hwy and Klatt Road	6V UN 45705 79068	Moderate	Reduced	Intersection signal lights are out
Anchorage	Huffman Road and Lake Otis Pkwy	6V UN 47279 78192	Moderate	Reduced	Intersection signal lights are out
Anchorage	Wisconsin St and Northern Lights Blvd	6V UN 41848 88099	Moderate	Reduced	Intersection signal lights are out
Anchorage	Minnesota Dr and Northern Lights Blvd	6V UN 43447 88029	Moderate	Reduced	Intersection signal lights are out
Anchorage	Minnesota Dr and Raspberry Rd	6V UN 43170 84221	Major	Not Operational	Off ramp of Minnesota bypass and raspberry, large traffic accident has blocked roadway; 6 to 8 vehicles are blocking southbound off ramp. Traffic has backed up on Minnesota.
Anchorage	Abbott Road and Abbott Loop Road	6V UN 48337 82357	Moderate	Reduced	Intersection signal lights are out
Anchorage	O'Malley Rd and Abbott Loop Road	6V UN 48337 82357	Moderate	Reduced	Intersection signal lights are out

Table 19. Alaska Road and Bridge Damage

Roads and Bridges					
Community	Name	USNG	Damage Level	Damage Status	Description
Anchorage	O'Malley Rd and Birch Road	6V UN 50558 79663	Moderate	Reduced	Intersection signal lights are out
Anchorage	Potter Heights Dr and Miller Rd	6V UN 51041 71143	Major	Reduced	Road damage at Potter Heights Dr and Miller road, road heave makes the road unable to navigate except small 4x4's.
Anchorage	Minnesota Dr and International Airport Rd	6V UN 43126 85503	Major	Not Operational	Over pass at Minnesota and International Airport road has significant damage, unsafe to use bridge for traffic. APD is requesting jersey barriers to block off highway. They have one patrol officer on scene and have flares out.
Anchorage	Minnesota Dr and Tudor Rd	6V UN 43368 86415	Major	Reduced	Traffic light at Tudor and Minnesota – flashing must use as a 4 way stop, Minnesota drive is blocked off by APD just south of Tudor.
Anchorage	Arctic Blvd and Tudor Rd	6V UN 44184 86377	Moderate	Reduced	Traffic light at Arctic and Tudor is flashing yellow- four way stop rules, no APD on scene.
Anchorage	Grid 2025	6V UN 40796 84522	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2026	6V UN 41600 84486	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2027	6V UN 42404 84451	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2028	6V UN 43209 84415	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2029	6V UN 44012 84378	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2030	6V UN 44764 84344	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2031	6V UN 45517 84312	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2032	6V UN 46321 84277	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2125	6V UN 40760 83717	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2126	6V UN 41565 83681	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2127	6V UN 42368 83646	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2128	6V UN 43172 83610	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2129	6V UN 43976 83574	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2130	6V UN 44731 83540	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2131	6V UN 45484 83508	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2132	6V UN 46288 83473	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2225	6V UN 40724 82913	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2226	6V UN 41529 82875	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2227	6V UN 42332 82839	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2228	6V UN 43136 82804	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2229	6V UN 43941 82769	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2230	6V UN 44697 82736	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2231	6V UN 45452 82704	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2232	6V UN 46255 82669	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2234	6V UN 47862 82600	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2235	6V UN 48666 82564	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2324	6V UN 39883 82146	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2325	6V UN 40689 82108	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2326	6V UN 41493 82071	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2327	6V UN 42298 82035	Moderate	Reduced	Intersection signal lights are out

Table 19. Alaska Road and Bridge Damage

Roads and Bridges					
Community	Name	USNG	Damage Level	Damage Status	Description
Anchorage	Grid 2328	6V UN 43102 81999	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2329	6V UN 43906 81964	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2427	6V UN 42263 81231	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2428	6V UN 43067 81195	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2429	6V UN 43872 81160	Moderate	Reduced	Intersection signal lights are out
Anchorage	36th Ave and Arctic Blvd	6V UN 44665 87171	Major	Not Operational	West bound lanes of 36th Ave from Arctic to A street is blocked by down power lines.
Anchorage	Grid 2436	6V UN 49401 80922	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2437	6V UN 50205 80888	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2438	6V UN 51010 80853	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2439	6V UN 51813 80818	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2440	6V UN 52617 80785	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2441	6V UN 53422 80752	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2536	6V UN 49369 80118	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2537	6V UN 50172 80084	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2538	6V UN 50976 80049	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2539	6V UN 51780 80015	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2540	6V UN 52584 79981	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2541	6V UN 53389 79948	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2634	6V UN 47729 79384	Moderate	Reduced	Intersection signal lights are out
Anchorage	Grid 2641	6V UN 53355 79145	Moderate	Reduced	Intersection signal lights are out
Anchorage	6th Ave and C Street	6V UN 44956 90337	Moderate	Not Operational	Statue in front of museum is partially blocking 6th avenue between C and A street.
Anchorage	6th Ave and F Street	6V UN 44558 90354	Major	Not Operational	City Hall debris (glass and structures) have blocked roadway of 6th Ave between F and G street.
Anchorage	7th Ave and F Street	6V UN 44544 90243	Major	Not Operational	Debris has blocked roadway on 7th Ave between G and F street, glass and debris have crushed cars parked along F street. 3 DOA from falling debris.
Anchorage	Whittier Tunnel/Portage Glacier Hwy	6V VN 00709 40617	Major	Not Operational	The Anton Andersen Memorial tunnel to Whittier is closed by landslide between the 1st and 2nd tunnels. Placer Creek.
Cordova	Copper River Highway	6V WN 73507 11863	Major	Not Operational	An avalanche is reported across the Copper River Highway at mile 2.5. Due to debris covering the roads makes them impassable.
Cordova	Copper River Highway	6V WN 62409 07809	Moderate	Reduced	There is a car over the edge at mile 5 on Whitshed Road.
Cordova	Chase Avenue	6V WN 68346 12314	Moderate	Not Operational	Chase Avenue blocked by fallen trees.
Cordova	Whitshed Road	6V WN 67121 11460	Moderate	Not Operational	Whitshed Road at the LDS Church is blocked by trees.
Eielson AFB	General Summary	6W VS 95642 72317	Minor	Reduced	Surface delivery of all classes of supply from Anchorage disrupted by damage to Alaska Railroad, Glenn Highway, and Parks Highway.

Table 19. Alaska Road and Bridge Damage

Roads and Bridges					
Community	Name	USNG	Damage Level	Damage Status	Description
Fairbanks	General Summary	6W VS 66013 90568	None	Operational	No Damage
Fort Greely	General Summary	6V WR 70751 86622	None	Operational	No Damage
Fort Wainwright	General Summary	6W VS 70849 90486	Minor	Reduced	Surface delivery of all classes of supply from Anchorage disrupted by damage to Alaska Railroad, Glenn Highway, and Parks Highway.
Hope	Hope Highway	6V UN 56535 56720	Major	Not Operational	Highway closed for debris removal including two bridges south of Hope cut-off that are destroyed and impassable. Repair estimates indicate temporary opening in 30 to 60 days.
JBER	Arctic Warrior Dr	6V UN 50083 92652	Moderate	Not Operational	Arctic Warrior at the end of the runway is covered by dirt.
JBER	Grady Road (Ship Creek Bridge)	6V UN 54701 92643	Major	Not Operational	Visible cracks in the bridge across Ship Creek on Grady Road
Juneau	General Summary	8V NK 34030 62466	None	Operational	No Damage
Kenai	Seward Hwy (Canyon Creek Bridge)	6V UN 67760 40767	Major	Not Operational	Damage to Canyon Creek Bridge closes the bridge near the Hope cut-off shuts off the KPB from Anchorage.
Kenai	Bridge Access Rd (Warren Ames Bridge)	5V NH 98297 11405	Major	Not Operational	Major structural damage to the Warren Ames Bridge between Kenai and Soldotna.
Kenai	Kenai Area	5V NH 95550 13797	Major	Not Operational	Traffic must go around Warren Ames and Kenai River bridges
Kenai	Sterling Highway (Cooper Landing)	6V UN 45633 09521	Major	Not Operational	Approaches to bridges in Cooper Landing are cracked and trenched all along the Sterling Highway east of Kenai. Suspect many more bridges are not passable.
Kenai	Sterling Highway (Hwy 1)	6V UN 48359 09698	Major	Not Operational	Multiple landslides along Highway 1 and Highway 9 from summit to just outside Seward and just north of Copper Landing.
Kenai	Seward Highway (Hwy 9)	6V UM 70459 95322	Major	Not Operational	Multiple landslides along Highway 1 and Highway 9 from summit to just outside Seward and just north of Copper Landing.
Ketchikan	Tongass Highway (Ward Creek Bridge)	9U UB 27914 43495	Major	Not Operational	Ward Creek Bridge is closed due to substantial structural damage. A major car accident closes road northwest of Ward Creek Bridge.
Kodiak	Rezanof Drive	5V ND 28811 99447	Major	Not Operational	The highway will not be operational after the initial earthquake and tsunami event due to debris and cracks in the road.
Kodiak	Rezanof Drive	5V NE 33781 04757	Major	Not Operational	Rezanof Drive between piers 2 and 3 are blocked due to a land slide.
Matanuska-Susitna	Railroad Avenue	6V UP 69900 29915	Major	Not Operational	Railroad Avenue is flooded from Lake Lucille.

Table 19. Alaska Road and Bridge Damage

Roads and Bridges					
Community	Name	USNG	Damage Level	Damage Status	Description
Matanuska-Susitna	Glenn Highway	6V UP 65343 07805	Minor	Reduced	The Glenn Highway is open for emergency use only and closed to all commercial and personal travel.
Matanuska-Susitna	Old Glenn Highway	6V UP 91539 28748	None	Operational	The Old Glenn Highway is open from Palmer to the Butte.
Matanuska-Susitna	Glenn Highway (Palmer-Fishhook Road)	6V UP 87592 34594	Moderate	Not Operational	Closed at Palmer-Fishhook Road—roadway subsidence
Matanuska-Susitna	Glenn Highway (mi-69 Chickaloon)	6V VP 10633 45869	Major	Not Operational	Closed at Chickaloon (mile 69) due to a land slide (covered by rocks and mud) and isolates part of the valley.
Matanuska-Susitna	Glenn Highway (Maude Road and Plumly)	6V UP 91457 27263	Major	Not Operational	Closed from mile 13.5 to mile 15, Maude Road and Plumly in the Butte due to Ice Dam Flooding.
Matanuska-Susitna	Sushana Dr	6V UP 69723 37495	Major	Not Operational	In Houston, roads on the Castle Mountain Fault are damaged and closed
Matanuska-Susitna	Schrock Road	6V UP 69261 37255	Major	Not Operational	In Houston, roads on the Castle Mountain Fault are damaged (displaced with holes and cracks) and closed
Matanuska-Susitna	Parks/Glen Interchange is closed	6V UP 80561 26457	Major	Not Operational	Parks/Glen Interchange is closed due to damage sustained from the earthquake
Matanuska-Susitna	Knik River Road	6V UP 92953 20694	Major	Not Operational	Knik River Road is closed east of the Old Glenn Highway because of avalanche and landslide (covered with snow, rocks, and other debris)
Matanuska-Susitna	Glenn Highway (Matanuska River Bridge)	6V UP 80509 19963	Moderate	Not Operational	Glenn Highway bridges at the Matanuska River will remain closed cutting off the main route to Anchorage due to the required inspections.
Matanuska-Susitna	Parks Highway (Big Susitna River Bridge)	5V PJ 47061 96955	Moderate	Not Operational	The Parks Highway bridge at mile 100 at the Big Susitna River is closed for inspection.
Matanuska-Susitna	Parks Highway (Seward Meridian overpass)	6V UP 74668 28651	Major	Not Operational	The Parks Highway overpass at Seward Meridian suffers a partial collapse.
Matanuska-Susitna	Matanuska and Susitna River Bridges	6V UP 80237 21020	Moderate	Not Operational	Bridges over the Matanuska and Susitna rivers damaged and require inspection.
Matanuska-Susitna	Glenn Highway (Knik River Bridge)	6V UP 80081 18612	Moderate	Not Operational	There is debris on the Glenn Highway and the Knik River Bridge. Knik River Bridges enroute to Anchorage remain closed.
Matanuska-Susitna	Old Glenn Highway (Knik River Bridge)	6V UP 91791 20643	Moderate	Not Operational	Knik River Bridges enroute to Anchorage remain closed due to required inspections.

Table 19. Alaska Road and Bridge Damage

Roads and Bridges					
Community	Name	USNG	Damage Level	Damage Status	Description
Matanuska-Susitna	Old Glenn Hwy (Matanuska River Bridge)	6V UP 90002 32292	None	Operational	The George W, Palmer Memorial Bridge over the Matanuska River from Palmer to the Butte is open.
Matanuska-Susitna	Parks Highway (Big Susitna River Bridge, Talkeeta)	5V PK 42200 40209	Moderate	Not Operational	Big Susitna River Bridge north of Talkeeta remains closed for required inspection.
Matanuska-Susitna	Palmer Wasilla Highway	6V UP 72922 30072	Major	Not Operational	Liquefaction on the Palmer Wasilla Highway near Merchant Store is closed due to water, mud and instability of the road.
Matanuska-Susitna	Welch Road (Little Su River Bridge)	6V UP 77079 38696	Complete	Not Operational	Welch Road—the bridge over Little Su River has collapsed.
Matanuska-Susitna	Hatcher Pass	6V UP 51521 52670	Major	Not Operational	Hatcher Pass road closed due to a rock slide.
Matanuska-Susitna	Miller's Reach	6V UP 49102 34811	Major	Not Operational	Closed
Matanuska-Susitna	Three Bees Road	6V UP 56679 35562	Major	Not Operational	Closed
Matanuska-Susitna	Seldon Road	6V UP 74545 33449	Minor	Reduced	Seldon Road restricted to one lane in the Palmer and Wasilla areas.
North Pole	General Summary	6W VS 83368 80763	None	Operational	No Damage
Seward	Seward highway (Sterling)	6V UN 60626 13557	Major	Not Operational	Seward highway is out and closed due to avalanches near junction of Sterling and Seward Highway.
Seward	Seward highway	6V UM 65712 69647	Major	Not Operational	Bridges are out between town and the airport over Resurrection River.
Unalaska	General Summary	3U UV 99222 71754	None	Operational	No Damage
Valdez	Richardson Highway (Valdez)	6V WN 60373 73849	Major	Not Operational	The Richardson Highway will be closed from Glenn Allen to Valdez due to landslides and avalanches.

4.5.3.2 Ports

- A number of ports are significantly damaged and require both inspections and repairs to reopen.
- Ports experiencing tsunami are heavily clogged with debris of various types and sizes.
- The U.S. Coast Guard will need to conduct hydrographic survey of the shipping channels following the earthquake.
- Ports may experience unstable currents and be unsafe for certain types of vessels.
- Normal commercial traffic expected to arrive in port on Saturday may need to be rerouted based on identified damage.

Table 20 provides information on damage to ports in Alaska.

Table 20. Ports Damage

Ports					
Community	Name	USNG	Damage Level	Damage Status	Description
Anchorage	Port of Anchorage	6V UN 45114 92957	Moderate	Reduced	Port of Anchorage is reporting loss of power, some damage to facilities. Landslide from homes along Delaney Street has left homes just above the port damaged and in danger of sliding down the hillside. Ocean Dock Road has major heaves, but is passable; the port has secured operations and entrance to port at this time. Port of Anchorage personnel will inspect cranes and quays at the port facility. Inspections are expected to be completed within 48 hours. Cargo Terminal 1—moderate structural damage to Terminal/Quay—supporting dock/crane tracks rated to 50%. Cargo Terminal 2 and 3—Terminal/Quay completely collapsed. Crane 1—crane weight capacity reduced to 50% due to supporting dock limitation reduced to 15-ton capacity. Cranes 2 and 3—collapsed on Cargo Terminal 2. Berth Draft—sea floor lifting, depth reduced to -25 feet Mean Low Water—accommodates ships requiring 20 feet of draft (normally the Port of Anchorage will accommodate a ship with 30-foot draft). Gantry Cranes derailed and non-operational; estimated 60+ days to repair. Container pier non-operational due to corroded piers (failure); estimated 3 months to 1 year to repair. Horizon pier has reduced operational capability; RO/RO only; estimated 96+ hours before able to use. Resurvey and dredging may be required. Barge docks have a reduced operational capability; 96+ hours before they can be used. Resurvey and dredging may be required. Concrete Facility is non-operational due to damage caused by the earthquake.
Cordova	Cordova Small Boat Harbor	6V WN 67683 13064	Complete	Not Operational	Boat harbor is completely destroyed from the slide tsunami and is closed. The infrastructure of the dock requires inspection for possible Ferry use. The wave overturned boats and many fishermen, who refused to heed the tsunami warnings as they tried to save their boats, were in the harbor at the time and are severely injured or unaccounted for. The harbormaster estimates the number of missing fishermen to be over 40, and the number of injured over 30.

Table 20. Ports Damage

Ports					
Community	Name	USNG	Damage Level	Damage Status	Description
Homer	Port of Homer	5V NG 89036 08689	Complete	Not Operational	Port of Homer inundated and damaged by the tsunami.
Kenai	Port of Kenai	5V NH 88168 28090	Moderate	Not Operational	Port of Kenai has reduced operational capability. Anticipated it will be 96+ hours before the port will be available; however, resurvey and dredging may be required.
Ketchikan	Port of Ketchikan	9U UB 32167 35863	None	Operational	No significant damage.
Kodiak	Kodiak Island Port	5V ND 29053 98787	Complete	Not Operational	Closed indefinitely due to tsunami damage.
Matanuska-Susitna	Port of Matanuska-Susitna	6V UN 43653 96193	Minor	Reduced	Port McKenzie will require inspections. Will be able to run with generator power. Port McKenzie gas line substation suffers damage and is leaking.
Seward	Port of Seward	6V UM 65066 67290	Complete	Not Operational	Port of Seward inundated and damaged by the tsunami.
Unalaska	Port of Dutch Harbor (Unalaska)	3U VV 00103 74202	None	Operational	No significant damage.
Valdez	Port of Valdez	6V WN 35373 76558	Complete	Not Operational	Port of Valdez sustains significant damage due to the Tsunami and is not operational. Outage of at least 60 days is estimated.
Valdez	Port of Valdez Marine Terminal	6V WN 33247 72711	Complete	Not Operational	The Port of Valdez is closed and inspections are on going. Once all the inspections are completed, there will be no damage to the port.

4.5.3.3 Ferries

Table 21 lists damage to ferries in Alaska.

Table 21. Ferry Damage

Ferries					
Community	Name	USNG	Damage Level	Damage Status	Description
City/Borough of Juneau	State of Alaska, Juneau Ferry Terminal	8V NK 18309 71305	None	Operational	No significant damage.
Cordova	State of Alaska, Cordova Ferry Terminal	6V WN 68237 14178	Moderate	Reduced	After inspection, the ferry is able to use the dock.
Homer	State of Alaska, Homer Ferry Terminal	5V NG 89477 08096	Complete	Not Operational	Closed due to port damage and power outages.
Ketchikan Gateway Borough/City of Ketchikan	State of Alaska, Ketchikan Ferry Terminal	9U UB 29246 37555	None	Operational	No significant damage.
Kodiak	State of Alaska, Kodiak Ferry Terminal	5V NE 35510 05147	Major	Reduced	Closed due to port damage and power outages.
Seward	Seward Water Taxi	6V UM 64441 66823	Complete	Not Operational	Closed due to port damage and power outages.
Unalaska	State of Alaska, Unalaska Ferry Terminal	3U UV 99045 72476	None	Operational	No significant damage.
Valdez	Valdez City Dock	6V WN 34404 76786		Not Operational	Closed for inspection.
Valdez	State of Alaska, Valdez Ferry Terminal S	6V WN 34270 76785		Not Operational	Closed for inspection.
Whittier	State of Alaska, Whittier Ferry Terminal	6V VN 08338 39056		Not Operational	Closed for inspection.

4.5.3.4 Railroads

- The Alaska Railroad halts rail traffic south of the Alaska Range for approximately 12 to 24 hours, until the rail lines are inspected. Following the inspections, the availability of rail lines will be determined based on damage reports. Table 22 lists damage to railroads in Alaska.

Table 22. Railroads Damage

Railroads					
Community	Name	USNG	Damage Level	Damage Status	Description
Anchorage	Anchorage		Major	Not Operational	Anchorage Fire Department 3 responds to a train derailment. Upon arrival at the scene Anchorage Fire Department3 finds two train cars overturned. One overturned car suspected of leaking Methylene Bisphenyl Isocyanate CAS 101-68-8.
Anchorage	M Street	6V UN 43948 90633	Major	Not Operational	Debris form hillside at M street is blocking railroad tracks.
Anchorage	Whittier Tunnel/Portage Glacier Hwy	6V VN 00709 40617	Major	Not Operational	The Anton Andersen Memorial tunnel to Whittier is closed by landslide between the 1st and 2nd tunnels. Placer Creek.
Eielson Air Force Base	Alaskan Railroad	6W VS 69441 90614	Minor	Reduced	Surface delivery of all classes of supply from Anchorage disrupted by damage to Alaska Railroad, Glenn Highway, and Parks Highway.
Ft Greely	Ft Greely	6W WS 61723 01913	Minor	Reduced	Surface delivery of all classes of supply from Anchorage disrupted by damage to Alaska Railroad, Glenn Highway, and Parks Highway.
Ft. Wainwright	Denali Star Railroad	6W VS 69394 90450	Minor	Reduced	Surface delivery of all classes of supply from Anchorage disrupted by damage to Alaska Railroad, Glenn Highway, and Parks Highway.
Joint Base Elmendorf-Richardson	Joint Base Elmendorf-Richardson	6V UN 49447 94024	Minor	Reduced	Numerous shifted tracks reduce the railhead to 80% functionality.
Kenai Peninsula Borough	Coastal Classic Railroad	6V UQ 68815 89749	Major	Not Operational	Rail runs down the east side of the Kenai Peninsula Borough to Seward. Along Turnagain going to Kenai Peninsula Borough, several landslides cover the rail. It will take several weeks to clear and repair. Railroad from Crown Point to Seward has multiple blockages due to avalanches, which is affecting 20+ miles of track. It will take several weeks to clear and repair.
Matanuska-Susitna Borough	Denali Star Railroad	6V UP 50104 35958	Moderate	Not Operational	Rail lines open after inspection, which takes 24 hours. The railroad crossing (bridge) over Hurrican Gulch has collapsed and the rail is now closed between Anchorage and Hurricane Gulch. Following the aftershock on March 28, the rail is down on the Park Highway near Houston; 4 miles of track are damaged. It is estimated it will take a couple of weeks to repair.
Seward	Coastal Classic Railroad	6V UP 50093 35966	Major	Not Operational	The railroad from Crown Point to Seward has multiple blockages due to avalanches, which is affecting 20+ miles of track. It will take several weeks to clear and repair.

4.5.3.5 Airports and Runways

- All air navigation aids that experience an earthquake of 5.0-magnitude or greater require inspection by the Federal Aviation Administration. Until inspection and any required repairs/recertification are completed, the airfields that the navigation aids support will operate under visual flight rules only. Each subsequent aftershock of 5.0-magnitude or greater will necessitate reinspection.
- Damage to approach and runway lights may result in additional airfield restrictions, such as Visual Flight Rules and daylight only operations.
- Portions of National Weather Service products that support pre-flight planning will be unavailable, additional details are available in the National Exercise Program Capstone Exercise 2014 Scenario Ground Truth For Official Use Only Annex.
- In addition to airport buildings and runways, runway lights, ground support equipment, navigation aids, radar, and fuel supplies may be damaged by the earthquake and subsequent aftershocks resulting in reduced operations and capacity.

Table 23 lists the status of airports in Alaska.

Table 23. Airport Damage

Airports					
Community	Name	USNG	Damage Level	Damage Status	Description
Anchorage	Ted Stevens Anchorage International (ANC)	6V UN 38877 85896	Major	Not Operational	Closed for 72+ hours pending survey and repairs (until at least 3/30/14). Runway 07L: No damage to runway, approach lights, or Instrument Landing System—Effect. Full runway can open after 72 hours (no sooner than March 30, 2014), Day Visual Flight Rules Only, Instrument Landing System requires Functional Flight Check, Approach and runway lights operating on generators. Runway 15: Minor approach end damage to first 3,000 feet of runway, approach lights and Instrument Landing System Glide Slope—Effect to 8,500 feet runway can open after 120 hours (no sooner than April 1, 2014) with displaced threshold, Day Visual Flight Rules Only, Localizer requires Functional Flight Check, runway lights operating on generators. Runway 07R: Significant approach end damage to approach lights, Instrument Landing System, and first 6,000 feet of runway—Effect, Runway closed at least 12 months.
Anchorage	Merrill Field (MRI)	6V UN 47135 89995	None	Not Operational	Requires inspection. Closed for 12+ hours.

Table 23. Airport Damage

Airports					
Community	Name	USNG	Damage Level	Damage Status	Description
Anchorage	Elmendorf Air Force Base (EDF)	6V UN 50127 94180	None	Operational	Operational- Visual Flight Rules. Initially airfield is capable of rotary wing ops and open for emergency fixed wing traffic only– requires surveys. Runway 06/24: No damage to runway or approach lights. Instrument Landing System glide slope out of parameters–Effect, runway opens after 24 hours--Day Visual Flight Rules Operations Only; runway lights are operating on generators; Instrument Flight Rules capable on or about April 1 after Federal Aeronautics Administration Functional Check Flight. Runway 16/34: No damage to runway or approach lights. Tactical Air Navigation System approach in parameters–Effect, full runway opens after 24 hours--Day Visual Flight Rules Operations Only; Tactical Air Navigation System operational and runway lights operating on generators; Instrument Flight Rules capable on or about 1 April after Federal Aeronautics Administration Functional Check Flight. Tower: No structural damage and operating on generators. Nav aids/Instrument Flight Rules Runway 06: Instrument Flight Rules/Localizer antenna base may have shifted-requires survey; operating on generator power. Nav aids/Localizer/Speed Measuring Equipment Runway 06:Instrument Flight Rules/Localizer antenna base may have shifted-requires survey; operating on generator power. Nav aids/Tactical Air Navigation System CH81 Runway 06/Runway 16: no visible damage to Tactical Air Navigation System-requires survey; operating on generator power. Petroleum Tanks/Refueling Manifolds: manifold and pipeline is leaking; leaks are contained. At 1800 local on day 1, the tanks are functional and refueling manifolds are 60% operational.

Table 23. Airport Damage

Airports					
Community	Name	USNG	Damage Level	Damage Status	Description
Anchorage	Elmendorf Air Force Base (EDF)	6V UN 50127 94180	None	Operational	Continuation of damage detail: Ground Fuel Hydrants: no leaks are observed, but require survey. All hydrants are without power. Fuel trucks able to refuel at fuel farm West of the runways - initial recycle time is 60 minutes; on April 1 trucks are able to refuel at hydrants-recycle time is 30 minutes. Parking Maximum on Ground: wide body - 40; narrow body - 35 C-130. Working Maximum on Ground: wide body - 2; narrow body. Slot Time Allocation/Aircraft Priority (Department of Defense/Federal Emergency Management Agency/COMM) - open for emergency traffic only - 52 Slots in a 24 hour period (Department of Defense-40%; Federal Emergency Management Agency - 40%; Comm-20%). MHE: Status of equipment unknown - requires survey - K-loaders: next gen small loader - 3; 60K - 3; forklifts: 10K-24. Passenger Ops: status of equipment unknown-requires survey; passenger terminal/holding facility - 1; airstairs 5; buses - 6 each 29 PAX; 23 each - 45 PAX. Runways 06 and 16 will open for emergency traffic only beginning at 1400 hours local. 5 of 18 aircraft hangars have structural damage; 13 of the 18 are structurally sound, some are capable of operating on portable generators, and all require inspection and survey. Crash/Fire Rescue: 4 trucks and crews operational; crash/rescue coverage on duty for daylight operation.
Anchorage	Bryant AAF-JBER (FRN)	6V UN 57627 94926	None	Operational	Operational- Visual Flight Rules.
Anchorage	Campbell Airstrip (CSR)	6V UN 50344 83626	Minor	Not Operational	Closed for 24+ hours. Requires repair, additional dirt at runway end, to reopen.
Cordova	Mudhole Smith Airport (CDV)	6V WN 83738 07182	Minor	Not Operational	Closed for 24+ hours. Cordova Mudhole Smith Airport determines conditions of local airport-closed for inspection. The airport will require inspection which is estimated to take 24 hours. After inspection, the airport will operate at reduced capacity. The runways are undamaged.

Table 23. Airport Damage

Airports					
Community	Name	USNG	Damage Level	Damage Status	Description
Eielson Air Field	Eielson Air Force Base (EIL)	6W VS 96804 69515	None until crash on 3/31	Operational	On March 31 at 1800 hours Z, a 354FW F-16 crashes on midfield of runway due to engine failure, the pilot survives. The runway is closed for 3 to 5 hours. On March 27, a commercial 737 with 156 passengers and 7 crew diverts to Eielson Air Force Base, landing at 1930 hours Z. Minor maintenance issue prevents takeoff prior to March 28 at 1600 hours Z. Eielson supports the passengers until departure On March 31, a 354th FW F-16 crashes mid-field on the runway due to engine failure; runway closed 3 to 5 hours.
Fairbanks	Fairbanks International Airport (FAI)	6W VS 59015 88135	None	Operational	The airport is operational.
Fort Greely	Fort Greely, Allen Army Airfield	6V WR 62468 97183	None until crash on 4/1	Operational	No damage until aircraft crash on 4/1, after the accident, the runway is down for at least 48 hours. Aircraft: (April 1) A Department of Defense C-130 accident on runway-- 4 dead, 20 injured, runway down for at least 48 hours with fuel spill of 300 gallons. Damage to building 101, steam plant for air field.
Fort Wainright	Fort Wainright, Ladd Army Airfield	6W VS 70763 90505	None	Operational	The airfield is operational.
Homer	Homer Airport (HOM)	5V NG 85916 12572	Minor	Operational	Operational- Visual Flight Rules.
Hope	Hope (SHO)	6V UN 57749 55323	Major	Not Operational	Local runway is 2,000 feet by 90 feet and requires repair; large cracks and upheaval have made runway unusable. In place equipment is inoperable.
Juneau	Juneau International Airport (JNU)	8V NK 24356 68793	None	Operational	The airport is operational.
Kenai	Kenai Muni (ENA)	5V NH 96049 16396	None	Not Operational	The airport is closed for inspection.
Ketchikan Gateway Borough/City Of Ketchikan	Ketchikan International Airport (KTN)	9U UB 27975 37711	None	Operational	Operational- Visual Flight Rules.
Kodiak	Kodiak (ADQ)	5V NE 30126 00987	Moderate	Not Operational	Following inspection, there will be reduced capacity due to tsunami damage. A 4,000-foot portion of the longest runway will be usable after inspection. The inspection is anticipated to be completed in 72 hours.
North Pole	Bradley Sky-Ranch Airport (95Z)	6W VS 81365 81652	None	Operational	The airport is operational.

Table 23. Airport Damage

Airports					
Community	Name	USNG	Damage Level	Damage Status	Description
Palmer	Palmer Muni (PAQ)	6V UP 89156 30813	Moderate	Not Operational	The airport is closed.
Seward	Seward (SWD)	6V UM 65622 68008	Major	Not Operational	Inundated by tsunami.
Talkeetna	Talkeetna (TKA)	5V PK 50766 13755	Major	Not Operational	Airport damaged and runway closed to liquefaction.
Valdez	Valdez (VDZ)	6V WN 40481 77940	Moderate	Operational	Daylight Visual Flight Rules only. Outside of tsunami inundation area. Will require inspection after earthquake.
Wasilla	Wasilla Airport (IYS)	6V UP 64858 29134	Moderate	Operational	Daylight Visual Flight Rules.

4.5.4 Consequences to Communications Systems

- Lines of communication have been widely but unevenly degraded in Southcentral Alaskan communities nearest the epicenter of the earthquake.
- All primary and secondary forms of communication are intermittent and unreliable. Systems affected include:
 - Cell phones
 - Land lines
 - Internet via fiber lines
 - Alaska Land Mobile Radio
 - Cable television
 - Amplitude modulation/frequency modulation radio stations (power to transmit will likely be the fail point, backup generators may not survive)
- The following communications systems are operating on battery power, once the battery dies, communications will go down unless there are sufficient backup generators and fuel to support sustained operations:
 - Amateur Radio Emergency Services (all repeaters have backup generator systems)
 - Marine band
 - Air band
 - Satellite phones
 - Simplex line of sight only-repeaters down
 - Portable satellite systems
 - Internal tactical communications available to deploy

Table 24 and Table 25 provide information on communications damage and functionality.

Table 24. Communications Damage and Functionality

Communications System Damage & Status			
Name	Damage Level	Damage Status	Description
Fiberoptic cables	Major	Reduced	Three of the four transoceanic fiber optic cables connecting the study area with the lower 48 will be severed. The Alaska Communications System cable that runs into Cook Inlet will survive. This one cable can meet normal bandwidth requirements for internet and voice-over-IP for the entire study area (cables just need to be moved manually and Atlantic Telephone and Telegraph and General Communications Inc. will need to re-route to the operational Alaska Communications System cable).
Transmission towers (cell, radio)	Moderate	Reduced	Most have battery backups but no generators.
Satellite	None	Reduced	Bandwidth will be overloaded. Iridium is the most reliable provider and the one most emergency responders use.
Microwave stations	Moderate	Reduced	Will require alignment.
HAM radio/line of sight	None	Operational	This will be a reliable method of communication.
Cell phone	Major	Not Operational	Cell service will probably not be available. Power outages will also impact accessibility.
Landline	Moderate	Reduced	Landline telephone service will have some areas of service, where lines are still connected to Central Offices.
Internet	Moderate	Reduced	There will be 0- to 4-hour service interruption for ACS customers, and up to 1-week service disruption for GCI and ATT customers. Power outages will also impact people's ability to access the internet.
TV	Major	Not Operational	TV will probably not be available. Power outages will also impact accessibility.
AM/FM radio	Moderate	Reduced	A few stations are more resilient than others. It will be possible to keep them on air (they may need support for fuel and generators). These stations will be available for public broadcasts.
Hazus inventory (77 facilities)			96% moderate or greater damage. Facilities include AM or FM radio station transmitters, television station transmitters, and other communications facilities that consist of a building and central switching equipment.

Table 25. Communications Damage and Functionality by Community

Community Communications					
Community	Name	USNG	Damage Level	Damage Status	Description
Anchorage	MTA land line telephone	6V UN 44256 90380	Moderate	Reduced	Matanuska Telephone Association landlines are functioning but slow.
Anchorage	Cell phones	6V UN 44256 90380	Moderate	Reduced	Cell phones are functioning sporadically; however, due to high demand, many calls are dropped or delayed.
Anchorage	Twitter	6V UN 44256 90380	None	Operational	Twitter appears to be functioning normally.
Anchorage	Alaska Land Mobil Radio/Anchorage Wide Area Radio Network	6V UN 44256 90380	None	Operational	Alaska Land Mobil Radio/Anchorage Wide Area Radio Network is functioning normally.
Cordova	Communications	6V WN 68468 12603	Major	Not Operational	Cordova communications to the outside world are knocked out completely after initial event for 24 hours.
Cordova	TV	6V WN 68468 12603	Major	Not Operational	No TV or cell phone coverage is available; however, texting is available.
Cordova	Cell phones	6V WN 68468 12603	Major	Not Operational	No TV or cell phone coverage is available; however, texting is available.

Table 25. Communications Damage and Functionality by Community

Community Communications					
Community	Name	USNG	Damage Level	Damage Status	Description
Cordova	Texting	6V WN 68468 12603	None	Operational	No TV or cell phone coverage is available; however, texting is available.
Cordova	Land lines	6V WN 68468 12603	Moderate	Reduced	Some of the land lines are operational locally but are unreliable.
Cordova	HAM radio	6V WN 68468 12603	None	Operational	HAM radio will be used to contact the SEOC.
Eielson Air Force Base	General Summary-Eielson Air Force Base	6W VS 95159 71191	None	Operational	No damage.
Fairbanks	Communications	6W VS 65702 91220	None	Operational	No significant damage.
Fort Greely	Communications cable	6V WR 70943 87232	Minor	Reduced	Cable cut inside fence at Ground-Base Midcourse Defense—comes back online at 1300 Alaska Daylight Time on March 27.
Fort Greely	Alaska Land Mobil Radio	6V WR 70943 87232	Minor	Reduced	The Alaska Land Mobil Radio will be out for 8 hours on March 31.
Fort Wainwright	General Summary-Fort Wainwright	6W VS 69488 89418	None	Operational	No damage.
Homer	General Summary-Homer	5V NG 83107 12588	Major	Not Operational	There will be short term loss of normal communications capability. No land line, cell phone, or e-mail capability.
Joint Base Elmendorf-Richardson	Joint Base Elmendorf-Richardson	6V UN 49447 94024	None	Operational	No visible damage; requires survey, running on generator power.
Juneau	Communications	8V NK 34189 62259	Minor	Reduced	Juneau experiences a short outage of telephones, internet, and cell phone coverage a few days into the event.
Juneau	Land lines	8V NK 34189 62259	Minor	Reduced	Minor damage.
Juneau	Cell phones	8V NK 34189 62259	Minor	Reduced	Minor damage.
Juneau	Internet	8V NK 34189 62259	Minor	Reduced	Minor damage.
Kenai Peninsula Borough	Land lines	5V NH 97066 14930	Major	Not Operational	There will be short term loss of normal communications capability. No land line, cell phone, or e-mail capability.
Kenai Peninsula Borough	Cell phones	5V NH 97066 14930	Major	Not Operational	There will be short term loss of normal communications capability. No land line, cell phone, or e-mail capability.
Kenai Peninsula Borough	e-mail	5V NH 97066 14930	Major	Not Operational	There will be short term loss of normal communications capability. No land line, cell phone, or e-mail capability.
Kenai Peninsula Borough	HAM radio	5V NH 97066 14930	None	Operational	With the first hour, HAM will set up. HAM radio will be primary communications.
Kenai Peninsula Borough	Primary Radio Tower	5V NH 97066 14930	Major	Not Operational	Primary radio tower failures and bay door inoperability. Radio communications are line-of-site and between vehicles.
Ketchikan	Communications	9U UB 30506 36994	Minor	Operational	No significant damage.
Kodiak	Communications	5V NE 36014 05837	Major	Not Operational	Communications are out throughout South Central Alaska affecting Kodiak's ability to contact the State Emergency Operations Center or other communities.
Kodiak	Land lines	5V NE 36014 05837	Major	Not Operational	none

Table 25. Communications Damage and Functionality by Community

Community Communications					
Community	Name	USNG	Damage Level	Damage Status	Description
Kodiak	Cell phone	5V NE 36014 05837	Major	Not Operational	none
Kodiak	Internet	5V NE 36014 05837	Major	Not Operational	none
Matanuska-Susitna Borough	Matanuska-Susitna Borough	6V UQ 66667 21403	Moderate	Reduced	Communications are intermittent.
North Pole	Communications	6W VS 83251 80762	None	Operational	No significant damage.
Seward	Alaska Marine Radio	6V UM 64807 67755	Major	Not Operational	Alaska Marine Radio is out.
Seward	Cell phones	6V UM 64807 67755	Moderate	Reduced	Cell and landline phones are intermittent.
Seward	Land lines	6V UM 64807 67755	Moderate	Reduced	Cell and landline phones are intermittent.
Unalaska	Land lines	3U UV 99630 72253	Minor	Reduced	Telephones will be down during the duration of the power outage. Estimated time of restoration is 1:00 p.m.
Valdez	General Summary-Valdez	6V WN 35102 77531	Major	Not Operational	Valdez will be experiencing a communication out all day on March 27. No communication will be established by any outside organization for the first 24 hours of the exercise, but should be reestablished by the evening of the March 29.
Valdez	Land lines	6V WN 35102 77531	Major	Not Operational	none
Valdez	Cell phones	6V WN 35102 77531	Major	Not Operational	none
Valdez	Internet	6V WN 35102 77531	Major	Not Operational	none
Valdez	Radio	6V WN 35102 77531	Moderate	Not Operational	none

4.5.5 Consequences to Utilities

The following information describes the general impacts to the utilities (i.e., electric, natural gas, water, and wastewater/sewer) in the affected area statewide.

4.5.5.1 *Electric*

- There is power in large portions of the electric grid in the affected area.
- Widespread outages are largely a result of structural damage to generating stations, substations, transmission towers, and transformers, including damage and slippage to transformer bushings. Localized outages occur as a result of feeder line burn-down and blown fuses.
- Inspection will be required to determine if outages are a result of damage or automated system shutdowns.
- Initial earthquake damage is compounded by subsequent aftershocks. Previously inspected and repaired power electrical facilities will require additional inspection and repair.

Table 26 provides information on electrical system damage.

Table 26. Electrical System Damage

Electric				
Community	Name	USNG	Damage Status	Description
Anchorage	General Summary	6V UN 44256 90380	Reduced	The power is out in 70% of the city
Anchorage	Grid 1229	6V UN 44003 90801	Not Operational	Power is out.
Anchorage	Grid 1230	6V UN 44789 90766	Not Operational	Power is out.
Anchorage	Grid 1328	6V UN 43177 90030	Not Operational	Power is out.
Anchorage	Grid 1329	6V UN 43986 89995	Not Operational	Power is out.
Anchorage	Grid 1330	6V UN 44753 89961	Not Operational	Power is out.
Anchorage	Grid 1331	6V UN 45575 89924	Not Operational	Power is out.
Anchorage	Grid 1332	6V UN 46379 89888	Not Operational	Power is out.
Anchorage	Grid 1429	6V UN 43931 89209	Not Operational	Power is out.
Anchorage	Grid 1430	6V UN 44714 89175	Not Operational	Power is out.
Anchorage	Grid 1431	6V UN 45525 89151	Not Operational	Power is out.
Anchorage	Grid 1432	6V UN 46327 89097	Not Operational	Power is out.
Anchorage	Grid 1439	6V UN 51942 88867	Not Operational	Power is out.
Anchorage	Grid 1525	6V UN 40661 88556	Not Operational	Power is out.
Anchorage	Grid 1526	6V UN 41465 88520	Not Operational	Power is out.
Anchorage	Grid 1527	6V UN 42270 88484	Not Operational	Power is out.
Anchorage	Grid 1528	6V UN 43073 88449	Not Operational	Power is out.
Anchorage	Grid 1625	6V UN 40625 87752	Not Operational	Power is out.
Anchorage	Grid 1626	6V UN 41429 87716	Not Operational	Power is out.
Anchorage	Grid 1627	6V UN 42234 87680	Not Operational	Power is out.
Anchorage	Grid 1740	6V UN 52644 86419	Not Operational	Power is out.
Anchorage	Grid 1741	6V UN 53448 86388	Not Operational	Power is out.
Anchorage	Grid 2042	6V UN 54311 83937	Not Operational	Power is out.
Anchorage	Grid 2043	6V UN 55062 83906	Not Operational	Power is out.
Anchorage	Grid 2142	6V UN 54277 83133	Not Operational	Power is out.
Anchorage	Grid 2143	6V UN 55030 83103	Not Operational	Power is out.
Anchorage	Grid 2025	6V UN 40796 84522	Not Operational	Power is out.
Anchorage	Grid 2026	6V UN 41600 84486	Not Operational	Power is out.
Anchorage	Grid 2027	6V UN 42404 84451	Not Operational	Power is out.
Anchorage	Grid 2028	6V UN 43209 84415	Not Operational	Power is out.
Anchorage	Grid 2029	6V UN 44012 84378	Not Operational	Power is out.
Anchorage	Grid 2030	6V UN 44764 84344	Not Operational	Power is out.
Anchorage	Grid 2031	6V UN 45517 84312	Not Operational	Power is out.
Anchorage	Grid 2032	6V UN 46321 84277	Not Operational	Power is out.
Anchorage	Grid 2042	6V UN 54311 83937	Not Operational	Power is out.
Anchorage	Grid 2043	6V UN 55062 83906	Not Operational	Power is out.
Anchorage	Grid 2125	6V UN 40760 83717	Not Operational	Power is out.
Anchorage	Grid 2126	6V UN 41565 83681	Not Operational	Power is out.
Anchorage	Grid 2127	6V UN 42368 83646	Not Operational	Power is out.
Anchorage	Grid 2128	6V UN 43172 83610	Not Operational	Power is out.
Anchorage	Grid 2129	6V UN 43976 83574	Not Operational	Power is out.
Anchorage	Grid 2130	6V UN 44731 83540	Not Operational	Power is out.
Anchorage	Grid 2131	6V UN 45484 83508	Not Operational	Power is out.
Anchorage	Grid 2132	6V UN 46288 83473	Not Operational	Power is out.
Anchorage	Grid 2142	6V UN 54277 83133	Not Operational	Power is out.
Anchorage	Grid 2143	6V UN 55030 83103	Not Operational	Power is out.
Anchorage	Grid 2225	6V UN 40724 82913	Not Operational	Power is out.
Anchorage	Grid 2226	6V UN 41529 82875	Not Operational	Power is out.
Anchorage	Grid 2227	6V UN 42332 82839	Not Operational	Power is out.

Table 26. Electrical System Damage

Electric				
Community	Name	USNG	Damage Status	Description
Anchorage	Grid 2228	6V UN 43136 82804	Not Operational	Power is out.
Anchorage	Grid 2229	6V UN 43941 82769	Not Operational	Power is out.
Anchorage	Grid 2230	6V UN 44697 82736	Not Operational	Power is out.
Anchorage	Grid 2231	6V UN 45452 82704	Not Operational	Power is out.
Anchorage	Grid 2232	6V UN 46255 82669	Not Operational	Power is out.
Anchorage	Grid 2324	6V UN 39883 82146	Not Operational	Power is out.
Anchorage	Grid 2325	6V UN 40689 82108	Not Operational	Power is out.
Anchorage	Grid 2326	6V UN 41493 82071	Not Operational	Power is out.
Anchorage	Grid 2327	6V UN 42298 82035	Not Operational	Power is out.
Anchorage	Grid 2328	6V UN 43102 81999	Not Operational	Power is out.
Anchorage	Grid 2329	6V UN 43906 81964	Not Operational	Power is out.
Anchorage	Grid 2427	6V UN 42263 81231	Not Operational	Power is out.
Anchorage	Grid 2428	6V UN 43067 81195	Not Operational	Power is out.
Anchorage	Grid 2429	6V UN 43872 81160	Not Operational	Power is out.
Anchorage	Grid 2436	6V UN 49401 80922	Not Operational	Power is out.
Anchorage	Grid 2437	6V UN 50205 80888	Not Operational	Power is out.
Anchorage	Grid 2438	6V UN 51010 80853	Not Operational	Power is out.
Anchorage	Grid 2439	6V UN 51813 80818	Not Operational	Power is out.
Anchorage	Grid 2440	6V UN 52617 80785	Not Operational	Power is out.
Anchorage	Grid 2441	6V UN 53422 80752	Not Operational	Power is out.
Anchorage	Grid 2536	6V UN 49369 80118	Not Operational	Power is out.
Anchorage	Grid 2537	6V UN 50172 80084	Not Operational	Power is out.
Anchorage	Grid 2538	6V UN 50976 80049	Not Operational	Power is out.
Anchorage	Grid 2539	6V UN 51780 80015	Not Operational	Power is out.
Anchorage	Grid 2540	6V UN 52584 79981	Not Operational	Power is out.
Anchorage	Grid 2541	6V UN 53389 79948	Not Operational	Power is out.
Anchorage	Grid 2634	6V UN 47729 79384	Not Operational	Power is out.
Anchorage	Grid 2635	6V UN 48533 79349	Not Operational	Power is out.
Anchorage	Grid 2636	6V UN 49336 79314	Not Operational	Power is out.
Anchorage	Grid 2637	6V UN 50139 79280	Not Operational	Power is out.
Anchorage	Grid 2638	6V UN 50942 79246	Not Operational	Power is out.
Anchorage	Grid 2639	6V UN 51747 79212	Not Operational	Power is out.
Anchorage	Grid 2640	6V UN 52550 79178	Not Operational	Power is out.
Anchorage	Grid 2641	6V UN 53355 79145	Not Operational	Power is out.
Cordova	General Summary	6V WN 68468 12603	Reduced	An equipment problem at the power house causes a power outage in City Center area, lasting one hour.
Eielson Air Force Base	General Summary	6W VS 95159 71191	Operational	No damage.
Fairbanks	General Summary	6W VS 65702 91220	Operational	No damage.
Fort Greely	General Summary	6V WR 70943 87232	Reduced	Loses power due to aircraft crash on April 1.
Fort Wainwright	General Summary	6W VS 69488 89418	Operational	No damage.
Homer	General Summary	5V NG 83107 12588	Reduced	Intermittent.
Hope	General Summary	6V UN 56775 56696	Not Operational	Electrical outages; line repair is anticipated to take 30+ days.
Joint Base Elmendorf-Richardson	General Summary	6V UN 49447 94024	Not Operational	Entire Installation is initially without primary power.
Juneau	General Summary	8V NK 34189 62259	Operational	No damage.

Table 26. Electrical System Damage

Electric				
Community	Name	USNG	Damage Status	Description
Kenai Peninsula Borough	General Summary	5V NH 97066 14930	Not Operational	Not operational. All electrical service is out in our entire service area. Chugach Electric has lost significant above ground transmission lines throughout the area due to avalanches. Much of the power distribution equipment has been damaged and needs to be replaced. Will need 30 each 66kV, 110kV transformers and also 130 single-phase 30kV pole-mounted transformers, and 35 75kV pad-mounted transformers.
Ketchikan	General Summary	9U UB 30506 36994	Operational	No significant damage.
Kodiak	General Summary	5V NE 36014 05837	Not Operational	Significant damage to electrical grid causes blackout across the island.
Kodiak	General Summary	5V NE 35831 05408	Reduced	The downtown power station is knocked out and estimated restoration time is 1300 hours on March 28.
Matanuska-Susitna Borough	General Summary	6V UQ 66667 21403	Reduced	The power grid is functioning normally after the initial earthquake, but will fail following a late afternoon aftershock on March 27 from Houston to Palmer, but will come back the morning of March 28. Friday afternoon following the aftershock, the valley will experience a widespread outage because the Port McKenzie transmission tower is damaged. It is anticipated to take at least 3 days to repair the tower and restore service to the affected area.
Matanuska-Susitna Borough	Port McKenzie Transmission Tower	6V UP 43842 00550	Not Operational	The Port McKenzie transmission tower is damaged. It is anticipated to take at least 3 days to repair the tower and restore service to the affected area.
North Pole	General Summary	6W VS 83251 80762	Operational	No damage.
Seward	General Summary	6V UM 64807 67755	Not Operational	No power in area.
Unalaska	General Summary	3U UV 99630 72253	Reduced	Equipment problems at the power house cause a local power outage lasting several hours. The backup generators go down also.
Valdez	General Summary	6V WN 35102 77531	Reduced	Intermittent outages are experienced throughout the area.

4.5.5.2 Natural Gas

- The natural gas distribution system has been significantly damaged. Damages include pipeline breaks, main breaks, and disruptions to pressure and measurement instruments.
- Systems experiencing breakages also experience significantly reduced pressure.
- Gas system leakage necessitates evacuation in many areas.
- Customer-side damage including meter movement and line breakage as a result of ground displacement will require extensive repair.
- In addition to breaks and damage, the utilities will shut off gas service to facilitate inspection and mitigate leaks.

Table 27 provides information on damage to the natural gas system.

Table 27. Natural Gas System Damage

Natural Gas				
Community	Name	USNG	Damage Status	Description
Anchorage	General Summary	6V UN 44256 90380	Reduced	There are shortages (reduced pressure) in 60% of the city.
Anchorage	Russian Jack Park Area	6V UN 50293 88450	Not Operational	AFD is requesting evacuation of all residents in the area bounded by Debar Road to the north, Northern Lights Boulevard to the south, Lake Otis Parkway to the west, and Muldoon Road to the east.
Anchorage	Grid 1229	6V UN 44003 90801	Not Operational	Natural Gas is out.
Anchorage	Grid 1230	6V UN 44789 90766	Not Operational	Natural Gas is out.
Anchorage	Grid 1328	6V UN 43177 90030	Not Operational	Natural Gas is out.
Anchorage	Grid 1329	6V UN 43986 89995	Not Operational	Natural Gas is out.
Anchorage	Grid 1330	6V UN 44753 89961	Not Operational	Natural Gas is out.
Anchorage	Grid 1331	6V UN 45575 89924	Not Operational	Natural Gas is out.
Anchorage	Grid 1332	6V UN 46379 89888	Not Operational	Natural Gas is out.
Anchorage	Grid 1429	6V UN 43931 89209	Not Operational	Natural Gas is out.
Anchorage	Grid 1430	6V UN 44714 89175	Not Operational	Natural Gas is out.
Anchorage	Grid 1431	6V UN 45525 89151	Not Operational	Natural Gas is out.
Anchorage	Grid 1432	6V UN 46327 89097	Not Operational	Natural Gas is out.
Anchorage	Grid 1434	6V UN 47920 89038	Not Operational	Due to gas main breaks, Anchorage Fire Department is requesting evacuation
Anchorage	Grid 1435	6V UN 48724 89003	Not Operational	Due to gas main breaks, Anchorage Fire Department is requesting evacuation
Anchorage	Grid 1436	6V UN 49527 88968	Not Operational	Due to gas main breaks, Anchorage Fire Department is requesting evacuation
Anchorage	Grid 1437	6V UN 50333 88935	Not Operational	Due to gas main breaks, Anchorage Fire Department is requesting evacuation
Anchorage	Grid 1438	6V UN 51137 88901	Not Operational	Due to gas main breaks, Anchorage Fire Department is requesting evacuation
Anchorage	Grid 1439	6V UN 51942 88867	Not Operational	Due to gas main breaks, Anchorage Fire Department is requesting evacuation
Anchorage	Grid 1440	6V UN 52746 88834	Not Operational	Due to gas main breaks, Anchorage Fire Department is requesting evacuation
Anchorage	Grid 1525	6V UN 40661 88556	Not Operational	Natural Gas is out.
Anchorage	Grid 1526	6V UN 41465 88520	Not Operational	Natural Gas is out.
Anchorage	Grid 1527	6V UN 42270 88484	Not Operational	Natural Gas is out.
Anchorage	Grid 1528	6V UN 43073 88449	Not Operational	Natural Gas is out.
Anchorage	Grid 1534	6V UN 47886 88234	Not Operational	Due to gas main breaks, Anchorage Fire Department is requesting evacuation
Anchorage	Grid 1535	6V UN 48690 88198	Not Operational	Due to gas main breaks, Anchorage Fire Department is requesting evacuation
Anchorage	Grid 1536	6V UN 49494 88164	Not Operational	Due to gas main breaks, Anchorage Fire Department is requesting evacuation
Anchorage	Grid 1537	6V UN 50299 88130	Not Operational	Due to gas main breaks, Anchorage Fire Department is requesting evacuation
Anchorage	Grid 1538	6V UN 51103 88096	Not Operational	Due to gas main breaks, Anchorage Fire Department is requesting evacuation
Anchorage	Grid 1539	6V UN 51907 88062	Not Operational	Due to gas main breaks, Anchorage Fire Department is requesting evacuation
Anchorage	Grid 1540	6V UN 52711 88030	Not Operational	Due to gas main breaks, Anchorage Fire Department is requesting evacuation
Anchorage	Grid 1625	6V UN 40625 87752	Not Operational	Natural Gas is out.

Table 27. Natural Gas System Damage

Natural Gas				
Community	Name	USNG	Damage Status	Description
Anchorage	Grid 1626	6V UN 41429 87716	Not Operational	Natural Gas is out.
Anchorage	Grid 1627	6V UN 42234 87680	Not Operational	Natural Gas is out.
Cordova	General Summary	6V WN 68468 12603	NA	Not applicable
Eielson Air Force Base	General Summary	6W VS 95159 71191	NA	Not applicable
Fairbanks	General Summary	6W VS 65702 91220	NA	Not applicable
Fort Greely	General Summary	6V WR 70943 87232	NA	Not applicable
Fort Wainwright	General Summary	6W VS 69488 89418	NA	Not applicable
Homer	General Summary	5V NG 83107 12588	Reduced	Reduced service.
Joint Base Elmendorf-Richardson	General Summary	6V UN 49447 94024	Not Operational	80% of the installation has been isolated due to leaks or the need for inspection; repair started.
Juneau	General Summary	8V NK 34189 62259	NA	Not applicable
Kenai Peninsula Borough	General Summary	5V NH 97066 14930	Not Operational	ENSTAR--initial reports indicate numerous pipeline breaks. Natural gas distribution has ceased pending damage assessments.
Ketchikan	General Summary	9U UB 30506 36994	NA	Not applicable
Kodiak	General Summary	5V NE 36014 05837	Reduced	Minor damage across the island.
Matanuska-Susitna Borough	King Arthur Drive, Houston AK	6V UP 51704 35151	Reduced	In Houston, there is a gas leak at King Arthur Drive and the Parks Highway. The estimated time to repair is 24 hours. Service is still available in Palmer and Wasilla.
North Pole	General Summary	6W VS 83251 80762	NA	Not applicable
Seward	General Summary	6V UM 64807 67755	NA	Not applicable
Unalaska	General Summary	3U UV 99630 72253	Operational	No significant damage.
Valdez	General Summary	6V WN 35102 77531	NA	Not applicable

4.5.5.3 Water System

- Service main and line breaks result in reduced water pressure in affected areas. Pressure reductions could reduce fire-fighting capability.
- Water utilities will shut down system components in an attempt to mitigate damage from pressure loss and pipe leaks and breaks inside of buildings.
- To mitigate possible public health threats in both urban and rural areas, public health authorities may issues boil water advisories.
- Following repair, systems will require quality testing and system flushing to ensure potability.

Table 28 provides information on damage to the water system.

Table 28. Water System Damage

Water					
Community	Name	USNG	GTD Damage	Damage Status	Description
Anchorage	5th Avenue and C Street	6V UN 44931 90447	Major	Operational	Water main breaks.
Anchorage	G Street and 7th Avenue	6V UN 44484 90251	Major	Reduced	Water main breaks.
Anchorage	H Street and 7th Avenue	6V UN 44382 90252	Major	Reduced	Water main breaks.
Anchorage	8th Avenue and Overlook Place	6V UN 43764 90062	Major	Reduced	Water main breaks.
Anchorage	Tudor and Boniface	6V UN 50603 86104	Major	Reduced	Water main breaks.
Anchorage	Turpin Street and Debarr Road	6V UN 51955 89270	Major	Reduced	Water main breaks.
Anchorage	Baxter Road and Northern Lights	6V UN 51492 87672	Major	Reduced	Water main breaks.
Anchorage	Bridge View Drive	6V UN 50205 74443	Major	Reduced	Water main breaks.
Cordova	Cordova Water Treatment	6V WN 68468 12603	Major	Reduced	The city water treatment plant suffers significant damage to 75% of the building and is non-operational; there are numerous water main breaks throughout the city. The community will experience wide spread service outages due to structural breaks in smaller lines.
Eielson AFB	Eielson AFB	6W VS 95159 71191	None	Operational	No damage.
Fairbanks	Fairbanks	6W VS 65702 91220	None	Operational	No damage.
Fort Greely	Fort Greely	6V WR 70943 87232	None	Operational	No damage.
Fort Wainwright	Fort Wainwright	6W VS 69488 89418	None	Operational	No damage.
Homer	Homer	5V NG 83107 12588	Minor	Reduced	Minor distribution system problems. No damage to storage facilities.
Joint Base Elmendorf-Richardson	Joint Base Elmendorf-Richardson	6V UN 49447 94024	Major	Reduced	Damaged pipes; water pressure reduced by 70%, numerous leaks.
Juneau	Juneau	8V NK 34189 62259	None	Operational	No damage.
Kenai	Kenai	5V NH 97186 14850	Major	Not Operational	The water-treatment plant located on Kenai Spur Highway was placed offline by management following the earthquake and is unable to reinitiate operations.
Kenai Peninsula Borough	Kenai Peninsula Borough	5V NH 97066 14930	Complete	Not Operational	Not operational.
Kodiak	Kodiak	5V NE 36014 05837		Reduced	The island will experience intermittent water outages and the ROAD System water line needs assessment.

Table 28. Water System Damage

Water					
Community	Name	USNG	GTD Damage	Damage Status	Description
Matanuska-Susitna Borough	Matanuska-Susitna Borough	6V UQ 66667 21403	Moderate	Reduced	Private wells in the area may be damaged or compromised, requiring inspections to ensure there has been no cross-contamination with the septic systems because of the possibility of water quality changes post-earthquake and subsequent aftershocks.
North Pole	North Pole	6W VS 83251 80762	Major	Not Operational	There is system-wide damage, which is unrelated to the earthquake.
Palmer	Palmer	55V FJ 12323 31659	None	Operational	City water systems functioning normally.
Seward	Distribution system	6V UM 64807 67755	Minor	Operational	Minor distribution system problems.
Seward	Storage facilities	6V UM 64807 67755	None	Operational	Storage facilities no damage.
Unalaska	Unalaska	3U UV 99630 72253	None	Operational	No significant damage.
Valdez	Valdez	6V WN 35102 77531	Moderate	Reduced	Will require inspection.
Wasilla	Wasilla	55V FJ 30191 30034	None	Operational	City water systems functioning normally.

4.5.5.4 Wastewater and Sewer System

- Wastewater and sewer system damage includes cracked pipe walls, pipe section collapse, and separation between pipe joints.
- Liquefaction has pushed some pipes up, which reduced the downward gradient of the system, causing it to stop flowing and/or backup in some areas.
- Sewer pump stations and their pressure mains have suffered varying damage. Some will require complete replacement. As a result, it is possible that effluent is being pumped into waterways and the sea.
- Wastewater and sewer breaks have occurred near potable water line damage putting the potable water systems at risk. Authorities may issue boil water notices to mitigate public health threats.

Table 29 provides information on damage to the wastewater and sewer system.

Table 29. Wastewater and Sewer System Damage

Wastewater and Sewer					
Community	Name	USNG	Damage Level	Damage Status	Description
Anchorage	AWWU wastewater facility	6V UN 44227 87683	Major	Not Operational	There is an industrial chemical release within the AWWU wastewater facility. Damage to wastewater facilities is creating significant potential public health threats.
Anchorage	Point Woronzof Wastewater Treatment Facility	5V PH 60108 88470	Moderate	Not Operational	There is a chlorine incident at Point Woronzof Wastewater Treatment Facility.
Cordova	Cordova	6V WN 68468 12603	Major	Not Operational	Service outages will be experienced throughout the community due to breaks in pipelines and lack of electricity.
Eielson AFB	Eielson AFB	6W VS 95159 71191	None	Operational	No damage.
Fairbanks	Fairbanks	6W VS 65702 91220	None	Operational	No damage.
Fort Greely	Fort Greely	6V WR 70943 87232	None	Operational	No damage.
Fort Wainwright	Fort Wainwright	6W VS 69488 89418	None	Operational	No damage.
Homer	Homer	5V NG 83107 12588	Major	Not Operational	Not operational; long term outages are expected.
Joint Base Elmendorf-Richardson	Joint Base Elmendorf-Richardson	6V UN 49447 94024	Major	Not Operational	15 breaks in concrete pipes throughout the installation.
Kenai	Kenai	5V NH 97066 14930	Major	Not Operational	Not operational; long term outages are expected.
Ketchikan	Ketchikan	9U UB 30506 36994	Minor	Operational	No significant damage.
Kodiak Island	Kodiak Island	5V NE 36014 05837	Major	Not Operational	Service outages will be experienced throughout the community due to breaks in pipelines and lack of electricity. Sewer backups will cause health threats.
Matanuska-Susitna	Matanuska-Susitna	6V UQ 66667 21403	Moderate	Reduced	Possible septic system leakage and contamination.
North Pole	North Pole	6W VS 83251 80762	None	Operational	No damage.
Seward	Lowell Point Facility	6V UM 64070 62001	Major	Not Operational	Lowell Point Facility is severely damaged and is non-operational.
Soldotna	Soldotna	5V PH 05041 06771	Major	Not Operational	The waste water treatment plant in Soldotna was damaged as a result of the earthquake and is not operational.
Valdez	Valdez	6V WN 35102 77531	Minor	Reduced	Will require inspection.

4.5.6 Consequence to Fuel

4.5.6.1 Fuel Storage

- There is a 2-day supply in underground tanks at gas stations, but once that is gone, there will be no gasoline or diesel fuel.

Table 30 provides information on fuel storage damage, as well as fuel storage statuses.

Table 30. Fuel Storage Status and Damage

Fuel Storage					
Community	Name	USNG	Damage Level	Damage Status	Description
Anchorage	Fuel Dock	6V UN 44875 92459	Complete	Not Operational	Fuel dock non-operational due to corroded piers (failure); estimated 3 months to 1 year to repair.
Anchorage	Fuel Tanks	6V UN 44900 92332	Moderate	Reduced	Fuel tanks have reduced operational capability; 2 tanks fail with the potential for a Hazardous Materials spill/fire.
Anchorage	Fuel Valve Yard	6V UN 45149 92359	Complete	Not Operational	Fuel Valve Yard is non-operational.
Anchorage	Ted Stevens Airport	5V PH 60728 85903	Major	Not Operational	Petroleum tanks/refueling manifolds– 2 tanks ruptured with manifolds/pipeline leaks contained.
Anchorage	Port Of Anchorage	6V UN 45175 92924	Minor	Reduced	Petroleum Terminal 1–terminal structurally sound–2 of 4 product lines operational. Petroleum Terminal 2–completely collapsed–requires full manifold replacement.
Cordova	Shoreside	6V WN 68080 12716	Minor	Reduced	Fuel leak at the Shoreside upper tank farm.
Fort Greely	Fort Greely	6V WR 70943 87232	None	Operational	No damage.
Homer	Petro Marine	5V NG 89583 08032	Moderate	Not Operational	Petro Marine located on the Homer Spit suffers substantial damage and is leaking.
Hope	Hope	6V UN 55904 57684	None	Reduced	The community has a 1-week supply of necessary fuel to run generators for life support.
Joint Base Elmendorf-Richardson	Joint Base Elmendorf-Richardson	6V UN 47108 94254	Major	Not Operational	Tremblor switch activated/delivery pumps from port shut down; requires survey of entire pipeline before restart. Numerous leaks detected at manifolds; requires survey. No damage to storage capacity.
Kenai Peninsula Borough	Nikiski Refinery	5V NH 89099 28812	Complete	Not Operational	Nikiski refinery down in Kenai Peninsula Borough. At least one of the petroleum storage tanks has collapsed--estimate 100,000-gallon oil spill. The refined fuels pipeline and plant are damaged.
Kodiak Island City and Borough	Thompson Transfer	5V NE 29030 02011	Major	Not Operational	Thompson Transfer; one gasoline storage tank is damaged (transfer pipe is damaged). AV Gas Tank Petro Marine; one gasoline storage tank is damaged (transfer pipe is damaged).
Seward	Seward	6V UM 64774 67568	Major	Not Operational	Major damage to fuel farm. Non-operational.
Valdez	Valdez	6V WN 33522 71898	None	Reduced	The tanks are outside the inundation zone; however, inspections will be required.

4.5.6.2 Refined Fuels

- Earthquake damage has significantly increased reliance on generators and limited the ability to obtain new fuel supplies.
- Since the Port of Anchorage is destroyed, the only means to off-load refined fuels (i.e., diesel fuel and regular gasoline, propane, etc.) is gone.

Table 31 provides information on petroleum and refined fuels damages.

Table 31. Petroleum and Refined Fuels Damage

Petroleum and Refined Fuels					
Community	Name	USNG	Damage Level	Damage Status	Description
Anchorage	Anchorage	6V UN 44709 91967	Moderate	Reduced	Holding tanks are undamaged.
Cordova	Cordova	6V WN 68114 13497	Moderate	Reduced	Leak at the Shoreside upper tank farm; reports indicate they have a 1-month supply.
Homer	Homer	5V NG 89744 08070	Major	Reduced	Experiencing severe shortages at local gas stations after 48 hours.
JBER	JBER	6V UN 55311 95025	Moderate	Reduced	No damage; fuel distribution is hindered due to loss of power.
Kenai Peninsula Borough	Kenai Peninsula Borough	5V NH 89024 28975	Complete	Not Operational	Damage to Cook Inlet platforms. Nikiski refinery closed. At least one of the petroleum storage tanks has collapsed--estimate 100,000-gallon oil spill. The refined fuels pipeline and plant are damaged.
Ketchikan Gateway Borough/City of Ketchikan	Ketchikan Gateway Borough/City of Ketchikan	9U UB 33353 35095	Moderate	Not Operational	The aftershock causes a fuel tank spill at Petro Marine Services' upper tank farm, which quickly escalates to a Class B fire.
Kodiak Island City and Borough	Kodiak Island City and Borough	5V NE 35615 05297	None	Operational	No significant damage.
Seward	Seward	6V UM 64755 67491	Major	Not Operational	Tank farm is damaged and non-operational. Minor fuel leaks. Experiencing severe shortages at local gas stations after 48 hours.
Unalaska	Unalaska	3U UV 97947 68876	None	Operational	No significant damage.
Valdez	Valdez	6V WN 39034 72527	Major	Not Operational	The Trans-Alaska Pipeline System will be shut down for an unknown period of time in order to perform the necessary inspections.

4.5.7 Casualties

The following summary information is taken directly from the Federal Emergency Management Agency Region X Impacts document and is provided as an estimate of the casualties that may be caused by a major earthquake and tsunami. Table 32 provides casualty projections by severity and cause. Table 32 provides casualty projections according to severity and cause.

Table 32. Casualty Projections by Severity and Cause⁶

	Impacts Caused by Earthquake	Impacts Caused by Tsunami	Earthquake and Tsunami Combined	Percent of People Impacted (study population, 459,450)
Deaths	810	610	1,420	0.3%
Injuries–Severity Level 1 (medical care required)	6,890	60	6,950	1.5%
Injuries–Severity Level 2 (hospitalization required)	2,320	70	2,390	0.5%
Injuries–Severity Level 3 (life threatening injury)	430	70	500	0.1%
Total Injuries	9,640	200	9,840	2.1%
Special Injury Information				
Crush Injuries ⁷	129	N/A	N/A	N/A
Burn Injuries ⁸	43	N/A	N/A	N/A

4.5.7.1 Casualty Information by Community

Table 33 through

Table 38 provide casualty information for the communities of Anchorage, Matanuska-Susitna Borough, Kenai Peninsula Borough, Valdez, Cordova, and Kodiak. In situations where they differ, both the casualty numbers that will be reported to the State Emergency Operations Center and the numbers being used for exercise play within the community are shown.

Table 33. Anchorage Casualty Information

	Injuries–Severity Level 1 (medical care required)	Injuries–Severity Level 2 (hospitalization required)	Injuries–Severity Level 3 (life threatening injury)	Total Injuries by Age Group	Deaths
Under 5	341	115	21	477	N/A
5 to 17	824	277	51	1,152	N/A
18 to 65	2,998	1,008	184	4,190	N/A
65+	387	130	24	541	N/A
Total	4,550	1,530	280	6,360	530
Total to be Reported to State Emergency Operations Center	4,550	1,530	280	6,360	530
Community Play Casualties	2,100	624	280	3,004	530

⁶ Population estimate based on information from the 2011 census and obtained from census.gov.

⁷ At the direction of U.S. Department of Health and Human Service (HHS), crush injuries were projected to be 30 percent of earthquake-related, level 3 injuries in the 18 and older age group.

⁸ At the direction of HHS, burn injuries were projected to be 10 percent of earthquake-related, level 3 injuries in the 18 and older age group.

Table 34. Matanuska-Susitna Borough Casualty Information

	Injuries–Severity Level 1 (medical care required)	Injuries–Severity Level 2 (hospitalization required)	Injuries–Severity Level 3 (life threatening injury)	Total Injuries by Age Group	Deaths
Under 5	37	12	2	51	N/A
5 to 17	89	29	5	123	N/A
18 to 65	323	105	20	448	N/A
65+	41	14	3	58	N/A
Total to be Reported to State Emergency Operations Center	490	160	30	680	60
Community Play Casualties	490	160	30	680	60

Table 35. Kenai Peninsula Borough Casualty Information

	Injuries–Severity Level 1 (medical care required)	Injuries–Severity Level 2 (hospitalization required)	Injuries–Severity Level 3 (life threatening injury)	Total Injuries by Age Group	Deaths
Under 5	74	25	5	104	N/A
5 to 17	180	62	13	255	N/A
18 to 65	652	244	46	922	N/A
65+	84	29	6	119	N/A
Total to be Reported to State Emergency Operations Center	990	340	70	1,400	170
Community Play Casualties	990	340	70	1,400	170

Table 36. Valdez Casualty Information

	Injuries–Severity Level 1 (medical care required)	Injuries–Severity Level 2 (hospitalization required)	Injuries–Severity Level 3 (life threatening injury)	Total Injuries by Age Group	Deaths
Under 5	15	7	2	24	N/A
5 to 17	34	18	5	57	N/A
18 to 65	125	65	18	208	N/A
65+	16	8	2	26	N/A
Total to be Reported to State Emergency Operations Center	190	98	27	315	100
Community Play Casualties	125	100	42	267	0

Table 37. Cordova Casualty Information

	Injuries–Severity Level 1 (medical care required)	Injuries–Severity Level 2 (hospitalization required)	Injuries–Severity Level 3 (life threatening injury)	Total Injuries by Age Group	Deaths
Under 5	5	1	2	8	N/A
5 to 17	13	2	4	19	N/A
18 to 65	46	8	15	69	N/A
65+	6	1	2	9	N/A
Total to be Reported to State Emergency Operations Center	70	12	23	105	74
Community Play Casualties	70	12	23	105	74

Table 38. Kodiak Casualty Information

	Injuries–Severity Level 1 (medical care required)	Injuries–Severity Level 2 (hospitalization required)	Injuries–Severity Level 3 (life threatening injury)	Total Injuries by Age Group	Deaths
Under 5	50	19	5	74	N/A
5 to 17	119	45	13	177	N/A
18 to 65	435	165	46	646	N/A
65+	56	21	6	83	N/A
Total to be Reported to State Emergency Operations Center	660	250	70	980	350
Community Play Casualties	7	5	3	15	2

4.5.8 Consequences to Public Health and Medical System and Facilities

The following tables contain details regarding medical facility status including those operating on generators, those requiring evacuation, and bed counts. Medical facilities include both hospitals and nursing homes.

Table 39 provides information on hospitals and nursing homes in the affected areas that are operating on generators.

Table 39. Medical Facilities Power Status

Medical Facilities Power Status						
Geographic Division	Name	USNG	Facility Type	Beds	Damage	On Power Generation
Anchorage	Providence Alaska Medical Center	6V UN 48361 86873	Hospital	328	Slight	Yes
Anchorage	Alaska Regional Hospital	6V UN 48091 89520	Hospital	250	Slight	Yes
Anchorage	Alaska Native Medical Center	6V UN 49516 86345	Hospital	150	Slight	Yes
Anchorage	St Elias Specialty Hospital	6V UN 45093 85849	Hospital	60	Slight	Yes
Anchorage	Elmendorf Air Force Base 3rd Medical Group	6V UN 49293 93003	Hospital	55	Slight	Yes
Anchorage	North Star Behavioral Hospital (Youth)	6V UN 47767 89245	Other	200	Slight	Yes
Anchorage	Alaska Psychiatric Institute	6V UN 47905 86741	Other	80	Slight	Yes
Anchorage	Prestige Care And Rehab Center Of Anchorage	6V UN 54196 90935	Nursing Home	66	Slight	Yes
Anchorage	Anchorage Pioneer Home	6V UN 44192 89834	Assisted Living	168	Slight	Yes
Kenai Peninsula	Central Peninsula Hospital (Soldotna)	5V PH 05576 07992	Hospital	50	None	No
Kenai Peninsula	Providence Seward Medical And Care Center	6V UM 64020 65617	Hospital	48	Moderate	Yes
Kenai Peninsula	South Peninsula Hospital (Homer)	5V NG 81721 13567	Hospital	22	Slight	Yes
Kenai Peninsula	Heritage Place (Soldotna)	5V PH 05469 07940	Nursing Home	60	None	No
Kodiak Island	Providence Kodiak Island Medical Center	5V NE 37093 06685	Hospital	44	Moderate	Yes
Kodiak Island	Providence Kodiak Island Med Ltc	5V NE 36252 06325	Nursing Home	19	Moderate	Yes
Matanuska-Susitna Borough	Mat-Su Regional Medical Center (Palmer)	6V UP 80014 27532	Hospital	74	None	No

Table 39. Medical Facilities Power Status

Medical Facilities Power Status						
Geographic Division	Name	USNG	Facility Type	Beds	Damage	On Power Generation
Prince William Sound	Cordova Community Med Ltc	6V WN 68535 12320	Nursing Home	10	Moderate	Yes
Prince William Sound	Providence Valdez Medical Center	6V WN 35178 78106	Nursing Home	10	Moderate	Yes
Prince William Sound	Providence Cordova Community Medical Center	6V WN 68535 12320	Hospital	23	Moderate	Yes
Prince William Sound	Providence Valdez Medical Center	6V WN 35140 78071	Hospital	21	Moderate	Yes

Table 40 provides information on medical care facilities in the affected area (e.g., hospitals and nursing homes) that require evacuation.

Table 40. Medical Facilities Evacuation Status

Medical Facilities Evacuation Status					
Geographic Division	Name	USNG	Facility Type	Evacuation /FPM	Reason for Evacuation
Anchorage	Providence Alaska Medical Center	6V UN 48361 86873	Hospital	Yes	Staffing/loss of utilities
Anchorage	Alaska Regional Hospital	6V UN 48091 89520	Hospital	Yes	Staffing/loss of utilities
Anchorage	Alaska Native Medical Center	6V UN 49516 86345	Hospital	Yes	Staffing/loss of utilities
Anchorage	St Elias Specialty Hospital	6V UN 45093 85849	Hospital	Yes	Staffing/loss of utilities
Anchorage	Elmendorf Air Force Base 3rd Medical Group	6V UN 49293 93003	Hospital	Yes	Staffing/loss of utilities
Anchorage	North Star Behavioral Hospital (Youth)	6V UN 47767 89245	Other	Yes	Staffing/loss of utilities
Anchorage	Alaska Psychiatric Institute	6V UN 47905 86741	Other	Yes	Staffing/loss of utilities
Anchorage	Prestige Care And Rehab Center Of Anchorage	6V UN 54196 90935	Nursing Home	Yes	Staffing/loss of utilities
Anchorage	Anchorage Pioneer Home	6V UN 44192 89834	Assisted Living	Yes	Staffing/loss of utilities
Kenai Peninsula	Central Peninsula Hospital (Soldotna)	5V PH 05576 07992	Hospital	No	None

Table 40. Medical Facilities Evacuation Status

Medical Facilities Evacuation Status					
Geographic Division	Name	USNG	Facility Type	Evacuation /FPM	Reason for Evacuation
Kenai Peninsula	Providence Seward Medical And Care Center	6V UM 64020 65617	Hospital	Yes	Physical damage
Kenai Peninsula	South Peninsula Hospital (Homer)	5V NG 81721 13567	Hospital	No	Slight
Kenai Peninsula	Heritage Place (Soldotna)	5V PH 05469 07940	Nursing Home	No	None
Kodiak Island	Providence Kodiak Island Medical Center	5V NE 37093 06685	Hospital	Yes	Staffing/physical damage/utilities
Kodiak Island	Providence Kodiak Island Med Ltc	5V NE 36252 06325	Nursing Home	Yes	Staffing/physical damage/utilities
Matanuska-Susitna Borough	Mat-Su Regional Medical Center (Palmer)	6V UP 80014 27532	Hospital	No	None
Prince William Sound	Cordova Community Med Ltc	6V WN 68535 12320	Nursing Home	Yes	Staffing/physical damage/utilities
Prince William Sound	Providence Valdez Medical Center	6V WN 35178 78106	Nursing Home	Yes	Staffing/physical damage/utilities
Prince William Sound	Providence Cordova Community Medical Center	6V WN 68535 12320	Hospital	Yes	Staffing/physical damage/utilities
Prince William Sound	Providence Valdez Medical Center	6V WN 35140 78071	Hospital	Yes	Staffing/physical damage/utilities

Table 41 provides information on the number and availability of beds at medical care facilities (e.g., hospitals and nursing homes) in the affected area.

Table 41. Medical Facilities Bed Availability

Medical Facilities Bed Status										
Geographic Division	Name	USNG	Facility Type	Beds	Day 1 27-Mar	Day 2 28-Mar	Day 3 Feb-29	Day 4 30-Mar	Day 5 31-Mar	Day 6 1-Apr
Statewide	Alaska Medical Station	To be determined	Medical Shelter	250	250	130	0	0	0	0
Anchorage	Providence Alaska Medical Center	6V UN 48361 86873	Hospital	328	0	0	0	0	0	0
Anchorage	Alaska Regional Hospital	6V UN 48091 89520	Hospital	250	0	0	0	0	0	0
Anchorage	Alaska Native Medical Center	6V UN 49516 86345	Hospital	150	0	0	0	0	0	0

Table 41. Medical Facilities Bed Availability

Medical Facilities Bed Status										
Geographic Division	Name	USNG	Facility Type	Beds	Day 1 27-Mar	Day 2 28-Mar	Day 3 Feb-29	Day 4 30-Mar	Day 5 31-Mar	Day 6 1-Apr
Anchorage	St Elias Specialty Hospital	6V UN 45093 85849	Hospital	60	0	0	0	0	0	0
Anchorage	Elmendorf Air Force Base 3rd Medical Group	6V UN 49293 93003	Hospital	55	0	0	0	0	0	0
Anchorage	North Star Behavioral Hospital (Youth)	6V UN 47767 89245	Other	200	100	100	80	80	80	80
Anchorage	Alaska Psychiatric Institute	6V UN 47905 86741	Other	80	28	25	22	17	14	14
Anchorage	Prestige Care And Rehab Center Of Anchorage	6V UN 54196 90935	Nursing Home	66	22	14	14	10	10	8
Anchorage	Anchorage Pioneer Home	6V UN 44192 89834	Assisted Living	168	50	20	15	0	0	0
Kenai Peninsula	Central Peninsula Hospital (Soldotna)	5V PH 05576 07992	Hospital	50	0	0	0	0	0	0
Kenai Peninsula	Providence Seward Medical And Care Center	6V UM 64020 65617	Hospital	48	0	0	0	0	0	0
Kenai Peninsula	South Peninsula Hospital (Homer)	5V NG 81721 13567	Hospital	22	0	0	0	0	0	0
Kenai Peninsula	Heritage Place (Soldotna)	5V PH 05469 07940	Nursing Home	60	10	10	10	10	10	10
Kodiak Island	Providence Kodiak Island Medical Center	5V NE 37093 06685	Hospital	44	0	0	0	0	0	0
Kodiak Island	Providence Kodiak Island Med Ltc	5V NE 36252 06325	Nursing Home	19	0	0	0	0	0	0
Matanuska-Susitna Borough	Mat-Su Regional Medical Center (Palmer)	6V UP 80014 27532	Hospital	74	0	0	0	0	0	0
Prince William Sound	Cordova Community Med Ltc	6V WN 68535 12320	Nursing Home	10	0	0	0	0	0	0
Prince William Sound	Providence Valdez Medical Center	6V WN 35178 78106	Nursing Home	10	0	0	0	0	0	0

Table 41. Medical Facilities Bed Availability

Medical Facilities Bed Status										
Geographic Division	Name	USNG	Facility Type	Beds	Day 1 27-Mar	Day 2 28-Mar	Day 3 Feb-29	Day 4 30-Mar	Day 5 31-Mar	Day 6 1-Apr
Prince William Sound	Providence Cordova Community Medical Center	6V WN 68535 12320	Hospital	23	0	0	0	0	0	0
Prince William Sound	Providence Valdez Medical Center	6V WN 35140 78071	Hospital	21	0	0	0	0	0	0

Table 42 provides information on the pharmaceutical supply chain and distribution network in the affected area.

Table 42. Pharmaceutical Supply Chain and Distribution Network

Geographic Division	Name	Facility Type	Damage	Description
Anchorage Pharmaceutical Supply				
Anchorage	ALASKA NATIVE TRIBAL HEALTH	Pharmaceutical	Moderate	45% Physical damage/utilities/staffing
Anchorage	MCKESSON CORPORATION	Pharmaceutical	Moderate	55% Physical damage/utilities/staffing

Table 43 provides information on the oxygen supply and concentration capability and capacity in the affected area.

Table 43. Oxygen Supply and Concentration Capability and Capacity

Geographic Division	Name	Facility Type	Beds	Damage	Description
Anchorage Oxygen Facilities					
Anchorage	Air Liquid	Oxygen Facility	328	Moderate	Physical damage

Table 44 provides information on the status of the blood supply in the affected area.

Table 44. Blood Supply Status

Geographic Division	Name	Facility Type	Damage	Supply	Description
Anchorage Blood Bank					
45% damage to infrastructure, utilities affected, intermittent power outages.					
Anchorage	Blood Bank of Alaska	Blood Bank	Moderate	Affected	Physical damage/utilities
Fairbanks Blood Bank					
Not affected, limited supply					
Fairbanks	Blood Bank of Alaska	Blood Bank	None	Limited	None

Table 45 provides information on the status of dialysis centers in the affected area.

Table 45. Dialysis Center Statuses

Dialysis Centers					
Community	Address	USNG	Facility Type	Beds	Damage Level
Anchorage Dialysis Centers					
45% damage to infrastructure, utilities affected, power outage to all Anchorage Dialysis Centers					
Anchorage	9085 Blackberry St , Anchorage	6V UN 41518 81768	Dialysis Center	328	Slight
Anchorage	901 E Diamond Blvd, Anchorage	6V UN 45741 82376	Dialysis Center	250	Slight
Anchorage	3950 Laurel Street, Anchorage	6V UN 47582 86677	Dialysis Center	150	Slight
Anchorage	4050 Lake Otis Pkwy Ste 106, Anchorage	6V UN 47334 86599	Dialysis Center	60	Slight
Mat-Su Dialysis Centers					
No Damage, utilities not affected intermittent power outages					
Mat-Su	3787 E Meridian Loop, Wasilla	6V UP 75003 30663	Dialysis Center	50	None
Kenai Peninsula Dialysis Centers					
No Damage, utilities not affected intermittent power outages					
Kenai Peninsula	289 N Fireweed Street Suite A, Soldotna	5V PH 05465 08069	Dialysis Center	60	None
Fairbanks Dialysis Centers					
No Damage, utilities not affected					
Fairbanks	1863 Airport Way, Fairbanks	6W VS 64133 90470	Dialysis Center	44	None
Juneau Dialysis Centers					
No damage, utilities not affected					
Juneau	9109 Mendenhall Road Suite 6, Juneau	8V NK 23847 70150	Dialysis Center	19	None

4.5.9 Mass Care and Sheltering Consequences

4.5.9.1 Evacuation and Sheltering

- Destruction and damage to residences combined with widespread power outages has necessitated the establishment of temporary shelters.
- Currently, nine shelters are planned to open throughout the participating communities during the exercise; however, this number may change due to player actions.

Table 46 provides information on evacuation and sheltering needs in the affected area.

Table 46. Evacuation and Sheltering Needs

	Consequences by Earthquake	Consequences by Tsunami	Earthquake and Tsunami Combined	Total Number of People in Study Area	Percent of People Affected
People in need of short term sheltering	68,920	3,210	72,130	459,450	15.7%
Pets in need of short term sheltering	31,780	1,480	33,260	N/A	N/A
People in need of basic commodity support	206,130	3,210	209,340	459,450	45.6%
Pets in need of basic commodity support	95,050	1,480	96,530	N/A	N/A

4.5.9.2 Mass Care and Sheltering

Table 47 and Table 48 provide sheltering and feeding and hydration requirements by community. The numbers in the tables are taken from the numbers the communities will report to the State Emergency Operations Center and may differ from the numbers they are actually using for exercise play within their own community, both figures are shown.

Table 47. Shelter Requirements

Community	Community Play		Reported to SEOC	
	People	Pets	People	Pets
Anchorage	42,620	19,650	42,620	19,650
Matanuska-Susitna Borough	2,680	1,230	2,680	1,230
Kenai Peninsula Borough	11,760	5,430	11,760	5,430
Valdez	120	75	4,492	2,070
Cordova	30	17	1,408	650
Kodiak Island Borough	12	6	9,170	4,230
TOTAL	57,222	26,408	72,130	33,260

Anticipated sheltering actions:

- Anchorage–shelters will be set up at the following locations:
 - Bear Valley Elementary School
 - Aurora Elementary School
 - Mount Iliamna Elementary School
- Valdez
 - Due to the nature of the event, a number of the students will not be picked up by their parents or other family members. The elementary school will be locked down and a shelter will be established. Reunification procedures will be exercised.
- Cordova anticipates that 25 percent of the identified number will actually go to the shelter.
 - Bidarki–first responders
 - Baptist Church–general public
 - Reluctant Fisherman Inn
- Kodiak anticipates 12 displaced families will require shelter

Table 48. Feeding and Hydration Requirements

Community	Community Play		SEOC	
	People	Pets	People	Pets
Anchorage	42,620	19,650	42,620	19,650
Matanuska-Susitna Borough	12,910	5,950	12,910	5,950
Kenai Peninsula Borough	33,710	15,550	33,710	15,550
Valdez	600	600	8,430	8,430
Cordova	125	17	2,013	650
Kodiak Island Borough	12	6	9,110	6,710

There is no sheltering and feeding and hydration information for the following communities: Ketchikan Gateway Borough/City of Ketchikan, City/Borough of Juneau, Unalaska, and Fairbanks/City of North Pole.

4.6 Subsequent Aftershock and Tsunami-induced Consequences

The following describes the damages and consequences, by day, of the post-initial 10:10am Alaska Daylight Time March 27 9.2-magnitude earthquake event aftershocks and tsunamis.

4.6.1 March 27

Table 49 and Table 50 describe the damages, casualties, and sheltering requirements related to the following events:

- 03-27-1840 Zulu Time 3/27 at 1040 Alaska Daylight Time 6.1M aftershock affecting the Matanuska-Susitna Borough
- 03-27-2155 Zulu Time 3/27 at 1355 Alaska Daylight Time 5.1M aftershock affecting the Matanuska-Susitna Borough

Table 49. March 27 Aftershock and Tsunami Damages

March 27 Aftershock and Tsunami Damage						
Community	Name	Type	USNG	Damage Level	Damage Status	Description
Big Lake	Big Lake Volunteer Fire Department	Fire	6V UP 45256 24063	Moderate	Reduced	Moderate damage including partial wall collapse.
Big Lake	Trucking company building	Commercial	6V UP 44276 27513	Major	Not Operational	Roof collapse.
Fort Greely	Fort Greely	Communications	6V WR 61619 94435	Minor	Reduced	Cable cut inside fence at Ground-Base Midcourse Defense—comes back online at 1300 Alaska Daylight Time on March 27.
Houston	George Parks Highway Bridge	Roads-Bridges	6V UP 51535 35813	Complete	Not Operational	George Parks Highway Bridge over river south of Houston collapsed.
Knik-Fairview	South Settlers Drive	Residential	6V UP 60269 22078	Major	Not Operational	Major damage to 10 homes on South Settlers Drive between Dow Drive and Borigo Drive.
Matanuska-Susitna Borough	Matanuska-Susitna Borough	Electric	6V UQ 66667 21403	Major	Not Operational	The power grid is functioning normally after the initial earthquake, but will fail following a late afternoon aftershock on March 27 from Houston to Palmer, but will come back the morning of March 28. Friday afternoon following the aftershock, the valley will experience a widespread outage because the Port McKenzie transmission tower is damaged. It is anticipated to take at least 3 days to repair the tower and restore service to the affected area.
Meadow Lakes	West Dean Drive	Residential	6V UP 60181 34300	Moderate	Reduced	Moderate damage to 4 homes between 7781-7365 West Dean Drive.
Palmer	Grocery Store #7	Commercial	6V UP 87247 31405	Major	Not Operational	Damaged
Palmer	Hardware Store #3	Commercial	6V UP 71597 29317	Major	Not Operational	Damaged
Talkeetna	Grocery Store #8	Commercial	5V PK 49590 13512	Major	Not Operational	Store and at least 3 surrounding buildings are on fire.
Talkeetna	Merchant Store #1	Commercial	6V UP 72417 29511	Major	Reduced	Damaged

Table 49. March 27 Aftershock and Tsunami Damages

March 27 Aftershock and Tsunami Damage						
Community	Name	Type	USNG	Damage Level	Damage Status	Description
Talkeetna	3-9 Talkeetna and Palmer-Fishhook Stations 3-9	Fire	5V PK 51406 03366	Complete	Not Operational	Partial collapse.
Wasilla	Hardware Store #2	Commercial	6V UP 73436 28986	Major	Not Operational	Damaged
Wasilla	Jojobe Road	Residential	6V UP 51305 28013	Major	Not Operational	Major damage to 5 homes between 14281-13852 Jojobe Road.
Wasilla	Merchant Store #2	Commercial	6V UP 72099 29696	Major	Not Operational	Liquefaction/subsidence of a culvert on Palmer Wasilla Highway at Cottonwood Creek outflow adjacent to Merchant Store #2.
Wasilla	Merchant Store #4	Commercial	6V UP 87546 31522	Major	Not Operational	Damaged
Wasilla	Tanaina Elementary	School	6V UP 69853 32944	Minor	Reduced	Broken windows
Wasilla	Meadow Lakes Volunteer Fire Department 7	Fire	6V UP 60725 33644	Minor	Operational	Minor damage to garage bay doors. Doors are stuck open.
Wasilla	West Lakes Boulevard	Roads-Bridges	6V UP 46441 29308	Moderate	Reduced	West Lakes Boulevard restricted to one lane between Horseshoe Lake Road and South Rogers road due to cracks and heaves in road.

Table 50. March 27 Aftershock and Tsunami Casualties & Shelter Requirements

March 27 Aftershock and Tsunami Casualties & Shelter Requirements				
Matanuska-Susitna				
Casualties				
	Injuries Severity Level 1	Injuries Severity Level 2	Injuries Severity Level 3	Total by Age Group
Under 5	0	0	0	0
5 to 17	1	0	0	1
18 to 65	8	0	0	8
65+	0	0	0	0
Total	9	0	0	0
Shelter Requirements				
People	48			
Pets	4			

4.6.2 March 28

Table 51 and Table 52 describe the damages, casualties, and sheltering requirements related to the following events:

- 03-28-1330 Zulu Time/0530 Alaska Daylight Time 6.9 magnitude aftershock near Shemya (1' tsunami hits Unalaska)
- 03-28-1600 Zulu Time/0800 Alaska Daylight Time 6.5 magnitude aftershock in Kodiak
- 03-28-1700 Zulu Time/0900 Alaska Daylight Time 6.4 magnitude aftershock northeast of Valdez (including impacts to Cordova)
- 03-27-1718 Zulu Time/0918 Alaska Daylight Time 6.8 magnitude aftershock in Ketchikan
- 03-28-1745 Zulu Time/0945 Alaska Daylight Time 6.9 magnitude aftershock at Delta Junction
- 03-28-1800_1805 Zulu Time/1000 Alaska Daylight Time 5.6 magnitude aftershock in Cordova with an associated tsunami at 1005
- 03-28-2100 Zulu Time/1300 Alaska Daylight Time 6.4 magnitude aftershock occurs 15 miles south of Cordova
- 03-28-2130 Zulu Time/1330 Alaska Daylight Time 5.2 magnitude aftershock 10 miles east of Cordova
- 03-28-2130 Zulu time/1330 Alaska Daylight Time 6.8 magnitude aftershock at Houston

Table 51. March 28 Aftershock and Tsunami Damages

March 28 Aftershock and Tsunami Damage						
Community	Name	Type	USNG	Damage Level	Damage Status	Description
Copper Center	Kenny Lake Volunteer Fire Department	Fire	6V XP 05966 45608	Moderate	Reduced	Moderate damage to garage bay and doors.
Cordova	Museum #1	Commercial	6V WN 68108 12571	Minor	Operational	Minor damage, broken windows.
Cordova	Grocery Store #9	Commercial	6V WN 67801 12521	Minor	Operational	Minor damage to shelves and products.
Cordova	Hotel G	Commercial	6V WN 67681 12451	Complete	Not Operational	Hotel building destroyed.
Cordova	Cultural Center #2	Commercial	6V WN 67752 12502	Complete	Not Operational	Building destroyed.
Cordova	Newspaper #2	Commercial	6V WN 68346 12849	Major	Not Operational	Major damage to walls and roof.
Cordova	Seafood processing #7	Commercial	6V WN 68268 14161	Complete	Not Operational	Roof and walls collapsed.
Cordova	State of Alaska, Cordova Ferry Terminal	Ferry	6V WN 68237 14178	Major	Not Operational	After tsunami on 3/28, ferry terminal major damage and is not operational.
Cordova	United States Post Office #3	Government	6V WN 67991 12653	Major	Not Operational	Major building damage, wall collapsed.

Table 51. March 28 Aftershock and Tsunami Damages

March 28 Aftershock and Tsunami Damage						
Community	Name	Type	USNG	Damage Level	Damage Status	Description
Cordova	Cordova Small Boat Harbor	Ports	6V WN 67683 13064	Complete	Not Operational	Boat harbor is completely destroyed from the slide tsunami and is closed. The infrastructure of the dock requires inspection and possible repair for possible ferry use.
Cordova	Cordova	Residential	6V WN 69016 12630	Major	Not Operational	Major damage to 15 homes in neighborhood bordered by Spruce Street, Lake Avenue, and Birch Street.
Cordova	Cordova	Residential	6V WN 68513 12555	Major	Not Operational	Major damage to 4 apartments at 409 6th Street.
Cordova	Intersection of Council Avenue and 1st Street	Roads-Bridges	6V WN 68087 12846	Moderate	Not Operational	Intersection of Council Avenue and 1st Street blocked by debris.
Cordova	Lefevre Street	Roads-Bridges	6V WN 69026 12293	Moderate	Not Operational	Lefevre Street blocked by debris between Chase Avenue and Copper River Highway.
Cordova	Prince William Sound Community College	Schools	6V WN 68184 12470	Moderate	Reduced	Damage to 2 classrooms.
Fort Greely	Fort Greely	Government	6V WR 62373 96131	Minor	Reduced	Damage to building 101, steam plant for air field.
Glennallen	Hotel F	Commercial	6V WP 76336 86990	Complete	Not Operational	Partial roof collapse.
Glennallen	Glennrich Volunteer Fire Department	Fire	6V WP 76090 87102	Moderate	Reduced	Moderate structural damage.
Houston	Restaurant A	Commercial	6V UP 50759 36158	Complete	Not Operational	Building collapsed.
Houston	Houston Volunteer Fire Department	Fire	6V UP 51307 36227	Major	Reduced	Moderate damage, partial wall collapse.
Houston	United States Post Office	Government	6V UP 51045 36210	Complete	Not Operational	Roof and 2 walls collapsed.
Houston	Houston Police Department	Police	6V UP 51320 36250	Major	Not Operational	Severe damage, 2 walls collapsed.
Houston	Matanuska-Susitna	Roads-Bridges	6V UP 52666 36290	Complete	Not Operational	Armstrong Road Bridge over Coho Creek collapsed 6.
Houston	Houston High School	Schools	6V UP 53020 31638	Major	Not Operational	Houston High School is damaged. Partial roof collapse.

Table 51. March 28 Aftershock and Tsunami Damages

March 28 Aftershock and Tsunami Damage						
Community	Name	Type	USNG	Damage Level	Damage Status	Description
Houston	Houston Middle School	Schools	6V UP 52858 31288	Major	Not Operational	Houston Middle School is damaged. Partial roof collapse.
Ketchikan	Ketchikan International Airport (KTN)	Airports	3U UV 99222 71754	Minor	Operational-VFR	VOR inactive until recertification completed (72 hours minimum).
Ketchikan	Seafood Corp #5	Commercial	9U UB 31060 36700	Minor	Operational	Seafood processing plant has flood damage. Some electrical equipment flood damaged.
Ketchikan	Ketchikan Police	Police	9U UB 32101 36129	Minor	Operational	Ketchikan Police experiencing intermittent land line and cell communications.
Ketchikan	Carlana Lake Dam	Dams	9U UB 30178 39507	Major	Not operational	Carlanna Lake Dam showing cracks and is leaking.
Ketchikan	Ketchikan Emergency Medical Services	Emergency Medical Services	9U UB 32136 36078	Minor	Operational	Minor damage to flooding.
Ketchikan	Ketchikan Emergency Operations Center	Emergency Operations Center	9U UB 32082 36089	Minor	Operational	City Hall at 334 Front Street has significant water damage from broken water main and loss of power.
Ketchikan	Alaska Inter-Island Ferry	Ferry	9U UB 29174 37458	Minor	Operational	Ferry pier damaged when ferry impacts the pier due to tsunami action.
Ketchikan	Ketchikan Fire	Fire	9U UB 32196 36061	Minor	Operational	Fire station suffers damage from flooding.
Ketchikan	Boat Fuel	Fuel	9U UB 33255 35120	Minor	Reduced	Boat fuel storage leaking 400 gallons of diesel fuel into the Ketchikan harbor.
Ketchikan	Marine Services B	Petrol-Refined Fuels	9U UB 33353 35095	Moderate	Not operational	The aftershock causes a fuel tank spill at Marine Services' B upper tank farm which quickly escalates to a fire .
Ketchikan	Ketchikan Police	Police	9U UB 32101 36129	Minor	Operational	Experiencing intermittent power outages.
Ketchikan	Port of Ketchikan	Ports	9U UB 33238 35210	Minor	Operational	Some pier damage as a result of boats impacting the pier due to tsunami action.
Ketchikan	Ketchikan	Residential	9U UB 30366 37130	Major	Operational	Second tsunami causes structural damages to 20 homes.

Table 51. March 28 Aftershock and Tsunami Damages

March 28 Aftershock and Tsunami Damage						
Community	Name	Type	USNG	Damage Level	Damage Status	Description
Ketchikan	Ketchikan	Residential	9U UB 30506 36994	Minor	Operational	10 residences with minor damage. Numerous calls with regards to the quake.
Ketchikan	Tongass Highway (Ward Creek Bridge)	Roads-Bridges	9U UB 27912 43495	Minor	Reduced	Ward Creek Bridge is open to single lane traffic. Further repairs required.
Ketchikan	Ketchikan	Dams	9U UB 29443 39092	Major	Not Operational	Aftershock-induced dam breach requires evacuation of 150 to 200 people and need to establish a shelter. The community consists of mostly vulnerable populations of elderly and non-English speaking populations. Damage to the dam is observed which launches the Ketchikan Lakes Emergency Action Plan, at a Condition A, "failure is imminent or has occurred."
Kodiak	Bank #1	Commercial	5V NE 35298 05184	Moderate	Not Operational	Moderate damage to bank.
Kodiak	Hotel H	Commercial	5V NE 34962 05338	Moderate	Reduced	Moderate damage to portion of hotel.
Kodiak	Restaurant A	Commercial	5V NE 37006 06983	Major	Not Operational	Major damage to restaurant. 8 customers and employees trapped under collapsed roof.
Kodiak	Kodiak Electric Association	Electric	5V NE 35834 05421	Moderate	Reduced	Moderate damage to reception portion of building
Kodiak	Kodiak homes	Residential	5V NE 36075 06514	Major	Not Operational	6 homes between 1110-1310 Madsen Avenue major damage and unusable.
Ouzinkie	United States Post Office #1	Government	5V NE 29281 20018	Major	Not Operational	Major damage
Palmer	Government Admin Building – Palmer	Government	6V UP 88289 31581	Major	Not Operational	Government Admin Building – Palmer: Older portion of the building is damaged and need to be evacuated – newer section is sound
Port Lions	Port Lions Department of Public Safety	Fire	5V NE 06528 13829	Minor	Operational	Minor structural damage- broken windows, cracked drywall.

Table 51. March 28 Aftershock and Tsunami Damages

March 28 Aftershock and Tsunami Damage						
Community	Name	Type	USNG	Damage Level	Damage Status	Description
Unalaska	Seafoods #4	Commercial	3U UV 98685 71088	Moderate	Reduced	Moderate flooding damage.
Unalaska	Unalaska	Communications	3U UV 99630 72253	Moderate	Reduced	Landline telephone connectivity is intermittent.
Unalaska	Unalaska Emergency Medical Services	Emergency Medical Services	3U UV 98667 70279	Moderate	Reduced	Emergency Medical Services garage roof collapse damages several ambulances.
Unalaska	Unalaska Fire	Fire	3U UV 98629 70300	Moderate	Reduced	Cracked foundation, garage doors to fire station inoperable.
Unalaska	Unalaska Police	Police	3U UV 98629 70301	Major	Reduced	Roof collapse in Division of Police services. Some office space uninhabitable.
Unalaska	Port of Dutch Harbor	Ports	3U VV 00103 74202	Minor	Operational	Several fishing boats impact pier after tsunami, sustain damage.
Unalaska	Unalaska	Roads-Bridges	3U UV 99222 71754	Moderate	Not Operational	Roads west of East Point Drive are unpassable due to heavy debris.
Unalaska	Unalaska	Roads-Bridges	3U UV 98315 70641	Major	Not Operational	Airport Beach Road bridge is impassable due to structure damage.
Valdez	Bank #2	Commercial	6V WN 34990 77367	Minor	Operational	Minor damage, broken windows.
Valdez	Grocery Store #10	Commercial	6V WN 34504 77393	Minor	Operational	Minor damage to shelves and products.
Valdez	Hotel E	Commercial	6V WN 34974 77070	Moderate	Operational	Moderate damage to stairs.
Valdez	Newspaper #1	Commercial	6V WN 34723 77532	Minor	Operational	Minor damage and cracking to drywall.
Valdez	Downtown Valdez	Commercial	6V WN 34757 77526	Minor	Reduced	Additional minor damage to buildings in the downtown area.

Table 52. March 28 Aftershock and Tsunami Damages Casualties and Shelter Requirements

March 28 Aftershock and Tsunami Casualties and Shelter Requirements				
Cordova				
Casualty				
	Injuries Severity Level 1	Injuries Severity Level 2	Injuries Severity Level 3	Total by Age Group
Under 5	0	0	0	0
5 to 17	0	0	0	0
18 to 65	5	7	0	12
65+	0	0	0	0
Total	5	7	0	12
Shelter				
People	58			
Pets	4			
Ketchikan				
Casualty				
	Injuries Severity Level 1	Injuries Severity Level 2	Injuries Severity Level 3	Total by Age Group
Under 5	0	0	0	0
5 to 17	0	0	0	0
18 to 65	0	0	0	0
65+	0	0	0	0
Total	0	0	0	0
Shelter				
People	47			
Pets	5			
Kodiak				
Casualty				
	Injuries Severity Level 1	Injuries Severity Level 2	Injuries Severity Level 3	Total by Age Group
Under 5	0	0	0	0
5 to 17	0	0	0	0
18 to 65	4	0	0	4
65+	1	0	0	1
Total	5	0	0	5
Shelter				
People	14			
Pets	1			
Matanuska-Susitna				
Casualty				
	Injuries Severity Level 1	Injuries Severity Level 2	Injuries Severity Level 3	Total by Age Group
Under 5	0	0	0	

Table 52. March 28 Aftershock and Tsunami Damages Casualties and Shelter Requirements

March 28 Aftershock and Tsunami Casualties and Shelter Requirements				
5 to 17	0	0	0	0
18 to 65	2	0	0	2
65+	0	0	0	0
Total	2	0	0	2
Shelter				
People	0			
Pets	0			
Valdez				
Casualty				
	Injuries Severity Level 1	Injuries Severity Level 2	Injuries Severity Level 3	Total by Age Group
Under 5	0	0	0	0
5 to 17	2	0	0	2
18 to 65	3	0	0	3
65+	0	0	0	0
Total	5	0	0	5
Shelter				
People				
Pets				
Unalaska				
Casualty				
	Injuries Severity Level 1	Injuries Severity Level 2	Injuries Severity Level 3	Total by Age Group
Under 5	0	0	0	0
5 to 17	0	0	0	0
18 to 65	0	0	0	0
65+	0	0	0	0
Total	0	0	0	0
Shelter				
People	200			
Pets	13			

4.6.3 March 29

- Table 53 and Table 54 describe the damages, casualties, and sheltering requirements related to the following events:
- 03-29-1715 Zulu Time/0915 Alaska Daylight Time 6.8 magnitude aftershock at Wasilla
- 03-29-1756 -1816 Zulu Time/0956 Alaska Daylight Time 7.5 magnitude aftershock southwest of Valdez and associated tsunami at 1016 Alaska Daylight Time

Table 53. March 29 Aftershock and Tsunami Damages

March 29 Aftershocks and Tsunami						
Community	Name	Type	USNG	Damage Level	Damage Status	Description
Valdez	1682-1709 Broadway Court	Residential	6V WN 32841 78238	Complete	Not Operational	5 homes destroyed.
Valdez	2001-1803 Homestead Road	Residential	6V WN 32559 77762	Complete	Not Operational	4 homes destroyed.
Valdez	George H. Gilson Junior High School	Schools	6V WN 34501 78339	Major	Not Operational	Major damage to gym/cafeteria area.
Valdez	Grocery store #11	Commercial	6V WN 35051 77550	Major	Not Operational	Major structural damage, roof collapsed.
Valdez	Hotel I	Commercial	6V WN 35060 77388	Major	Not Operational	Major structural damage.
Valdez	Port of Valdez Marine Terminal	Port	6V WN 32386 72503	Major	Not Operational	Major damage to tanker berths.
Valdez	Prince William Sound Community College	Commercial	6V WN 34713 77897	Major	Not Operational	Walls collapsed Health and Fitness Center.
Valdez	State of Alaska, Valdez Ferry Terminal S	Ferry	6V WN 34270 76785	Major	Not Operational	Major damage to ferry terminal.
Valdez	Valdez Fire Department Station 3	Fire	6V WN 43132 73373	Complete	Not Operational	Walls/roof collapse.
Valdez	Valdez High School	Schools	6V WN 34598 78345	Major	Not Operational	Major damage to library walls/roof.
Wasilla	Central Matanuska-Susitna Fire Department	Fire	6V UP 70822 25575	Complete	Not Operational	Roof collapse.
Wasilla	Credit Union #5	Commercial	6V UP 70457 30308	Major	Not Operational	Moderate structural damage to side of building.
Wasilla	Larson Elementary	Schools	6V UP 73548 33032	Major	Not Operational	Collapse of gym/cafeteria.
Wasilla	Midvalley High School	Schools	6V UP 60178 30385	Major	Not Operational	Roof collapse in library.
Wasilla	Snowshoe Elementary	Schools	6V UP 66953 24460	Major	Not Operational	Major damage to wall, partial roof collapse.

Table 53. March 29 Aftershock and Tsunami Damages

March 29 Aftershocks and Tsunami						
Community	Name	Type	USNG	Damage Level	Damage Status	Description
Wasilla	Grocery store #9	Commercial	6V UP 70722 30089	Complete	Not Operational	Major structural damage.
Wasilla	Hotel J	Commercial	6V UP 68170 29610	Major	Not Operational	Partial roof collapse, staircase damage.
Wasilla	Wasilla Emergency Operations Center	EOC	6V UP 72218 29261	Minor	Operational	Minor damage; facility is operational.
Wasilla	Wasilla Police Department	Police	6V UP 72256 29208	Major	Not Operational	Collapse of 2 walls.

Table 54. March 29 Aftershock and Tsunami Casualties and Shelter Requirements

March 29 Aftershock and Tsunami Casualties and Sheltering Requirements				
Matanuska-Susitna				
Casualty				
	Injuries Severity Level 1	Injuries Severity Level 2	Injuries Severity Level 3	Total by Age Group
Under 5	0	0	0	0
5 to 17	1	0	0	1
18 to 65	5	0	0	5
65+	1	0	0	1
Total	7	0	0	7
Shelter				
People	12			
Pets	2			
Valdez				
Casualty				
	Injuries Severity Level 1	Injuries Severity Level 2	Injuries Severity Level 3	Total by Age Group
Under 5	0	0	0	0
5 to 17	1	1	0	2
18 to 65	2	2	0	4
65+	0	0	0	0
Total	3	3	0	6
Shelter				
People	25			
Pets	3			

4.6.4 March 30

Table 55 and Table 56 describe the damages, casualties, and shelter requirements related to the following event:

- 03-30-1830 Zulu Time/1030 Alaska Daylight Time 6.5 magnitude aftershock at Kodiak

Table 55. March 30 Aftershock and Tsunami Damages

March 30 Aftershock and Tsunami Damage						
Community	Name	Type	USNG	Damage Level	Damage Status	Description
Kodiak	Kodiak College	Commercial	5V NE 37824 07429	Major	Not Operational	Moderate damage to west corner of Carolyn Floyd Library. Partial wall collapse and roof damage.
Kodiak	Restaurant B	Commercial	5V NE 35266 05537	Major	Not Operational	Major damage to building-wall collapse.
Kodiak	Upper Reservoir Dam	Dams	5V NE 35547 07168	Major	Reduced	8' long crack and bowing in dam wall.
Kodiak	Women's Bay	Roads-Bridges	5V ND 24581 96168	Moderate	Not Operational	Woman's Bay Drive west of intersection with Alder Way blocked by debris.
Kodiak	Women's Bay Volunteer Fire Department	Fire	5V ND 25149 97221	Minor	Operational	Broken windows.

Table 56. March 30 Aftershock and Tsunami Casualties and Shelter Requirements

March 30 Aftershock and Tsunami Casualties and Shelter Requirements				
Kodiak				
Casualty				
	Injuries Severity Level 1	Injuries Severity Level 2	Injuries Severity Level 3	Total by Age Group
Under 5	0	0	0	
5 to 17	0	0	0	0
18 to 65	2	0	0	2
65+	0	0	0	0
Total	2			
Shelter				
People	9			
Pets	1			

4.6.5 April 1

Table 57 describes the damages related to the following event, no additional casualties or sheltering requirements are associated with this event:

- 04-01-2000 Zulu Time/1200 Alaska Daylight Time 6.4 magnitude aftershock northeast of Valdez

Table 57. April 1 Aftershock and Tsunami Damages

April 1 Aftershock and Tsunami Damage						
Community	Name	Type	USNG	Damage Level	Damage Status	Description
Valdez	State of Alaska, Valdez Ferry Terminal S	Ferry	6V WN 34270 76785	Complete	Not Operational	Power generating plants destroyed.

4.7 Fairbanks/North Pole Specific Scenario Narrative

City of North Pole has experienced problems with their water and sewer plant systems throughout the winter and has had several break downs, but otherwise there are no significant events occurring.

4.7.1.1 Monday, March 24, 2014

North Pole Public Works starts to receive phone calls from residents complaining about low water pressure problems, and some complain they have no water.

4.7.1.2 Tuesday, March 25, 2014

On Tuesday, the North Pole Water Plant started to see a significant decline in its ability to produce water for the city. North Pole Public Works musters employees to check the city water system to determine the cause of the problem. Large pools of water are found in several remote locations of the city. North Pole Public Works makes arrangements for a contractor to bring in a remote camera to travel inside the water system/piping. The contractor is coming from Anchorage and will arrive on Wednesday evening.

4.7.1.3 Wednesday, March 26, 2014

At midday Wednesday, the North Pole Sewer Plant starts to receive high-level sewage alarms. The plant and lagoon are checked, revealing large amounts of sewage backing up. By Wednesday evening, residents start to report sewage backing up in their homes. Police patrol officers also report puddles forming around sewer manhole covers in the street. Sewage is backing up throughout the city, causing a strong aroma of sewage that is being reported throughout the city.

On Wednesday evening, the North Pole Mayor calls a meeting of key leaders to get an update on the situation. A decision is made to open the North Pole Emergency Operations Center at 8:00 a.m. Alaska Daylight Time on Thursday morning.

4.7.1.4 *Thursday, March 27, 2014*

At 8:00 a.m. Alaska Daylight Time, the North Pole Emergency Operation Center is operational. The camera contractor, Vivid Water, is setting up equipment to scope the interior of the North Pole water pipes. At about 10:15 a.m. Alaska Daylight Time, ground movement/shakes are noted by workers but passed off as normal day-to-day earthquakes. At 10:30 a.m. Alaska Daylight Time, as public works employees take their morning union-mandated break, they start checking social media and begin seeing reports that a massive earthquake occurred in Anchorage.

Fairbanks and the interior of Alaska felt the earthquake; however, due to degraded communications the total effects of the earthquake is uncertain. Information on location of the earthquake or subsequent damage is initially unknown. The Fairbanks Emergency Operations Center as well as political leaders is receiving bits and pieces of information advising that there is significant damage south of the Alaska Range. Dispatchers as well as local governmental officials are receiving inquiries for information from local residences as well as the media. Rumors abound of a tragedy of great magnitude in Anchorage, but they cannot be verified. Increasing numbers of calls are being received by dispatch regarding concerns for the welfare of family members that live south of the range. Cell phone communication is spotty at best. Some calls go through, some are cut off. The cell system quickly becomes overloaded and unusable. Alaska Land Mobil Radio communication is working but is experiencing outages. Agencies have to revert to conventional very high frequency and ultra high frequency radio communications for local use.

Governmental officials and emergency management staff for the Cities of Fairbanks and North Pole gather in their respective communities and decide to activate their Emergency Operations Center. City of North Pole's Emergency Operations Center is already operational due to their water and sewer system issues.

As the Emergency Operations Center ramp up, attempts to communicate with the State Emergency Operations Center are unsuccessful by conventional means (i.e., telephone and ALMR). No cell phone voice communication is available either. The Emergency Operations Center establishes satellite phone communications. Also, an arctic amateur radio user (Ham radio) is contacted and responds to the Emergency Operations Center to help establish alternate communications.

As communications are established with the State Emergency Operations Center, information begins to flow in on the magnitude of the quake and resulting damage. The State Emergency Operations Center also begins to inquire on available resources from the interior that can assist with damage assessments and urban search and rescue for collapsed structures in Anchorage.

Local Emergency Operations Centers are now assessing local damage (if any) and estimating potential future affects the quake may have on the interior. The Emergency Operations Center is also working to mobilize local Urban Search and Rescue resources into a strike team. This Urban Search and Rescue strike team will travel to Anchorage to assist in Urban Search and Rescue operations.

As Emergency Operations Center gathers damage assessments, they are receiving requests from hospitals in Anchorage, Matanuska-Susitna, and Valdez to assist with relocating patients currently at local hospitals to make room for the large number of trauma injuries coming in due

to the earthquake. SEOC is coordinating with Alaska Department of Health and Social Services to coordinate to evacuate patients out of the affected areas.

At about 4:00 p.m. Alaska Daylight Time, North Pole crews find several 12-inch water mains (pipes) broken/cracked underground. There are also reports from citizens of North Pole coming into North Pole City Hall that several streets have large puddles. At 5:15 p.m., the fire department is dispatched for a motor vehicle crash involving two vehicles on Fifth Avenue. As police and EMS arrive, they find the intersection of Fifth Avenue and Elf Boulevard is covered with 8 inches of water. There is a Sport Utility Vehicle and a sedan with their front ends down in what appears to be a hole. Both vehicles have water up to the drivers' doors. Firefighters waded through the water and remove the occupants of both vehicles.

A North Pole water plant operator reports all five of the city water pumps are running and are starting to cavitate. They cannot keep up with the water discharge. At 6:30 p.m. Alaska Daylight Time, one of the pumps starts to overheat and is shut down. At about midnight, there is a catastrophic failure of three more pumps. One of the pumps explodes, seriously injuring the plant operator and two public works employees. At this point no water is available in the city for domestic use or firefighting operations.

At 8:00 p.m. Alaska Daylight Time, the State Emergency Operations Center requests Urban Search and Rescue support from the Fairbanks North Star Borough Emergency Operations Center.

4.7.1.5 *Friday, March 28, 2014*

At 2:00 a.m. Alaska Daylight Time, the North Pole Public Works Director and Fire Chief are called and advised of the outage. The mayor is notified, and an emergency meeting of Fire and Public Works is set for 3:00 a.m. Alaska Daylight Time to establish situational awareness/common operating picture at the Emergency Operations Center.

At 4:00 a.m. Alaska Daylight Time, the Fairbanks Emergency Operations Center disseminates information regarding the earthquake in Anchorage. Situational awareness/ common operating picture information indicates an extensive amount of resources from the interior will be required to support disaster operations efforts in Anchorage. This movement of resources will affect the daily operations of all areas.

At about 6:00 a.m. Alaska Daylight Time, North Pole residents start calling the Police and Fire Departments complaining about no water.

At 7:00 a.m. Alaska Daylight Time, Interior Fire Departments led by Fairbanks Fire Department assemble available Urban Search and Rescue resources at the Regional Fire Training Center in Fairbanks to form a strike team to deploy to Anchorage. There also happens to be a Chemical Support Team Guard Unit in Fairbanks at the Armory. This unit receives notification through their communication channels that Urban Search and Rescue resources are needed. They gather with local responders at the Fire Training Center and become part of the Urban Search and Rescue strike team. Alaska State Troopers contact the Emergency Operations Center and advise that a local organization of Search and Rescue dogs, PAWS, are available and willing to respond with the strike team. Members of PAWS also respond to the Fire Training Center to check in for the assignment.

At 7:30 a.m. Alaska Daylight Time, the Fairbanks Emergency Operations Center receives a request from State Emergency Operations Center that a Hazardous Material tech group also respond with the Urban Search and Rescue strike team because there are numerous collapsed structures and derailed train cars leaking Hazardous Material of an undetermined origin. The train manifest must be checked to determine type and amount. Quick action should limit ground contamination.

At 7:45 a.m. Alaska Daylight Time, the Fairbanks Emergency Operations Center contacts the local Hazardous Material response team and requests assistance. Members of the 103rd Civil Support Team are also in town for quarterly training and offer assistance in response. Both the Hazardous Material response team and 103rd Civil Support Team report to the Fire Training Center for check in and response.

At 8:00 a.m. Alaska Daylight Time, the Urban Search and Rescue strike team and Hazardous Material response team have assembled and are ready to depart for Anchorage. (The strike team will simulate the trip to Anchorage. They will respond as a group out to Ft. Wainwright training grounds to conduct a Urban Search and Rescue exercise on the rubble pile. (This same event will also take place on March 29-30 for purposes of training multiple crews.)

At 8:30 a.m. Alaska Daylight Time, the North Pole Mayor makes a public statement to the press regarding the public works situation in North Pole.

At 9:00 a.m. Alaska Daylight Time, North Pole schools are calling North Pole City Hall about no water. City officials determine that no potable water is available; the decision is made to close the schools.

North Pole Police are called to local stores because of a sudden rush to purchase bottle water. This rush has caused tempers to flare and small arguments and scuffles are occurring. North Pole Police resources are stretched thin.

North Pole Police are also receiving reports from owners of service stations that they are running out of fuel and customers are becoming irate.

4.7.1.6 *Saturday, March 29, 2014*

Irate people are at North Pole City Hall/Police Department, demanding water. The city clerk is worried that the crowd will harm her. North Pole City Emergency Operations Center security is at risk. Doyon Security at the two refineries is reporting several breeches in the security fences where people have tried to gain access for fuel.

At 12:00 p.m. Alaska Daylight Time, the Emergency Operations Center activates the City Security Master Plan. Alaska State Troopers are unable to assist with security as their resources were deployed to the valley. The city requests U.S. Air Force Security Forces to augment the North Pole Police Department to provide security for city facilities and refineries.

North Pole Public Works has determined there is no way to restore the water without needed parts. The Public Works Director meets with Emergency Operations Center staff and, at 5:00 p.m. Alaska Daylight Time, the North Pole Emergency Operations Center sends a request to the Fairbanks Emergency Operations Center for the water purification trailer. This is required to produce clean drinking water for their local residents.

4.7.1.7 Sunday, March 30, 2014

Fairbanks Emergency Operations Center coordinates with City Public Works and Fairbanks Memorial Hospital to deploy the water purification unit to North Pole. At about 8:00 a.m. Alaska Daylight Time, the water purification unit departs the city warm storage facility enroute to North Pole Public Works.

The water purification trailer arrives in North Pole at about 9:00 a.m. Alaska Daylight Time.

At 10:00 a.m. Alaska Daylight Time, the North Pole Public Information Officer makes a public statement to the press informing residents that fresh water will be available to the public starting at 11:00 a.m. Alaska Daylight Time at North Pole Plaza.

At 11:00 a.m. Alaska Daylight Time, North Pole Public Works establishes a point of distribution at North Pole Plaza to distribute water to residents.

At 12:00 p.m. Alaska Daylight Time, Eielson Air Force Base Security Forces depart base enroute to North Pole to help secure critical infrastructure.

At 1:30 p.m. Alaska Daylight Time, security forces secure a perimeter around refineries and Santa Claus House.

At 4:00 p.m. Alaska Daylight Time, repair parts arrive for the North Pole Water and Sewer Plant.

At 6:00 p.m. Alaska Daylight Time, the North Pole Water and Sewer plant is back online.

4.8 Department of Defense – Ardent Sentry**4.8.1 Service Directed Action**

Crisis Action Planning by Navy and Marine Corps Forces, North, will result in a service directed deployment of the 3rd Fleet Marine Air/Ground Task Force, Amphibious Ready Group Light Package. This deployment will be based on expected need, with anticipated arrival 152 hours/6.5 days from notification, depending on the location of capability at notification.

While the capabilities listed below represent a generic Amphibious Ready Group response package, the configuration is expected to be tailored to the event.

Generic Light Response Capabilities:

- Command and Control (Combat Element)
- Liaison with Civil Authorities
- Assault Support (Air Combat Element)
- Helicopter Support Team (Logistics Combat Element)
- Aid Distribution (Air Combat Element/ Logistics Combat Element)
- Labor/Security (Ground Combat Element)
- Combat Camera (Combat Element)

Generic Light Response Tasks:

- Provide initial assessments
- Provide Liaison Officers
- Limited distribution of aid via aviation
- Class One and Class Eight

- Conduct assault support
- Casualty Evacuation
- Aerial Reconnaissance

Service Directed Terms of Reference:

Helicopter Support Team—A task organization formed and equipped for employment in a landing zone to facilitate the landing and movement of helicopter-borne troops, equipment, and supplies, and to evacuate selected casualties and enemy prisoners of war; includes support for all external lifts by helicopter. Source: Joint Publication 3-50

Assault Support—The use of aircraft to provide tactical mobility and logistic support for the Marine Air/Ground Task Force, the movement of high priority cargo and personnel within the immediate area of operations, in-flight refueling, and the evacuation of personnel and cargo. The term, heliborne mobility for personnel and logistics, is a more benign descriptor for use in Defense Support for Civil Authorities contexts. Source: Marine Corps Reference Publication 5-12C Marine Corps Supplement to Department of Defense Dictionary

Casualty Evacuation—The movement of sick, wounded, or injured. It begins at the point of injury or the onset of disease. It includes movement both to and between medical treatment facilities. All units have an evacuation capability. Any vehicle may be used to evacuate casualties. If a medical vehicle is not used, it should be replaced with one at the first opportunity. Similarly, aeromedical evacuation should replace surface evacuation at the first opportunity. Casualty Evacuation should always be differentiated from Search and Rescue as they involve differing capabilities. Source: Marine Corps Reference Publication 5-12C Marine Corps Supplement to Department of Defense Dictionary.

4.8.2 U. S. Pacific Command

The U.S. Pacific Command is not participating in Ardent Sentry/Arctic Edge and/or the Capstone Exercise. U.S. Pacific Command will provide support via a small response cell. The response cell is expected to give operational control of Alaskan Command forces to U.S. Northern Command; this includes but is not limited to Joint Task Force-Alaska and other land-based Title 10 assets.

While normal request and reporting procedures dictate these actions go through U.S. Army Pacific or Air Force Higher Headquarters, the Pacific Command Response Cell will be the responding agency for Ardent Sentry 2014 and Arctic Edge 2014.

Additionally, Tactical Command of a West Coast Maritime Command Element is expected to be given to U.S. Navy North through the appropriate U.S. Northern Command coordination and in accordance with Chairmen of the Joint Chiefs of Staff and Pacific Command Defense Support to Civilian Authority Execute Orders. Other Pacific Fleet assets may be included based in Defense Support to Civilian Authority A-Float objectives in this exercise. These will be managed by the Pacific Command Response Cell. Administrative Control will be managed through the Pacific Command Response Cell unless otherwise directed and/or coordinated. Exercise casualty and personnel reporting by Title 10 assets in Alaska will also be to/through the Pacific Command Response Cell.

4.8.3 Aerospace Operations

North American Aerospace Defense Command will conduct Operation Noble Eagle to exercise reduced capability in support of the Alaska earthquake event. The integration of Civil Air Patrol in Field Training Exercise missions will require coordination of airspace management, SAR operations, and exercise the overlap of Title 10 and Title 32 air mobility assets. With the exception of the live fly Field Training Exercise Operation Noble Eagle mission in Northern Oregon that will exercise Operation Noble Eagle low-altitude and/or over wind farms operations, all aerospace events are in support of the Alaska earthquake scenario.

4.8.3.1 Aerospace Venues

Below are the twelve aerospace venues with expected blue player action/reaction included: Alaskan North American Aerospace Defense Command Region is requesting back-fill for mission from Canadian North American Aerospace Defense Command Region, Alaskan North American Aerospace Defense Command Region Runway Inspection Event, Alaskan North American Aerospace Defense Command Region Aircraft Inspection Event, and RADAR link outage. As stated prior, the Operation Noble Eagle event in Northern Oregon is not linked to the Alaska earthquake event.

1. North American Aerospace Defense Command Operation Noble Eagle (Master Scenario Events List #160700): Command Post Exercise—Operation Noble Eagle event (March 27, 3:00 p.m.-9:00 p.m. Zulu Time). Concept of Operation Plan 3310-12. This event will be a pre-earthquake North American Aerospace Defense Command Operation Noble Eagle event. Fencing Air 203 is a Boeing 777 traveling from Tokyo, Japan, to Seattle, Washington. Aircraft will enter the Air Defense Indication Zone without a code. Aircraft has suffered an electrical malfunction following number 2 engine failure. Aircraft will respond to head-butt or flares; overall end game will result in an escort to land at Fairbanks International Airport, due to massive earthquake near Anchorage while this event is ongoing.
2. North American Aerospace Defense Command Operation Noble Eagle Limited Capability (Master Scenario Exercise List #160701): Command Post Exercise—After the earthquake, Fencing Air 203 is requiring to be diverted to Whitehorse, Yukon, and Alaskan North American Aerospace Defense Command Region will possibly require support from Canadian North American Aerospace Defense Command Region due to capabilities being affected by the earthquake. Concept of Operation Plan 3310-12.
 - a. Fencing Air 203 will need to land in Whitehorse, Yukon.
 - b. Blue player action, where Alaskan North American Aerospace Defense Command Region Air Operations Center will need to request Canadian North American Aerospace Defense Command North American Aerospace Defense Command Region to support Operation Noble Eagle/Northern Sovereignty Operations on North Slope. The Request for Forces process will be simulated with the white cell Alaskan North American



Figure 3. Aerospace Operations

Aerospace Defense Command Region replicating Canadian North American Aerospace Defense Command Region that are not participating.

3. North American Aerospace Defense Command Operation Noble Eagle Low-Altitude Radar Surveillance (Master Scenario Events List #160361): Ardent Sentry Felix Hawk 2014 Field Training Exercise (pending funding)—One separate Operation Noble Eagle event in Northern Oregon with sparse low-altitude radar surveillance and/or wind turbine clutter, live fly on April 1 (Western Air Defense Sector).
 - a. Field Training Exercise-Phase 1: Data collection ("flight test") phase where all participating target aircraft will make repeated runs over the wind turbine area of interest to collect forensic data in areas with sparse low-altitude radar surveillance and/or wind turbine clutter on Radar-Wind Turbine Interference in the Western Air Defense Sector Area of Responsibility.
 - b. Field Training Exercise/Command Post Exercise-Phase 2: The Operation Noble Eagle Tactics, Plans, and Procedures (execution) phase where the target aircraft will commence their "target run" and North American Aerospace Defense Command will respond appropriately, exercising North American Aerospace Defense Command and Control and conducting Operation Noble Eagle Tactics, Techniques, and Procedures during a Defense Support to Civilian Authority-focused exercise. Concept of Operation Plan 3310-12.
 - i. Call Sign: FELIX HAWK To Be Determined
 - ii. Aircraft Type: Both Baron and Civil Air Patrol (Cessna 182)
 - iii. Mission Scenarios: This Field Training Exercise is associated with Ardent Sentry 2014, but it is a stand-alone North American Aerospace Defense Command-focused event. The Field Training Exercise is being planned and coordinated primarily by Western Air Defense Sector such that it will look like a FELIX HAWK to North American Aerospace Defense Command entities. The scenario is a pop-up General Aviation threat to critical infrastructure in the Pacific Northwest.
4. Defense Support to Civilian Authority– Civil Air Patrol: Exercise Civil Air Patrol in a disaster operations situation. Civil Air Patrol National Operations Center to put out a warning order to the Alaska wing and the western states to prepare for incoming support from the State Emergency Operations Center and Federal Emergency Management Agency. Alaska wing will open a mission base and move aircraft into to position to support Defense Support to Civilian Authority requests. In real-world events the first request would be from the states and depending on the size of the disaster, Federal Emergency Management Agency mission assistance would follow. U.S. Air Force Auxiliary should be able to start imaging targets the next day. Over the next month, Civil Air Patrol will work with the state and Federal Emergency Management Agency on the imagery delivery process and targets. Domestic imagery legal review issues to be addressed by 611st Air Operations Center. Use Geospatial Information Interoperability Exploitation-Portable to download full motion video (if required) to United States Geological Survey Hazard Data Distribution System.

- a. Field Training Exercise: Conduct Incident Awareness and Assessment (still images)
 - b. Field Training Exercise: Conduct Full Motion Video (C-182 Full Motion Video Geospatial Information Interoperability Exploitation-Portable
 - c. /Rover)
 - d. Field Training Exercise: Determine location and standup Civil Air Patrol Area Command
 - e. Command Post Exercise: Requests and notional movement of resources from supporting wings
5. Defense Support to Civilian Authority–Search and Rescue: In the air venue, United States Northern Command will conduct a catastrophic incident event in Alaska, resulting in consequence management and support to civil authorities. The 9.2-magnitude earthquake will trigger requests for assistance from the State of Alaska. Alaska has a finite amount of Search and Rescue assets within the state. All other assets are in U.S. Northern Command proper Continental United States or Pacific Command Outside Continental United States. In this unique situation/environment, the State of Alaska will rely heavily on Title 10 assets before Emergency Management Assistance Compacts can arrive, contradictory to what is done in the lower 48 states. The disaster operations for rescue will be a mix of Title 10, Title 32, and other local, state, tribal, and federal agencies. An objective is to work with the State of Alaska to establish an automatic trigger for a Department of Defense response based on the severity (Richter) of the earthquake. (In the Cascadia Subduction Zone and the New Madrid Seismic Zone, both have automatic triggers for a Department of Defense response of 8.0). Once the Mission Assistance or vocal order to support is received, the U.S. Northern Command Joint Personnel Recovery Center will move Search and Rescue Liaison Officers to Alaska to support the stated Search and Rescue Supported Commander Northern Command Future Operations Center has to create/publish the Frag Order designating the Joint Task Force-Alaska Coordination Center as the Search and Rescue Supported Commander for the Joint Operations Area (Alaska), currently it is the Air Forces Northern Coordination Center for U.S. Northern Command. Another objective is to work the movement to alternate airports (Fairbanks International Airport or others) and ground transport to the affected area during these austere winter conditions. This will trigger an augmentation requirement for the Joint Personnel Recovery Center at Tyndall Air Force Base for Continental United States coverage and if an isolating event occurs (personnel recovery). The Joint Personnel Recovery Center Liaison Officer will conduct a hasty mission analysis to illuminate and fill shortfalls in the Search and Rescue enterprise. In conjunction with the State of Alaska, the United States Northern Command Joint Personnel Recovery Center will refine Prescript Mission Assignments, shape the Request for Forces for the Defense Support to Civilian Authority Execute Order Categories 2-4 Search and Rescue forces, and airlift for the Federal Emergency Management Agency Urban Search and Rescue teams. Joint Task Force –Alaska does in Alaska, what U.S. Army North does in the lower 48 states with less than a quarter of the manpower. The Search and Rescue window of opportunity to save lives is 1 to 72 hours, some instances (i.e., prudent measures such as blankets, food, water, etc. stored for



Figure 4. Civil Air Patrol

emergency events) may extend this to 96 hours. The possibility exists that traditional Search and Rescue will transition into recovery support.

a. Actual Events:

- i. United States Northern Command designate the Joint Task Force – Alaska Coordination Center as the Search and Rescue-supported commander
- ii. Joint Personnel Recovery Center preposition Search and Rescue Liaison Officer in Alaska and Washington Regional Response Coordination Center prior to Start of Exercise to ensure safe and timely travel and support of the Alaska Regional Response Coordination Center
- iii. Augmentation to the Joint Personnel Recovery Center at Tyndall Air Force Base arrive prior to Start of Exercise and will be cycled in as realistic as possible
- iv. Refine the Pre-Scripted Mission Assignments Alaska has for Search and Rescue support
- v. Refine the Request for Forces for Defense Support to Civilian Authority Executive Order Categories 2-4 Search and Rescue forces



Figure 5. Search and Rescue

- b. Command Post Exercise-Alaska Title 10 response (+), Federal Emergency Management Agency Urban Search and Rescue Federal Emergency Management Agency Region USAR Teams (+) 17x notional teams
- c. Field Training Exercise - Alaska Title 10 response (-), unknown which units will participate, United States Northern Command Joint Personnel Recovery Center Liaison Officers to Alaska and Washington (5) , Joint Personnel Recovery Center Augmentation to Tyndall Air Force Base (2 to 4), Federal Emergency Management Agency Urban Search and Rescue Teams (-) 1x team from Washington, Personnel Recovery Planning Team at Tyndall Air Force Base (2)

6. Defense Support to Civilian Authority /Airspace Coordination Federal Aviation Administration: Receive and react to Federal Aviation Administration navigation, airfield, and sensor system downtimes post-earthquake. Airspace control in response to earthquake, with the overwhelming requirement to coordinate air movement and impact to airlift capability, 601st Air

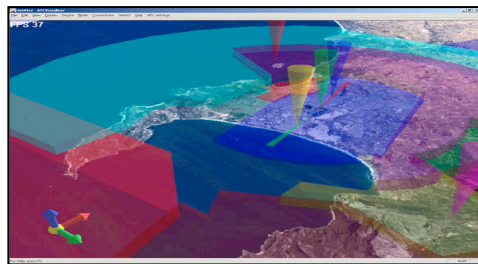


Figure 6. Airspace Coordination

Operations Center will require additional support to coordinate where and when the air mobility piece can move the Alaska North American Aerospace Defense Command Region. The regional air mobility coordination center will be exercised in limited capability at 601st Air Operations Center have Federal Aviation Administration agency imbedded to airspace management at the 611th Air Operations Center.

7. Defense Support to Civilian Authority/ Air Mobility: This will require the 611th Air Operations Center to work with 601st Air Operations Center to develop needed/missing Defense Support to Civilian Authority memorandums of understanding/agreement. Blue player action. Joint Task Force-Alaska request to Joint Force Commander (North American Aerospace Defense Command-Northern Command) for Regional Air Movement Coordination Center. Air Mobility Command will provide Liaison Officer an Federal Aviation Administration Subject Matter Expert and 601st will send Subject Matter Expert to 611th Air Operations Center. The Regional Air Movement Coordination Center will partially stand-up at 601st Air Operations Center to support Turbo Challenge Exercise and Ultimate Caduceus Exercise. Exercise the overlap of Title 10/Title 32 air mobility forces, partially exercise Regional Air Movement Coordination Center operations for Defense Support to Civilian Authority, and develop expertise at 611th Air Operations Center.



Figure 7. Air Mobility

- a. Airlift requirements to manage airflow with the Regional Air Movement Coordination Center
- b. Mission Assignment for all airlift movements driven by Alaska requirements
- c. Coordinate airflow movement based on priorities requirements

8. Defense Support to Civilian Authority/ SPACE CAPABILITIES: In response to the Alaska earthquake, the Air Forces North is making an Request for Forces for Army Computer Emergency Response Team support at Tyndall Air Force Base.

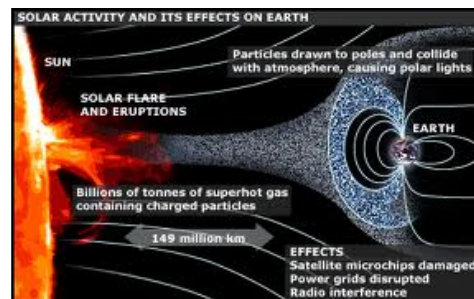


Figure 8. Space Environment

- a. Field Training Exercise: Deploy Army Computer Emergency Response Team to Air Forces Northern and task it to meet Air Forces Northern training objectives
- b. Provide Space Support to the 601st Air Operations Center, 611th Air Operations Center , and the Space Coordinating Authority delegated to the Joint Forces Air Component Commander Air Forces Northern

9. Alaskan North American Aerospace Defense Command Region Request for Information from Canadian North American Aerospace Command Region (Master Scenario Events List #160701):

(U) POC: Peter F. Meacham, Alaska North American Aerospace Defense Command Region, DSN: (317) 552-5877, peter.meacham@elmendorf.af.mil



UNCLASSIFIED//TRUSTED AGENT ONLY

Proposed Air Mobility C2 Construct

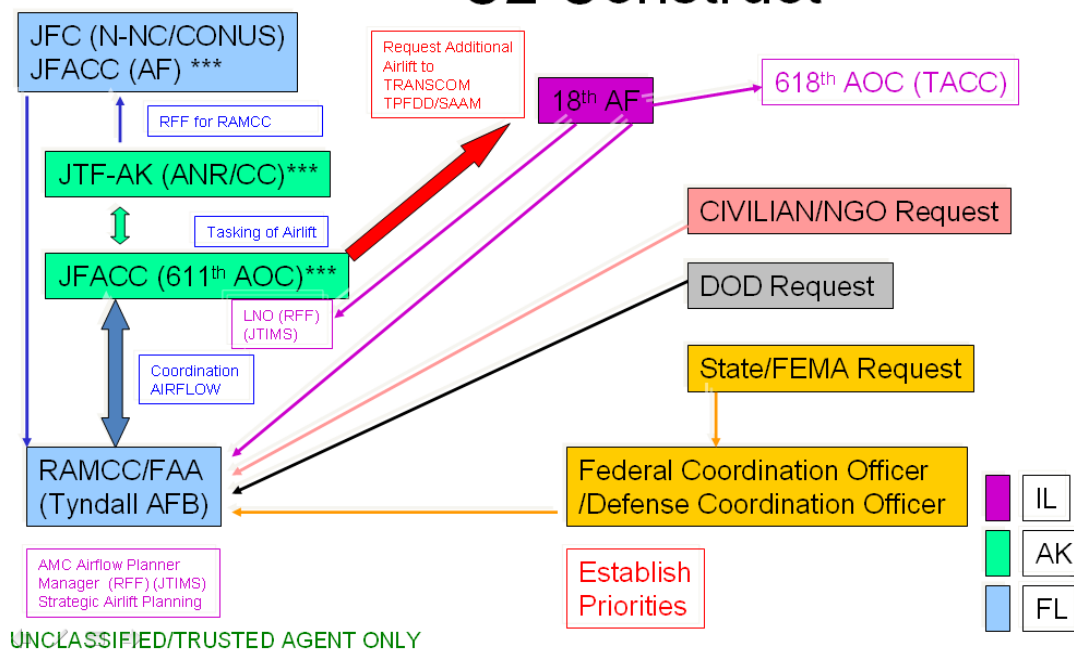


Figure 9. Proposed Air Mobility Command and Control Construct



UNCLASSIFIED//TRUSTED AGENT ONLY

Air Control Structure

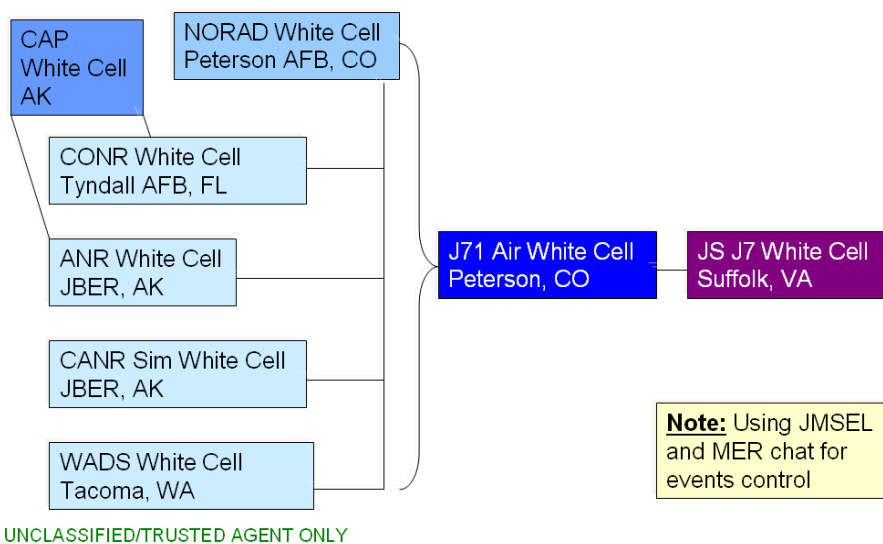


Figure 10. Air Control Structure

(U) Vignette Objective:

Primary Theme: Alaskan Northern American Aerospace Command Region requesting back-fill for mission from Canadian North American Aerospace Command Region

Storyline/Thread: Post-earthquake

Primary Audience/Joint Mission Essential Task/Training Objective: Alaskan North American Aerospace Command Region /OP 6.1–Provide Operational Air, Space, and Missile Defense/Conduct Tactical Warning and Attack Assessment in Joint Operations Area

(U) Vignette Description:

Post-earthquake the region might develop a course of action that requires Canadian North American Aerospace Defense Command Region to deploy CF-18 to cover the North American Aerospace Defense Command mission. (From Canadian North American Aerospace Defense Command Region Subject Matter Experts the CF-18s would come from 4 Wing, 409 Squadron in Cold Lake, Alberta, and the C-130 is a tanker, it would come from 17 Wing, 435 Squadron in Winnipeg, Manitoba. Time to deploy would be 24-28 hours after the request is made.

(U) Artificialities:

White cell will simulate Canadian North American Aerospace Defense Command Region.

(U) How Event Starts:

Post-earthquake–If the Alaskan North American Aerospace Defense Command Region Coordination Center requests back fill from Canadian North American Aerospace Defense Command Region to assist with North American Aerospace Defense Command mission.

(U) How Event Ends:

Estimate 30 hours from request till first CF-18 can land, and 2 hours after that assume Alaskan North American Aerospace Defense Command Region mission.

(U) Who Participates in Event:

176th Automatic Dependent Surveillance, White Cell, and Alaskan North American Aerospace Defense Command Region N2C2.

(U) Intelligence Support:

None required

10. Alaskan North American Aerospace Defense Command Region Runway Inspection Event (MSEL #160704 and #160704-01):

(U) POC: Peter F. Meacham, Alaska North American Aerospace Defense Command Region, DSN: (317) 552-5877, peter.meacham@elmendorf.af.mil

(U) Vignette Objective:

Primary Theme: Alaskan North American Aerospace Defense Command Region Runway Inspection Event

Storyline/Thread: Post-earthquake

Primary Audience/Joint Mission Essential Task/Training Objective: Alaskan North American Aerospace Defense Command Region/OP 6.1–Provide Operational Air, Space, and Missile Defense/Conduct Tactical Warning and Attack Assessment in Joint Operations Area

(U) Vignette Description:

Post-earthquake the region will begin advised by the Elmendorf Command Center that both runways are currently closed pending an inspection. (From airfield Subject Matter Expert, the geological build of Elmendorf would lend itself to no damage post-earthquake; however, it will take 8 hours to do a foreign object damage walk to make sure there is no structural damage/cracks/buckling etc.).

(U) Artificialities:

White cell will simulate Airfield Management Cell/Elmendorf Command Center. Also the real-time requests could lead to extending the timing past 15 minutes.

(U) How Event Starts:

Post-earthquake—estimate 15minutes from last aftershock. Alaska Exercise Director will report runway status as closed pending inspection.

(U) How Event Ends:

Estimate 4 hours from last aftershock, approximately 8:00 p.m. Z, Alaska Exercise Director will report Joint Base Elmendorf-Richardson short runway and Joint Base Elmendorf-Richardson long runway to be serviceable.

(U) Who Participates in Event:

176th Automatic Dependent Surveillance, White Cell, and Alaskan North American Aerospace Defense Command Region.

(U) Intelligence Support:

None required

11. Alaskan North American Aerospace Defense Command Region Aircraft Inspection Event (MSEL #160703):

(U) POC: Peter F. Meacham, Alaska North American Aerospace Defense Command

Region, DSN: (317) 552-5877, peter.meacham@elmendorf.af.mil

(U) Vignette Objective:

Primary Theme: Alaskan North American Aerospace Defense Command Region Aircraft Inspection Event

Storyline/Thread: Post-earthquake

Primary Audience/ Joint Mission Essential Task/Training Objective: Alaskan North American Aerospace Defense Command Region/OP 6.1–Provide Operational Air, Space, and Missile Defense/Conduct Tactical Warning and Attack Assessment in Joint Operations Area

(U) Vignette Description:

Post-earthquake the region will begin investigating the statuses of their assets. The results will be two airborne F-22s so they will not be physically affected by the earthquake; however, the E-3 that was in the hangers dome will be damaged due to debris falling on it. The spare F-22 will not be damaged.

(U) Artificialities:

White cell will simulate Maintenance Operation Cell/Combat Operation Center/Elmendorf Command Center. Also the real-time requests could lead to extending the timing past 15 minutes.

(U) How Event Starts:

Post-earthquake—estimate 15minutes from last aftershock. Alaska Exercise Director will report aircraft statuses.

(U) How Event Ends:

Sources (White Cell) will report this event has happened and there is no further action required.

(U) Who Participates in Event:

176th Air Defense Squadron, White Cell, and Alaskan North American Aerospace Defense Command Region

(U) Intelligence Support:

None required

12. RADAR Link Outage (Master Scenario Events List #160702):

(U) POC: Peter F. Meacham, Alaska North American Aerospace Defense Command Region, DSN: (317) 552-5877, peter.meacham@elmendorf.af.mil

(U) Vignette Objective:

Primary Theme: RADAR link outage

Storyline/Thread: Post-earthquake—Several of the North Warning Sites will go down

Primary Audience/ Joint Mission Essential Task /Training Objective: Alaska North American Aerospace Defense Command Region /OP 6.1—Provide Operational Air, Space, and Missile Defense/Conduct Tactical Warning and Attack Assessment in Joint Operations Area

(U) Vignette Description:

Several of the North Warning Sites (radar and radio) will be taken down because of the misalignment of the MC3 satellite during the earthquake. It will go down for approximately 4 hours (Note: there is a second dish that is not active, but could be brought on line within minutes). We will not allow that to happen due to the need for an inspection on both satellites.

(U) Artificialities:

White cell/Alaska Exercise Director will simulate Alaska Communications System maintenance reporting of the equipment downtime

(U) How Event Starts:

Post-earthquake—The region will lose the feed from seven of the north warning site radars. After investigation, they will all be the radars tied to the satellite feed into the MC3. ARTEC (White Cell) will notify maintenance via phone line of the misalignment. Estimated time to return to operation is 4 hours, but a realistic time is about 2 hours.

(U) How Event Ends:

ARTEC will report alignment complete, Ops will declare sites operational but under observation

(U) Who Participates in Event:

176th Automatic Dependent Surveillance, White Cell, and Alaska North American Aerospace Defense Command Region

(U) Intelligence Support:

None required

4.8.4 Air Force Space Command

Air Force Space Command will conduct mission-specific operations using both Non-Classified Internet Protocol Router and Secret Internet Protocol Router Joint Master Scenario Events List injects. A simulated Unidentified Flying Object 6 spacecraft anomaly will occur and require analysis to determine the effects if it is lost and possible courses of action. The event will be resolved without action required or executed. No impact to North American Aerospace Defense Command Northern Command or other Ardent Sentry participants is expected.

4.8.5 Joint Task Force-Alaska

In the first 48-hours post-earthquake, there is no communication to/from numerous small communities in the affected earthquake areas. The Alaska State Emergency Operations Center is expected to request immediate (within 48-hours) Search and Recovery support under Chairman of the Joint Chief of Staff 2013 Defense Support to Civilian Authority

Execute Order, paragraphs 3.I.7 (and subsequent sub paragraphs) and 4.B.4 (and subsequent sub paragraphs) or under the North American Search and Recovery Plan, which defines standards for Search and Rescue operations. The communities listed below are expected to be included in this request:

Southeast Alaska: Edna Bay, Token, Klawock, Craig, Hydaburg, Elfin Cove, Pelican, Port Alexander, Port Walter, Port Protection, Point Baker, and Yakutat

Southcentral Alaska: Chenega Bay, Whittier, Seldovia, Port Graham, Tyonek, Chitina, and Tazlina

Kodiak Borough, Alaska: Port Lions, Old Harbor, Akhiok, and Karluk

Alaska Peninsula and Aleutian Islands: Chignik, Egegik, Naknek, Togiak, Sand Point, King Cove, Akutan, Nikolski, Adak, and Atka

Joint Task Force-Alaska Joint Master Scenario Events List Inject: Eielson Air Force Base Tower will report civilian aircraft CONAIR 767 is requesting clearance to divert to Eielson due to low fuel. A request to remain at Eielson then depart 24 hours later will also be injected.

Alaska Joint Master Scenario Events List Inject: Eielson Air Force Base Tower will State-wide Department of Defense Affiliated Disaster Accountability Training Objective:

- Training Objective: Department of Defense affiliated disaster accountability using service accountability systems and Joint Task Force-Alaska J1 having ability to provide service accountability status to Joint Task Force-Alaska Commander and North American Aerospace Defense Command-Northern Command Commander.
- Joint Staff Director Memo to services requesting them to participate in PR 14 and conduct disaster accountability in Alaska.
- Joint Staff J1 Master Scenario Events List inject directs, "Notice to Account," of all Department of Defense affiliated in Alaska
- Service Personnel Accountability and Assessment System Program Managers and Pacific Air Forces Air Force Personnel Accountability and Assessment System Manager on board to support Joint Task Force-Alaska objective; Events built in Army Disaster Personnel Accountability and Assessment System, Air Force Personnel Accountability and Assessment System, Navy Family Accountability and Assessment System. U.S. Marine Corps Marine On Line participation unknown at this time (few U.S. Marine Corps in Alaska).
- Alaska Commander and North American Aerospace Defense Command-Northern J1 has access to view each Service Personnel Accountability and Assessment System accountability status. They have to coordinate with the units not playing to account for themselves and their dependents to get statewide accountability.
- Joint Task Force-Alaska J1 will report services' statuses to Joint Task Force-Alaska Commander for his situation awareness and will keep North American Aerospace Defense Command-Northern Command J1 informed as requested.

North American Aerospace Defense Command-Northern Command J1 casualty reporting of Northern Command personnel in Alaska disaster area Training Objective:

- TO: North American Aerospace Defense Command-Northern Command J1 ability to accurately report casualties and deaths on Joint Personnel Status System
- Northern Command personnel are in Alaska when the earthquake occurs.
- Department of Defense Instruction 3001.02 states disaster accountability occurs by all Department of Defense components, which include Combatant Commands immediately upon occurrence.
- Northern Command Chief of Staff would direct the North American Aerospace Defense Command-Northern Command staff to account for their personnel to include those in Alaska.
- Command Chief of Staff would direct the North American Aerospace Defense Command J74 conducts accountability and is unable to account for their team in Alaska (U. S. Army LTC, U. S. Air Force female MAJ, U.S. Marine Corps Capt, Department of Air Force Civilian, Urban Search and Rescue Active Guard and Reserve Title 10 enlisted, Department of Defense Department of Defense contractor unaccounted).
- Northern Command J1 will not be able to get a hold of J1 female Department of Air Force Civilian.

- Alaskan North American Aerospace Defense Command Region and Joint Task Force-Alaska would execute accountability and report to Northern Command.
- Day 2 J74 team members found with level 1 injuries (U. S. Army LTC, U. S. Marine Corps Capt, and U. S. Army female MAJ). Rest of team still remains unaccounted for.
- Day 3 J74 team members found with level 2 crush injuries to extremities: Department of Air Force Civilian and Department of Defense contractor. U. S. Army Active Guard Reserve Title 10 enlisted found deceased. Service Casualty Assistance Officer has made contact with Next of Kin. Northern Command J1 female Department of Air Force Civilian still unaccounted for.

4.8.6 Department of Defense Communication Slides

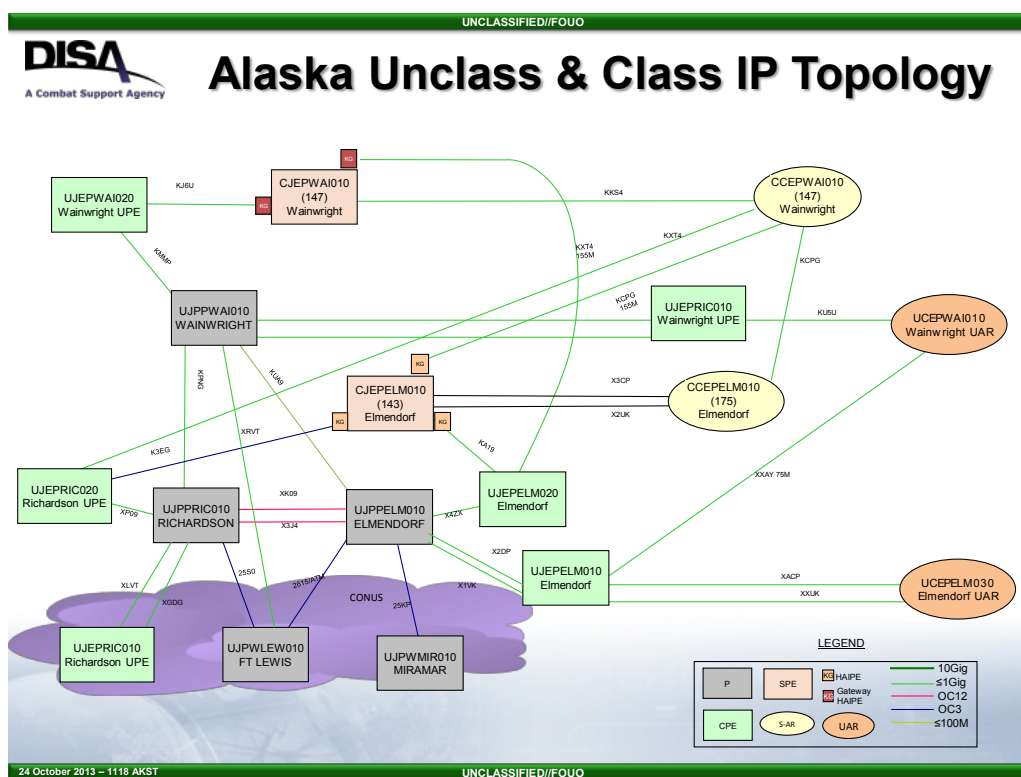


Figure 11. Alaska Unclassified and Classified IP Topology

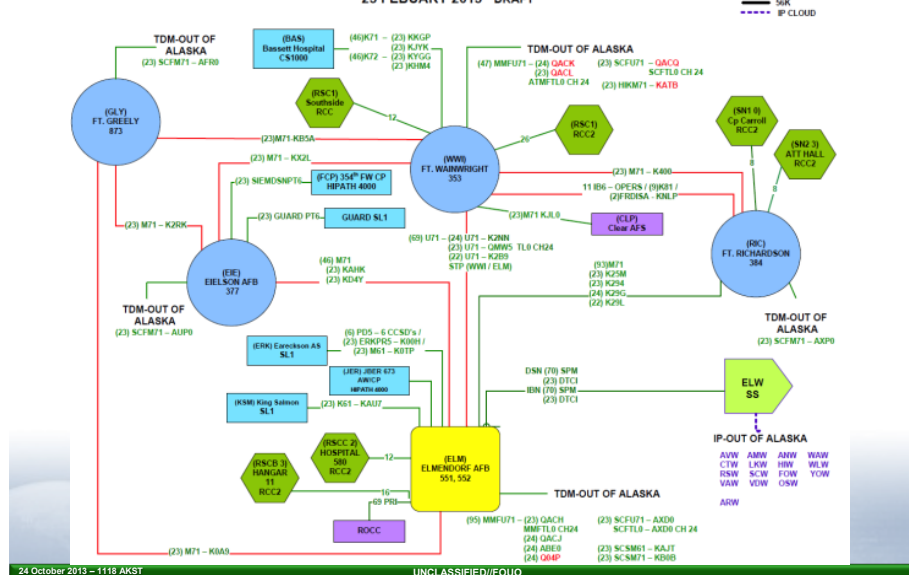
The diagram illustrates the U.S. Army's network architecture, showing connections between the Army Network, DISN Cloud, and various external networks. The Army Network is a central hub, connected to the DISN Cloud and external networks. The DISN Cloud is a cloud-based network, and the external networks include MHS, Eielson AFCONC, DSS Eagle River, and others. The diagram also includes a legend for node types and line types.

Legend:

- Node Types:**
 - IPT-PE:** Internet Protocol Terminal Equipment
 - P:** Private Network
 - U-AR:** User Agent Router
 - IAP:** Internet Access Point
 - UPE or CPE:** User Equipment or Customer Premises Equipment
 - CMINT:** Core Mainframe Interface
- Line Types:**
 - Planned:** Dashed line
 - 10GBase:** Solid green line
 - 100GBase:** Solid light green line
 - OC12:** Solid pink line
 - OC3:** Solid red line
 - ≤100M:** Solid yellow line

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4.9 Vigilant Guard Alaska

Vigilant Guard Alaska is an organization-wide full scale exercise involving both Air and Army Guard elements of the Alaska National Guard as well as several regional partners. There are few exceptions that will be allowed for non-participation from Alaska National Guard units. The Alaska National Guard will provide one or more joint task forces with trained command elements to exercise command and control for Defense Support to Civilian Authority missions during Vigilant Guard Alaska. The Alaska National Guard will perform domestic emergency tasks with emphasis on initial response, stability, and recovery efforts to restore critical services, security, distribution systems, and port operations. Task force commanders will conduct daily risk assessments to ensure the safety of all personnel throughout the exercise. The Joint Forces Headquarters –Alaska /Joint Task Force-49 will provide situational awareness to Department of Defense authorities to assist in coordinating federal activities.

The Vigilant Guard Alaska exercise objectives have been compiled into three overarching objectives listed below:

- Exercise Dual Status Command (this is the primary focus area for the Alaska National Guard)
- Demonstrate proficiency of State of Alaska mission tasks (i.e., Madden 9)
- Operate within the National Incident Management System environment

A complete list of the Vigilant Guard Alaska exercise goals is as follows.

- Establish Joint Reception, Staging, Onward Movement, and Integration
- Activate JTF-49 response—employ multiple task forces
- Request/Implement Dual Status Command of Title 10/Title 32 forces in coordination with Alaska Command Alaska Command headquarters (Conduct Command and Control of T10 forces)

Activate a Joint Interagency Task Force with local and regional Chemical, Biological, Radiological, Nuclear, Explosive elements

- Validate Alaska National Guard Operations Plan 3500-13 all hazards and establish/improve a Common Operation Picture
- Exercise Emergency Management Assistance Compact and Pacific Northwest Emergency Management Assistance process
- Establish an Emergency Family Assistance Control Center
- Alaska National Guard participate in public outreach efforts—earthquake awareness

As a state agency, the Alaska National Guard will react to requests for assistance/capabilities from the Alaska State Emergency Operations Center. In the May 2013 State of Alaska Emergency Operations Plan, it is identified that the Department of Military and Veterans Affairs/Alaska National Guard has a “support responsibility” to every Essential Support Function; thus, there should be ample stimulus from the state requesting the Alaska National Guard to fill missions. It is envisioned that for the Vigilant Guard Alaska to achieve its objectives specifically demonstrating proficiency in the Alaskan mission task there will need to be many requests from the state to the Alaska National Guard for capabilities. Some of these

requests will need to happen on March 27 to allow for Alaska National Guard Field Training Exercise play to line up with the Command Post Exercise scenario.

Vigilant Guard Alaska is just one of many linked and/or partnered exercise with Alaska Shield 2014. Some of these linkages include the Joint Task Force/Alaska Arctic Edge 2014, National Exercise Program Capstone Exercise 2014, North American Aerospace Defense Command – Northern Command Ardent Sentry 2014, and U.S. Transportation Command Turbo Challenge and Ultimate Caduceus 2014. The goal of all the linked exercises is to complement/augment each exercise by using the same overarching Alaska Shield 2014 exercise while satisfying all exercise objectives. With all these linkages, simulating external agencies will be at a minimum; this is due to the fact that most local, state, region, federal, Combat Command, etc. are participating. A challenge with this will be on exercise design; that is, the exercise will need to be designed in a manner that will force some decisions to ensure a unit's exercise objectives are met.

4.9.1 Anchorage

Multiple Alaska National Guard units will operate out of and within the city of Anchorage. The Alaska National Guard Joint Forces Headquarters Joint-Staff and Joint Task Force-49 will operate out of its normal day-to-day location on Joint Base Elmendorf-Richardson and will mirror the state hours of play from 8:00 a.m. to 8:00 p.m., daily from March 27 to April 2. A National Guard Bureau Domestic All-Hazards Response Team (eight people) and a Joint Enabling Team (four people) will deploy to support the Alaska National Guard Joint Operations Center, and will also provide staff augmentation. The Washington Homeland Response Force will deploy a 50-person Subject Matter Expert element that will integrate operations with Joint Task Force-49. The Alaska National Guard Medical Detachment will deploy and setup the Alaskan Medical Station at Raven Hall, Alaska State Fairgrounds. The Oregon Chemical, Biological, Radiological, Nuclear, Explosive Enhanced Response Force Package will deploy with 202 people and equipment, and will conduct operations on the rubble pile in Anchorage on March 28-30; augmenting this will be 133 people from the Hawaii Chemical, Biological, Radiological, Nuclear, Explosive Enhanced Response Force Package. Also, the 103rd Alaska Civil Support Team and 72nd Nebraska Civil Support Team will operate on the Anchorage rubble pile. Key tasks that will be conducted are hazardous materials operations at the Anchorage rubble pile (Chemical, Biological, Radiological, Nuclear, Explosive Enhanced Response Force Package, Homeland Response Force, two Civil Support Teams), State Crime Lab (72 Civil Support Team), Joint Operations Center operations, and maintain Common Operating Picture. Movement and replenishment Joint Reception, Staging, Onward Movement, and Integration for units deploying to Alaska will be accomplished on Joint Base Elmendorf-Richardson at the Joint Mobility Complex and at Ted Stevens International Airport.

The Joint Visitors Bureau will be open March 27-April 1, from 8:00 a.m.-5:00 p.m. Alaska Daylight Time. Distinguished visitors are permitted to visit or view selected segments of the exercise, but do not play in the exercise and do not perform any control or data collection functions. Distinguished Visitors will view the exercise from a designated observation area and will be asked to remain within the observation area during the exercise. The Joint Visitors Bureau is a blue player entity and all Distinguished Visitors will be directed to the Joint Visitors Bureau at the Flight Operations Center, Bryant Army Airfield. Currently, the Distinguished Visitor days are scheduled for March 29 (9:00a.m. to 5:00 p.m.) and March 31 (9:00 a.m. to 3:00

p.m.). On March 29, from 9:00 a.m. to 5:00 p.m., events will include the armory operations tour, shaker cottage simulation, capability briefs, lunch, and rubble pile tour. On March 31, from 9:00 a.m.-3:00 p.m., events will include the Joint Field Office operations floor tour, lunch, panel discussion, and Joint Logistics Over the Shore tour.

It is expected that through blue player actions, the Alaska National Guard and Alaska government will request that Dual Status Command be established the afternoon of March 27. Master Scenario Events List #VGAK 011.

The Vigilant Guard Alaska Exercise Control Cell will be located in Anchorage on Joint Base Elmendorf-Richardson. The Exercise Control Cell will consist of exercise control and the simulation cell. ECC will be located in building 10471, room B102, and will be manned 24/7 from 8:00 a.m. on March 27 until 4:00 p.m. on April 2. The simulation cell will mirror the Exercise Control Cell hours of operation and will simulate all Title 32 units for the exercise and any Title 10 units that are “chopped” (Frag Ordered) to the Alaska National Guard Dual Status Command.

There will also be observers monitoring Alaska National Guard activities from the 39th Canadian Brigade and the Mongolian National Emergency Management Agency. Mongolia is an Alaska National Guard partnership nation and they routinely observe each other’s events. In addition the National Guard Bureau Chief has invited the Chief of the Israel Defense Forces to observe the exercise; status at this time is to be determined.

The Vigilant Guard Alaska team will coordinate, develop, and release three 2 to 3 minute video media reports that will focus on the destruction at the outlying communities (will try and replicate the “local news”). These videos will be release on the following dates/times: March 27 at 1:00 p.m. Alaska Daylight Time (Master Scenario Events List #VGAK 013) and March 28 and 29 at 8:00 a.m. Alaska Daylight Time (Master Scenario Events List #VGAK 031 & 42).

4.9.2 Matanuska-Susitna Borough

The 207th Brigade Support Company , platoon from the 297th Military Police Company (-), 1-207th Aviation, Medical Detachment, 208th Construction Management Team, 207th Equipment Support Platoon and 72nd Civil Support Team (Nebraska) will conduct operations in the Matanuska-Susitna area from March 27 to March 30. Alaska National Guard personnel on the ground will provide shelter support, hazardous materials identification and mitigation, Emergency Operations Center augmentation, law enforcement support and security, Alaska Medical Station support, and movement and replenishment and damage assessment. At approximately 12:00 p.m. Alaska Daylight Time on March 27, the 207th Brigade Support Company will transport the Alaska Medical Station from Joint Base Elmendorf-Richardson to Raven Hall on the Alaskan State Fairgrounds; set up of the Alaska Medical Station will be complete by 7:00 a.m. on March 28, with Alaska Medical Station operations going until approximately 2:00 p.m. Alaska Daylight Time on March 29. Tear down with transportation of the Alaska Medical Station back to Joint Base Elmendorf-Richardson will be complete by 7:00 p.m. Alaska Daylight Time on March 30. Also on March 28, the 72nd Civil Support Team will be airlifted from the Bryant Army Airfield to the Matanuska-Susitna Regional Medical Center for a localized hazardous materials incident. There has been discussion regarding the 85th Civil Support Team providing observers and evaluators. (Utah National Guard Point Operations Center Jared Gailey). The borough will also be asking for a National Guard Liaison Officer

(blue player). The borough is also working to ensure there is access for Alaska National Guard forces to get to their assigned site with the road system degradation.

4.9.3 Kenai Peninsula Borough

Elements of B Troop (15 people) and the 1-297th Reconnaissance and Surveillance will deploy to the borough from March 29 to March 30. Key tasks will be to provide communications support, Emergency Operations Center augmentation, and National Incident Management System support.

4.9.4 Valdez

TAC/297th Battlefield Surveillance Brigade(-), 996th Area Support Medical Company , 146th AES, Wisconsin Joint Incident Site Communications Capability , and the 297th Military Police Company will deploy to Valdez and conduct operations from March 28 to March 30. Training will focus on law enforcement support and security, shelter support, movement and replenishment, communications interoperability operations, Emergency Operations Center augmentation/liaison officer, medical station support, and patient movement. Also, an Alaska National Guard C-130 will deploy to Valdez on March 30 to conduct a patient movement exercise (Valdez to Fairbanks). A medical unit (996th Area Support Medical Company from the Arizona National Guard will deploy with 40 people and equipment to support this venue. The Wisconsin National Guard Joint Incident Site Communications Capability will deploy as well and will be able to provide a communications bridge between first responders and other federal, state, and local agencies.

4.9.5 Cordova

B-1-297th Reconnaissance and Surveillance (25 people) and a strike team from the 92nd Nevada Civil Support Team (20 people) with vehicles will deploy on March 27 to Cordova and conduct operations from March 28 to March 29, with redeployment to Anchorage starting on March 30 at approximately 5:30 p.m. Alaska Daylight Time. The Civil Support Team will provide communication support as needed. Approximately 50 Alaska National Guard total (including the 92nd Civil Support Team strike team) will be on the ground during this time frame. Key tasks being conducted are shelter support, point of distribution site security, hazardous materials identification and mitigation, cold weather decontamination, communication support, and Emergency Operations Center augmentation. Billeting will be at the Coast Guard Hangar at MP13. Discussed National Guard forces with Cordova, and they do desire National Guard forces and are going to reword their request for support from a simple tank leak to multiple requirement such as air monitoring, law enforcement support, etc.

4.9.6 Kodiak

A Troop (-) 1-297th Reconnaissance and Surveillance will deploy 15 people and the 101st Indiana Civil Support Team will deploy 12 people to Kodiak for exercise activity taking place on March 29. Key tasks will be hazardous materials subject matter expertise and train-the-trainer operations, communications support, Emergency Operations Center augmentation, and National Incident Management System support. Scenario development is ongoing with Kodiak Emergency Manager, Rome Kamai.

4.9.7 Fairbanks

The 95th California Civil Support Team will deploy 8 people. A 35-person element from the Hawaii Chemical, Biological, Radiological, Nuclear, Explosive Enhanced Response Force Package Search and Extraction, 146th Aeromedical Evacuation Squadron (1XC130), with vehicles and equipment will deploy to (Ft Wainwright rubble pile) to conduct operations from March 28 to March 30, with a patient movement exercise being conducted on March 31. For the March 31 event, simulated patients will be moved from Valdez to Fairbanks. Note: for the exercise, the rubble pile on Ft. Wainwright is an offsite training area that will replicate damage to the Anchorage area. Training will focus on debris removal, hazardous materials, Urban Search and Rescue, confined space Search and Rescue at the Ft. Wainwright rubble pile, and patient movement from Valdez to Fairbanks Memorial Hospital.

5 COLORADO

The information in this section was developed by U.S. Department of Energy planners to meet Nuclear Weapon Accident Incident Exercise 2014 objectives. This information will drive play at the National level to achieve broader National Exercise Program Capstone Exercise 2014 objectives. The information below is provided as an overview of the scenario ground truth for this event. The detailed nuclear weapons accident scenario ground truth information is for official use only and can be found in the National Exercise Program CAPSTONE Exercise 2014 Scenario Ground Truth For Official Use Only Annex.

5.1 Initiating Event

At 7:00 a.m. local time, a government convoy transporting nuclear weapons travels westbound at 65 miles per hour along a mostly rural section of I-70. The convoy includes three fully loaded Secure Government Transports and requisite escorts. Meanwhile, a tanker truck carrying 3,500 gallons of diesel fuel heads eastward on I-70, traveling toward the Secure Government Transports convoy at 65 mph.

The front left tire of the tanker ruptures suddenly as it nears the government convoy. The drowsy tanker driver over-corrects and drives over the median into the westbound highway lane. The tanker strikes the lead transport vehicle's catwalk—the platform in-between the cab and the trailer—causing the Secure Government Transport to tumble to the right off of the highway. The SGT lands on its tires after completely rolling over once, and the tanker ends up abutting the transport on the side of the road. The force of the impact causes the tanker to crack and begin leaking diesel onto the side of the highway where it pools around both vehicles and catches fire. Flames rapidly engulf the tanker and the transport. The transport's driver is feared dead. Meanwhile, the driver of the tanker lies face down on the right side of the westbound lanes; he suffered severe trauma and burns after being ejected from the truck cab and landing near the raging fire.

Three civilian vehicles are also caught up in the accident. A van with one driver and five passengers swerves to avoid the colliding trucks, but flips and rolls down the embankment. It lands adjacent to the growing fire surrounding the transport. The five passengers are injured and the van's driver is killed. Additionally, a sedan with only one driver traveling in the eastbound lane reacts to the accident, rear ending a second sedan carrying three persons, including the driver and one child. The second sedan (with passengers) spins out of control and comes to rest after hitting vegetation on the side of the eastbound road. The second sedan's driver and front passenger cry out in pain, as does the child in the back seat. The first sedan's driver appears unharmed.

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6 CYBER OPERATIONS

The cyber attacks in the exercise scenario will be against U.S. Department of Defense assets only and were primarily developed to meet Ardent Sentry 2014 exercise objectives. The results and reporting of these attacks will be visible to the broader National Exercise Program Capstone Exercise 2014 audience.

6.1 Cyber Operations

The Cyber operations Joint Master Scenario Events List and other exercise injects will be developed, maintained, and delivered using the Secret Internet Protocol Router Network with “placeholder events” in unclassified JOINT MASTER SCENARIO EVENTS LIST for visibility. If you have questions on cyber operations contact the appropriate North American Aerospace Defense Command –Northern Command White Cell Controller; the number can be found in the Control Cell Phonebook.

Background information to support cyber play:

The U.S. Northern Command mission of Defense Support to Civil Authorities has led to increased activity by some anti-government organizations. Currently, the most vocal organization is Free Americans against Socialist Tyranny; using social media, they advertise anti-U.S. rhetoric focusing on the Department of Defense as well as to recruit like-minded individuals to join their “cause”.

While some Free Americans against Socialist Tyranny members are capable of conducting adverse cyber operations, the greatest threat is current government employees sympathetic to their cause. It is believed that there are employees within US Northern Command, U.S. Air Force, U.S. Army, National Guard, and Defense Information Systems Agency that may support Free Americans against Socialist Tyranny doctrine based on individual comments on social media sites. Free Americans against Socialist Tyranny sympathizers may include both former and current members of the military with training on satellite communications, computer network defense, network operations, as well as military command and control. Recent reductions in force and early separation requirements have raised concern for disgruntled military and Department of Defense civilians. Based on the possible insider threat, the below capabilities could be compromised or targeted during military operations:

- Critical commercial and Department of Defense Information Networks communications infrastructure, especially concentration points or nodes, to amplify confusion and “decapitate the enemy control”.
- The North American Aerospace Defense Command –Northern Command networks and information technology infrastructure that support command operations
- Critical infrastructure and single points of failure within the affected region
- U.S. Northern Command plans and responses to events such as those for Defense Support to Civil Authorities response
- Means of communications to other agencies. Mark these communications means for later attack, exploitation, and deception or denial of use.

It is believed Free Americans against Socialist Tyranny members share their techniques through social media, public accounts as well as networks. Cyber security assessments indicate there is

not currently a threat “nexus” to the North American Aerospace Defense Command –Northern Command enclaves or mission systems. It should be noted that any illegal activity is the responsibility of the Federal Bureau of Investigation and other law enforcement agencies.

Additionally, this targeting affects personnel using the Network Effects Emulation System. Cyber security assessments do, however, indicate the possibility that North American Aerospace Defense Command –Northern Command personnel sympathetic to Free Americans against Socialist Tyranny have targeted "pre-selected systems" on the North American Aerospace Defense Command –Northern Command Non-classified Internet Protocol Router and SIPR Secret Internet Protocol Router Network enclaves.

Some cyber activities will be visible to all participants via the “WNN” or Social Media SIMDECK sites. These activities will include accusations that the government is responsible for the Alaska earthquake and a “hacktivist” manifesto.

7 INTELLIGENCE

The information in this section applies to the intelligence scenario that supports Eagle Horizon 2014. This intelligence scenario information is For Official Use Only and can be found in the National Exercise Program CAPSTONE Exercise 2014 Scenario Ground Truth For Official Use Only Annex.

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8 MARITIME

The AMALGAM MAKO maritime scenario events were developed by Northern Command planners to meet Ardent Sentry 2014 exercise objectives. These events will be visible to the broader National Exercise Plan Capstone Exercise 2014 audience.

8.1 Maritime Operations

AMALGAM MAKO Event I involves a Vessel of Interest transiting from Asia, originating in Thailand with a port call in Hong Kong before transiting the Pacific Ocean enroute to Vancouver, British Columbia, with a subsequent scheduled port call in Seattle, Washington.

The Merchant Vessel REQUIEM, a bulk carrier, departed Thailand on February 28. It made an intermediate stop in Hong Kong on March 10. The vessel continued to North America with planned port calls in Vancouver, British Columbia, on April 1, and Seattle, Washington, on April 4. This is a regularly traveled route with no unusual history.

On March 26, Joint Task Force Pacific (Canada) will release a Vessel of Interest Spot Report message to Canadian and U.S. maritime agencies indicating the Vessel of Interest has been designated a CAT1B2. On March 27, AMALGAM MAKO 14-2 execution begins; the exercise will begin with the vessel in the U.S. NORTHERN COMMAND Area of Responsibility transiting at a constant speed of about 10.5 knots or less. The vessel is taking a normal path approximating a great circle route that takes it near the Aleutian Island chain.

The vessel will continue transiting towards North America and has previously given a 96-hour arrival notice to Canadian authorities. On March 27, the Merchant Vessel REQUIEM provides a 96-hour notice of arrival to the U.S. Coast Guard. U.S. Coast Guard Maritime Intelligence Fusion Center/Pacific is expected to release a Vessel of Interest SPOTREP with updated information on its U.S. arrival to the port in Seattle, Washington.

AMALGAM MAKO Event II involves a large cruise ship (owned by a major cruise line) that collides with a merchant vessel off the coast of San Diego. The Cruise Ship SHANGRI-LA departed Los Angeles on March 26, made port in Mazatlan, Mexico, on March 28, then arrived in port Ensenada, Mexico, on March 29. Cruise Ship SHANGRI-LA departed Ensenada on March 31, after 2 hours at sea, the Merchant Vessel BBC Houston collided with the cruise ship southeast of San Clemente Island, 30 nautical miles north of the U.S./Mexico International Border. The vessel lost propulsion, main power and rapidly began taking on water in the starboard stern. Distress calls were made to U.S. Coast Guard that a collision occurred. The Captain of the Cruise Ship SHANGRI-LA ordered 3,400 passengers and crew to abandon ship. The vessel is located 60 to 70 miles from San Diego, 20 to 40 miles north of the U.S./Mexico International Maritime Border, and approximately 30 miles southeast of San Clemente Island.

An advocacy group for U.S. military combat wounded has booked this trip for 400 service members affected during combat operations overseas in the past decade. There are 250 spouses and 130 children accompanying them. As part of a non-partisan national campaign to recognize their contribution and service to America, there is a delegation of 10 Senators and Congressmen onboard along with local General and Flag Officers from San Diego, Camp Pendleton, and Fort Irwin. This trip has gained national media attention in an effort to raise money for Disabled Combat Veterans Fund.

The BBC Houston sustained minimal damage and retained propulsion and power. Initial reports are fog and rain in the area, restricting visibility.

BBC Houston U.S. Transportation Command -contracted liner strikes cruise ship.

BBC Houston transporting containers to Korea strikes the Cruise Ship SHANGRI-LA. The BBC Houston sustains minimal damage, but will continue to Long Beach for inspection and sea worthiness.

Table 58. Effects to Ships

Community	Ship Effects
California Coast	
Southern Coast California	• USTRANSCOM-contracted Merchant Vessel BBC Houston strikes Cruise Ship SHANGRI-LA causing it to sink. • BBC Houston is carrying containers enroute to Korea. • The BBC Houston sustains minimal damage, but will continue to Long Beach for inspection/sea worthiness and determination of mission continuation.

9 APPENDIX A – MAPS

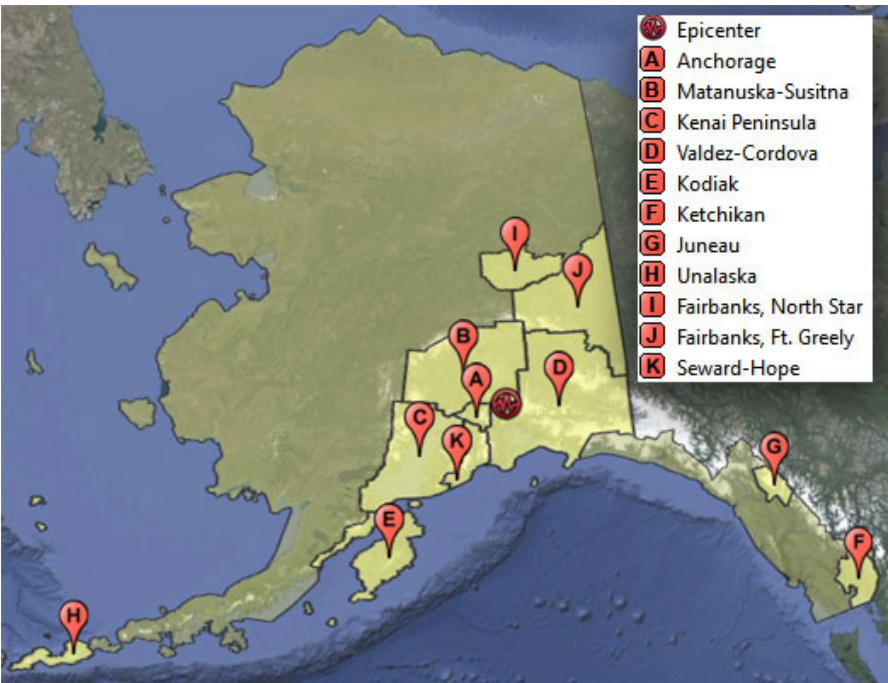


Figure 14. Alaska Boroughs in Scenario



Figure 15. Southcentral Alaska

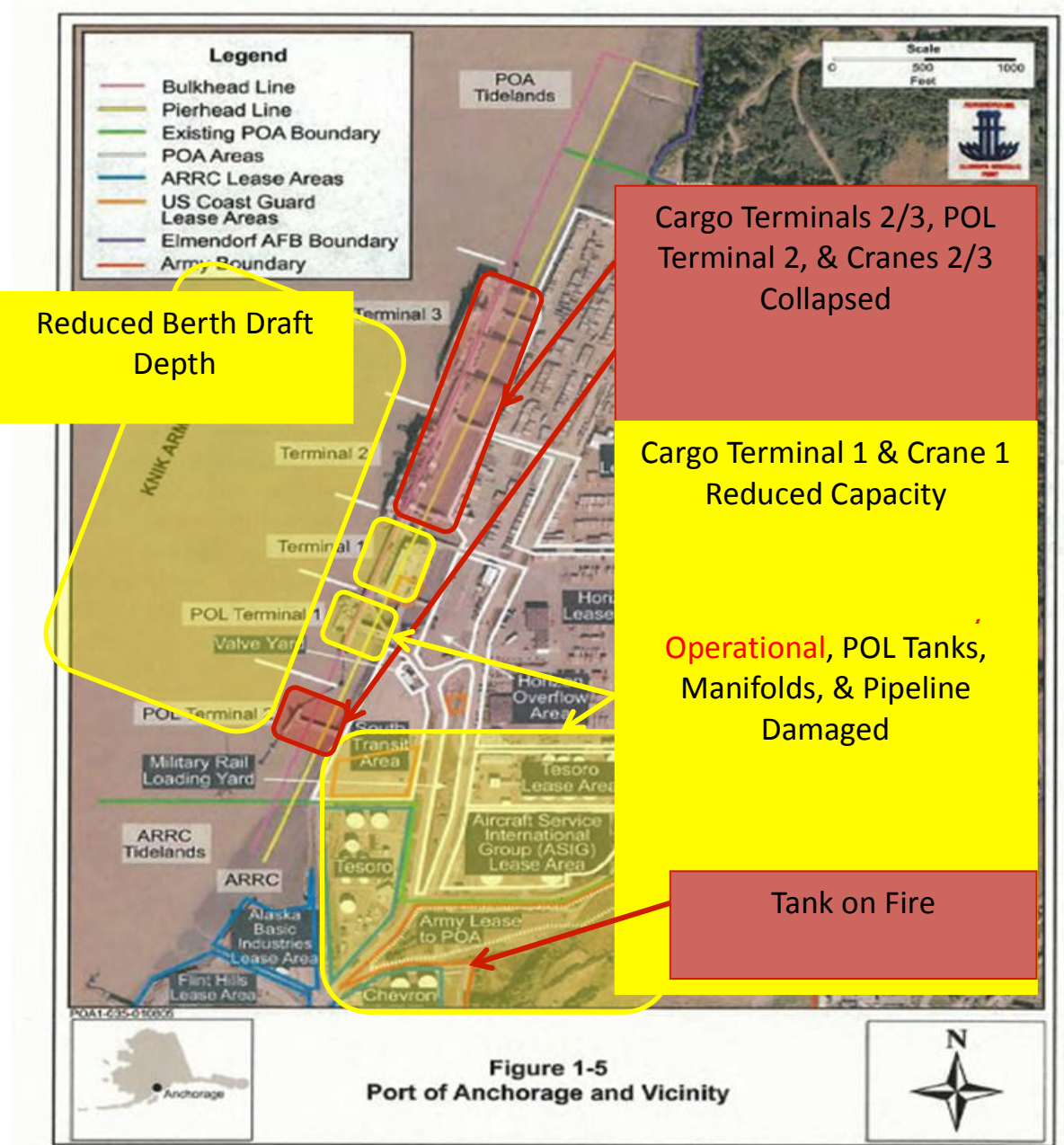


Figure 16. Port of Anchorage Damage

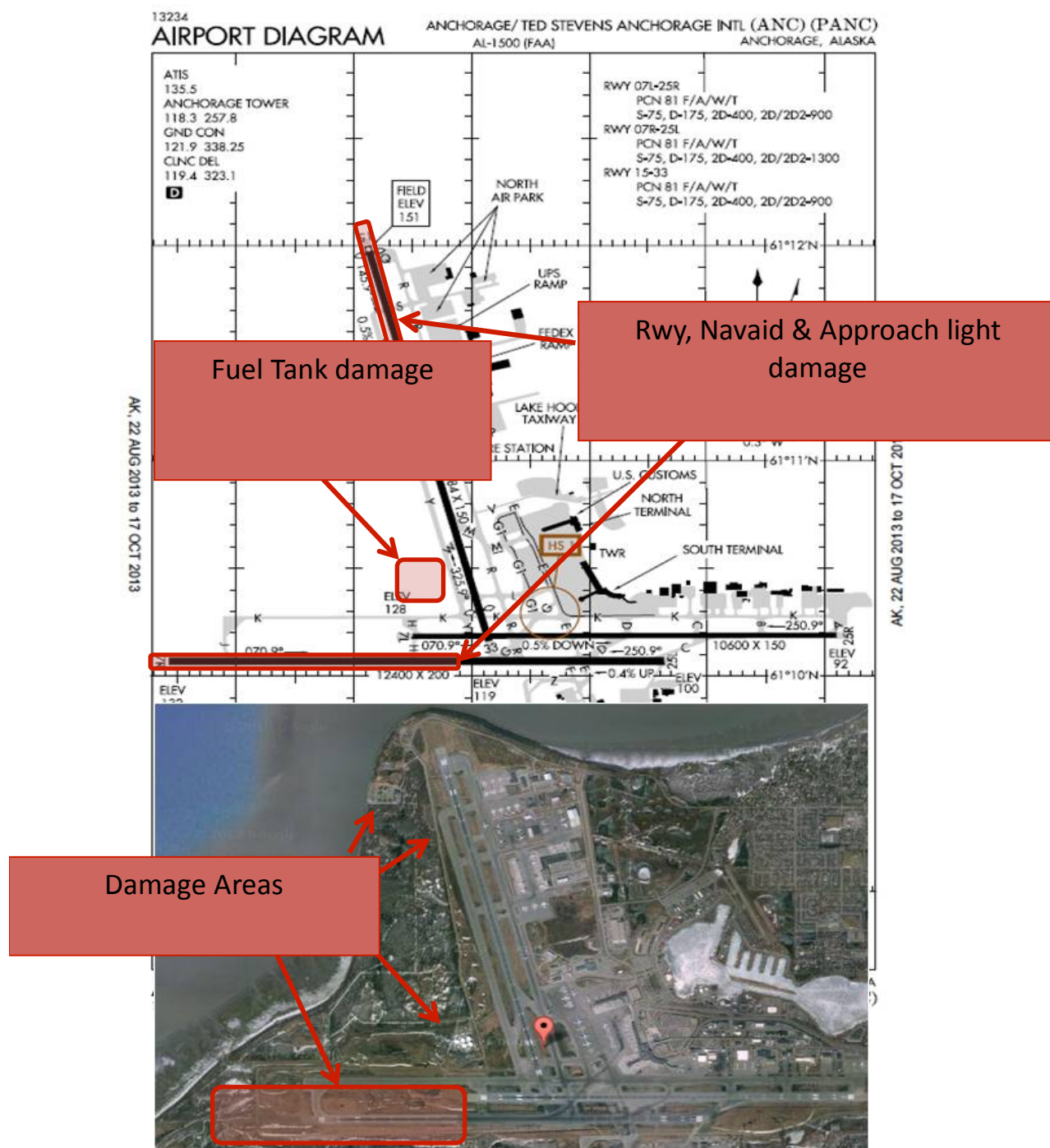


Figure 17. Ted Stevens Airport Damage

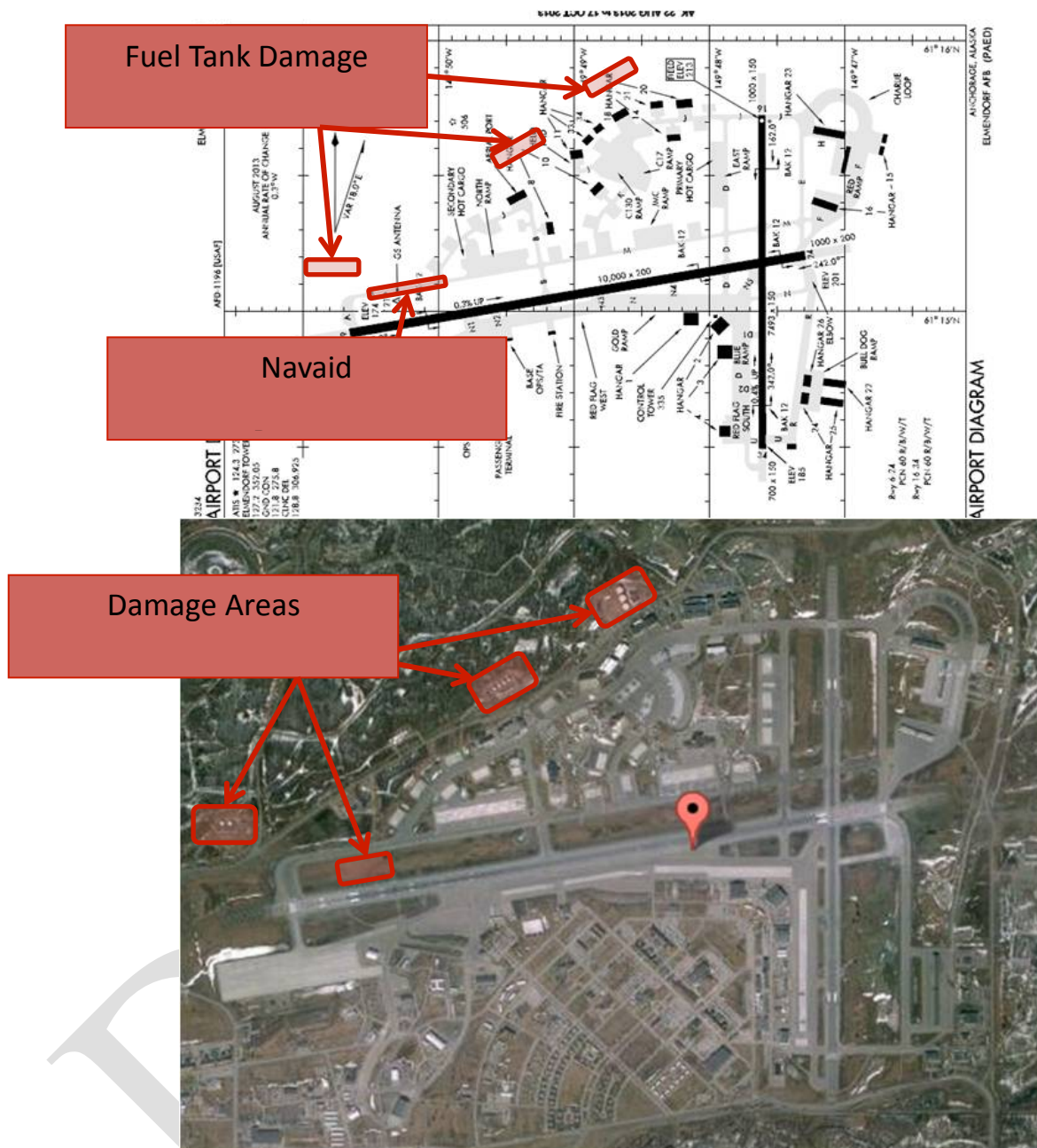


Figure 18. Elmendorf Air Force Base Damage

9.1 Earthquake Shake Maps

Earthquake shake maps developed by the U.S. Geological Survey can be found at the following link listed below. Products include images and geographic information system files representing instrumental intensity, peak ground acceleration, peak ground velocity, and spectral response.

<http://earthquake.usgs.gov/earthquakes/shakemap/list.php?y=2014&n=global&s=1>

9.2 Tsunami Inundation Maps

Tsunami inundation maps developed by the National Oceanic and Atmospheric Administration can be found as listed below.

- Posted to the Lessons Learned Information Sharing National Exercise Program Capstone Exercise 2014: Scenario Sub Group Community:
<https://www.llis.dhs.gov/community/documents?exercise=542>
- Posted to the controller portion of the player portal for use during exercise conduct.

9.3 Alaska Event Maps

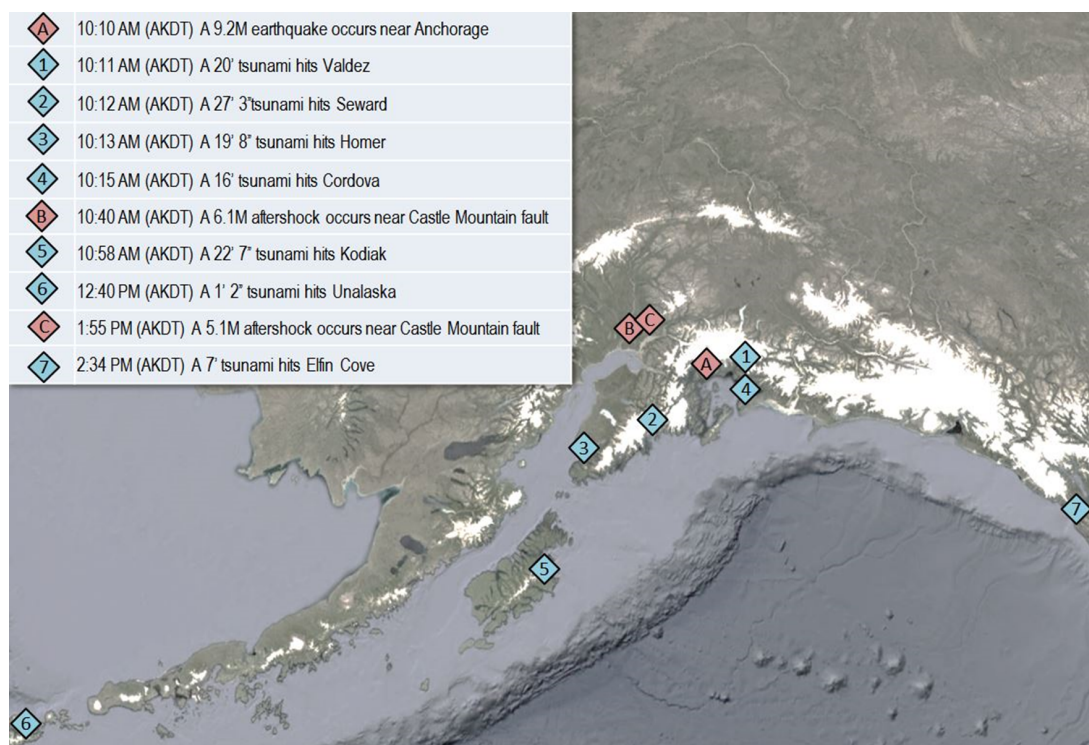


Figure 19. March 27, 2014

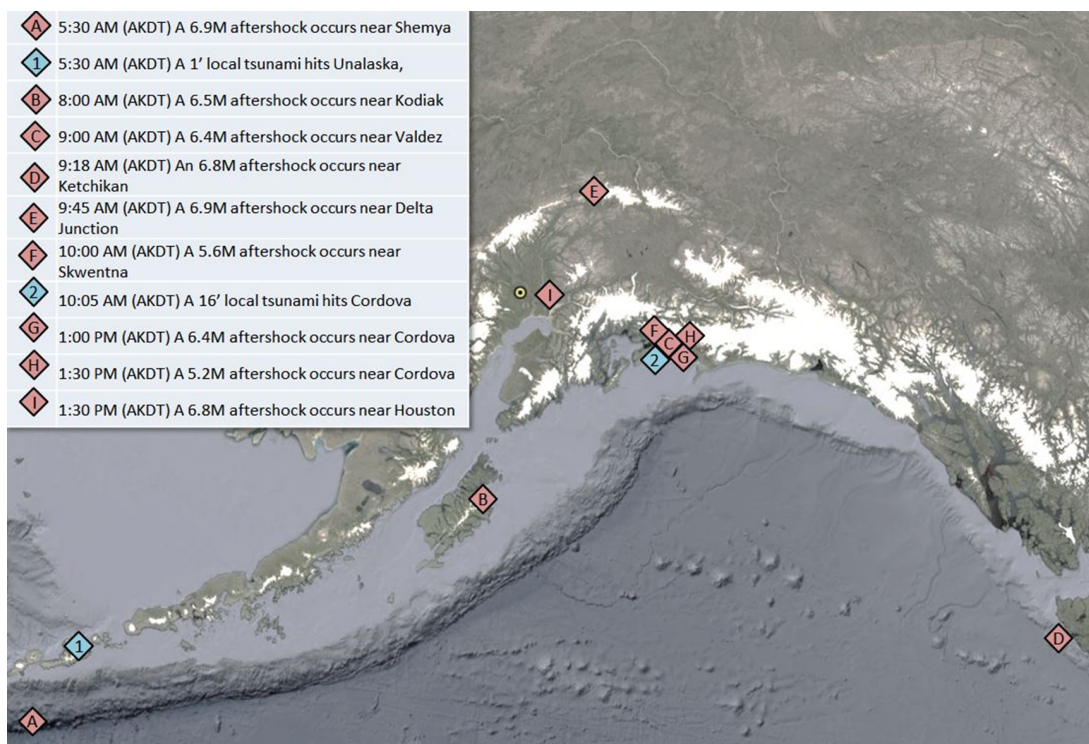


Figure 20. March 28, 2014

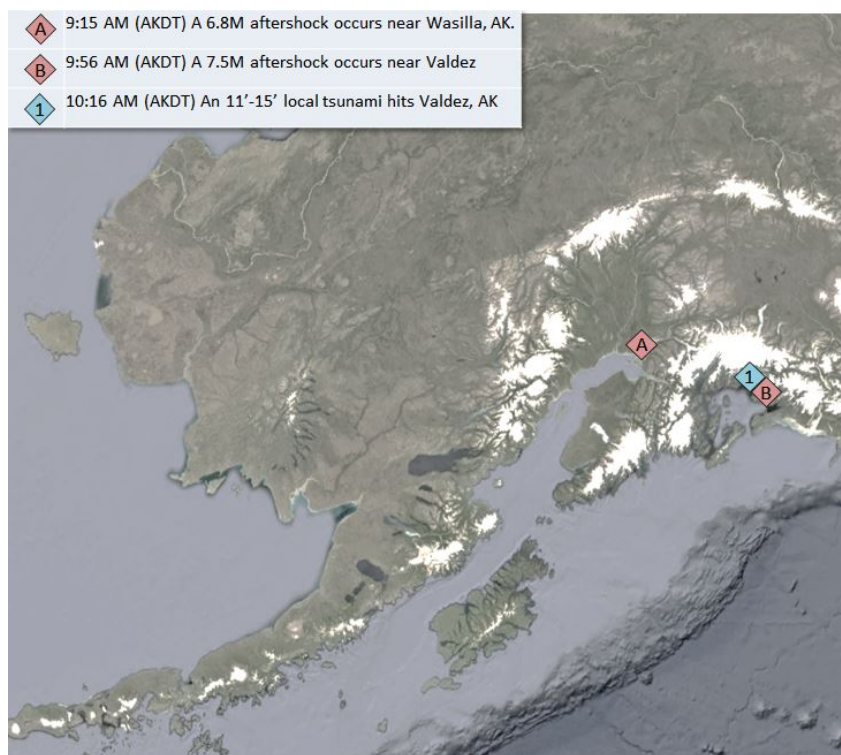


Figure 21. March 29, 2014

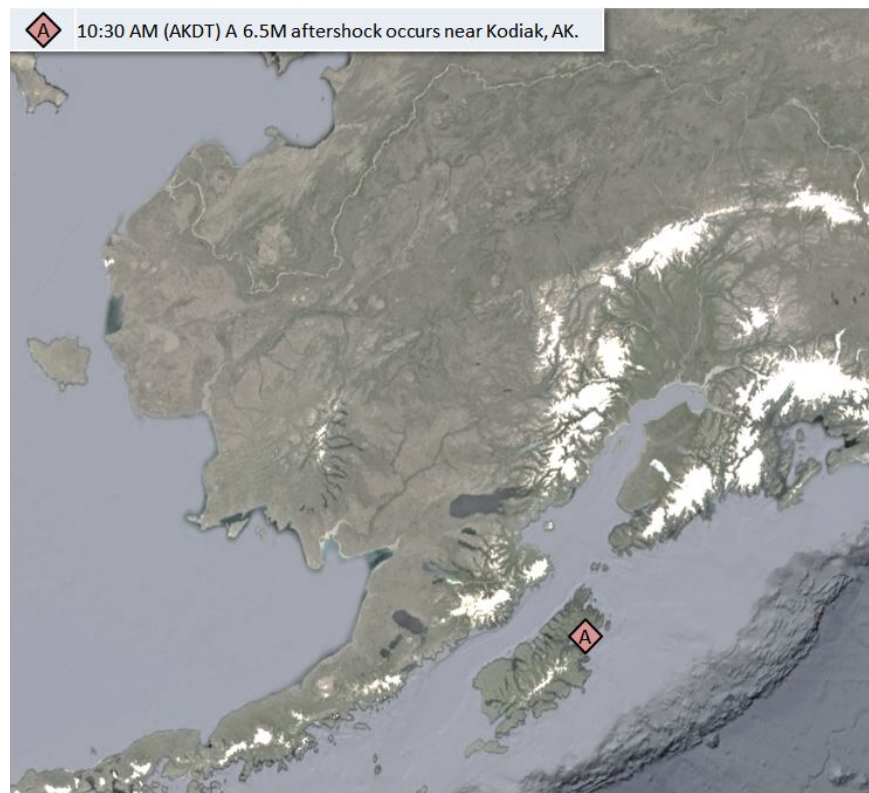


Figure 22. March 30, 2014

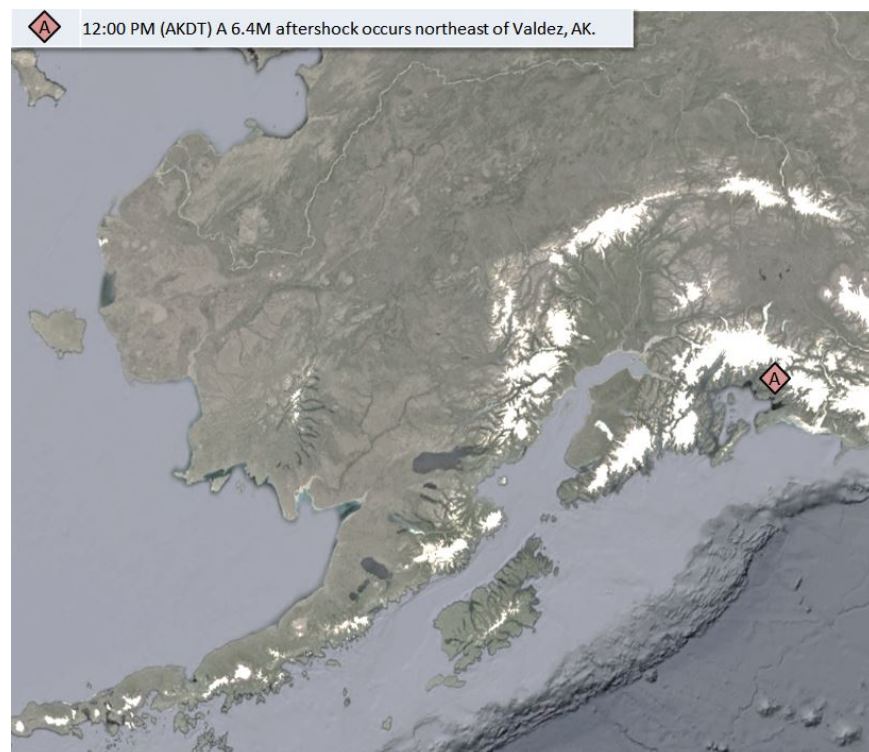


Figure 23. April 1, 2014

9.4 Tsunami Maps

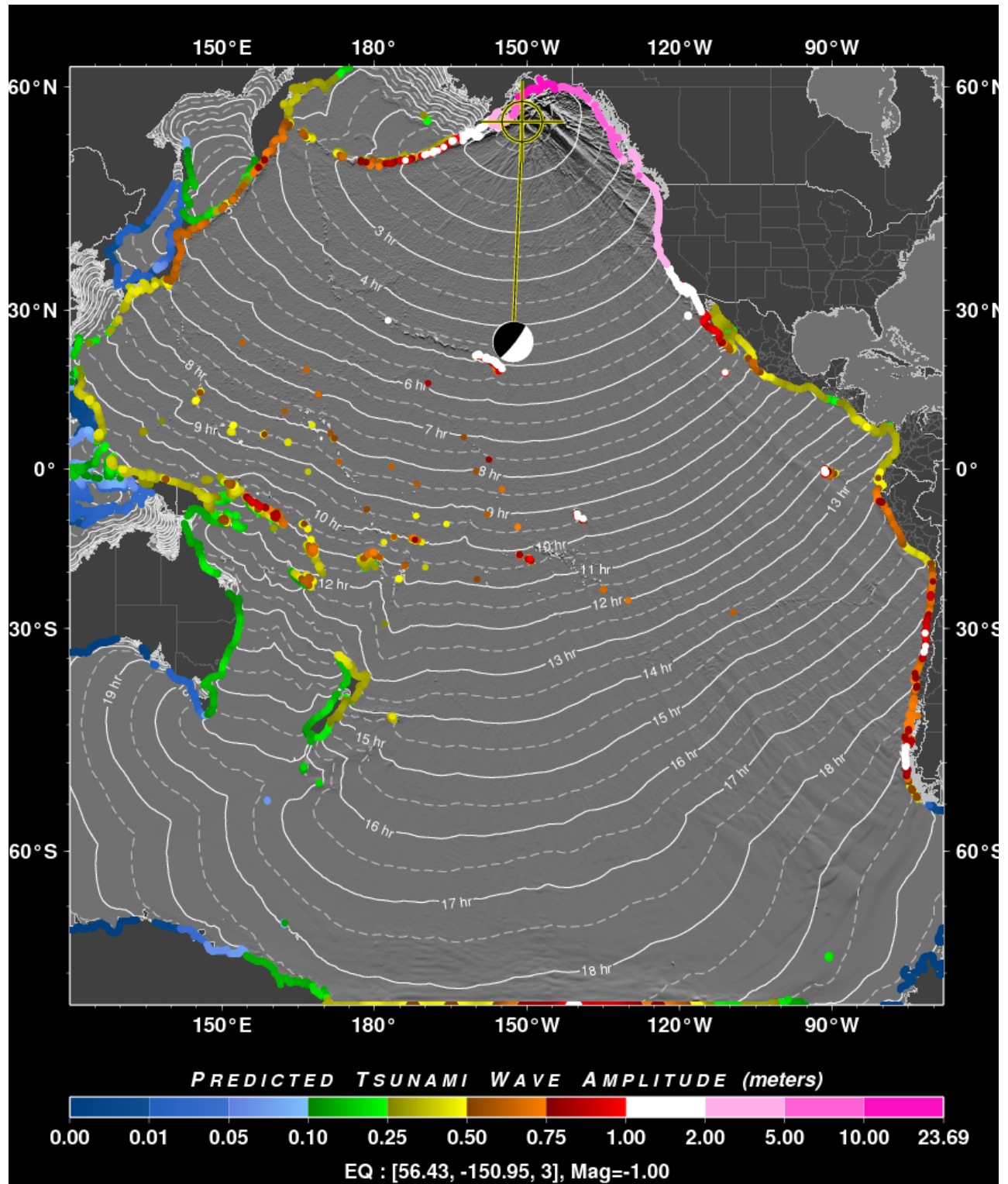


Figure 24. Predicted Tsunami Wave Amplitude

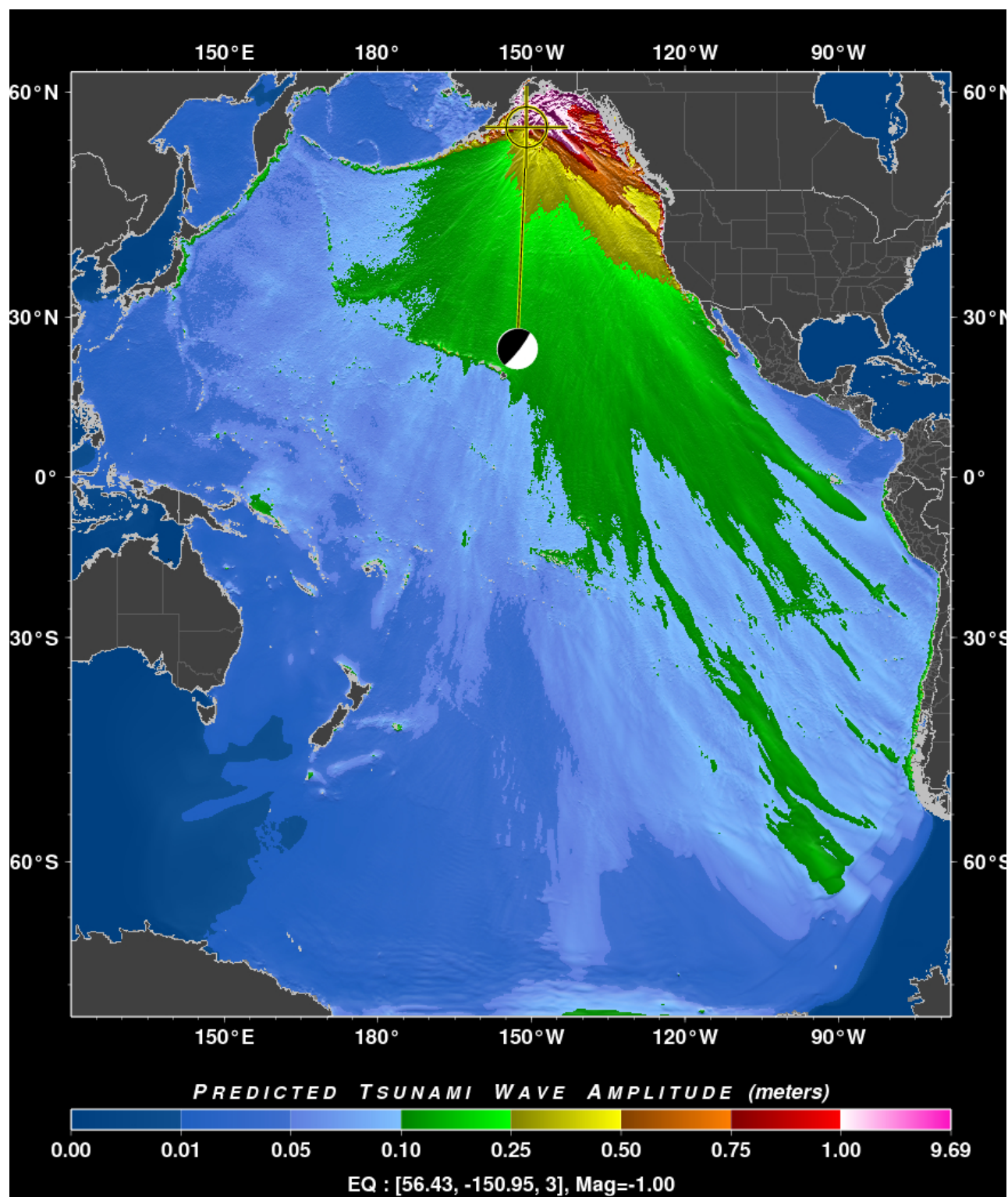


Figure 25. Predicted Tsunami Wave Amplitude

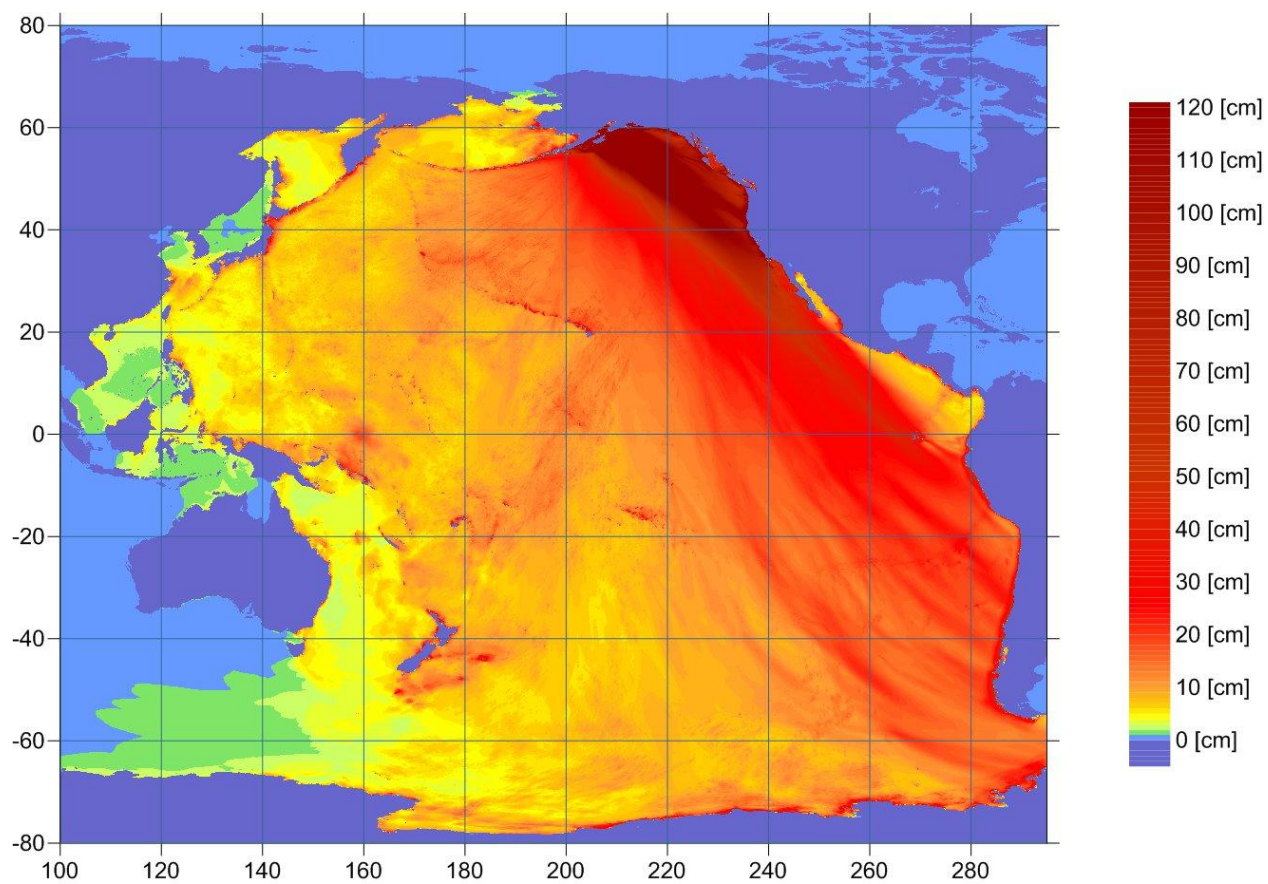


Figure 26. Tsunami Map

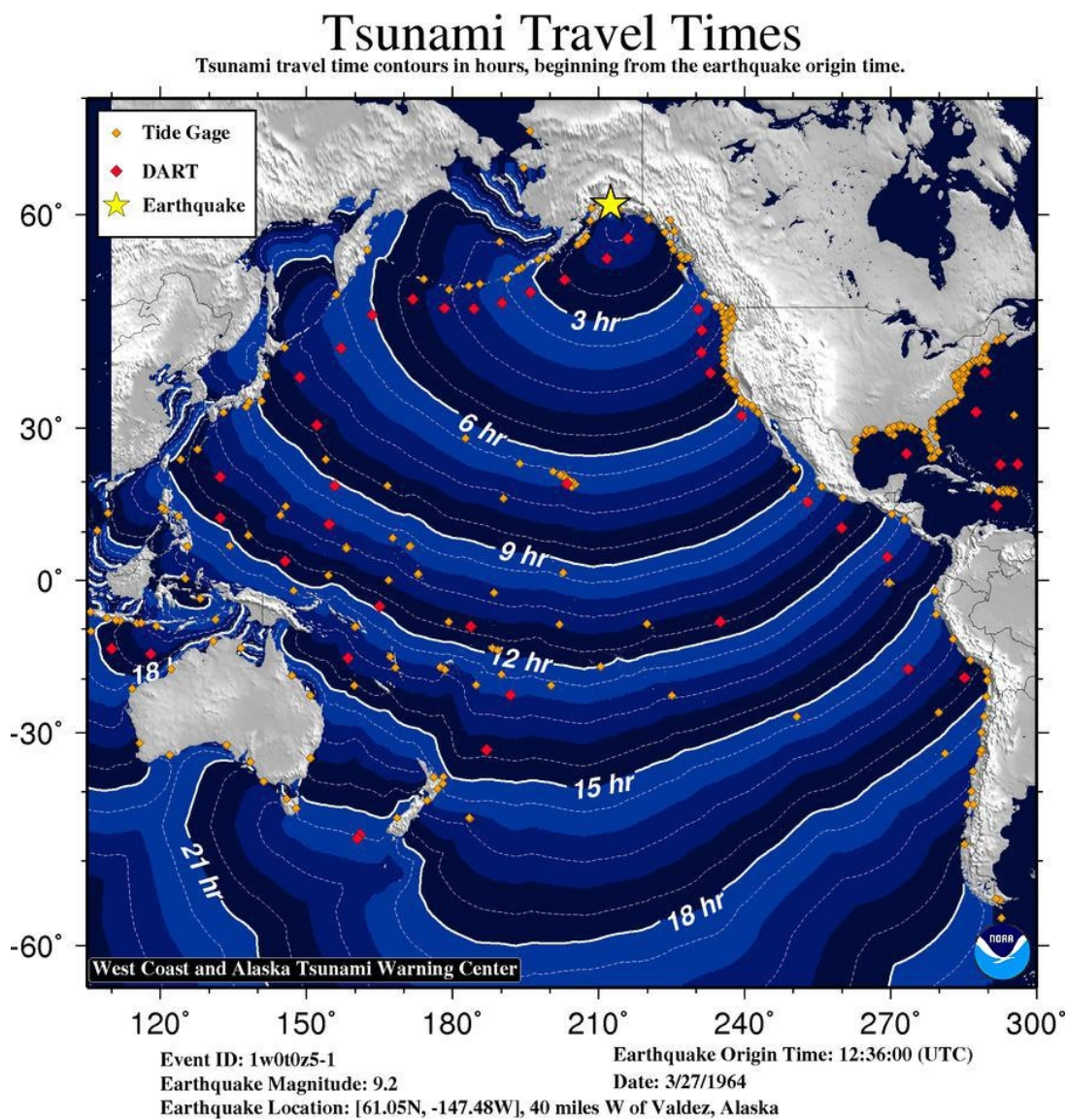


Figure 27. Tsunami Travel Times

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10 APPENDIX B – ALASKA COMMUNITY INFORMATION

10.1 Background

Alaska is the most active seismic area in the United States, with as many as 4,000 earthquakes, of varying depth, annually. During the 70-year period from 1899 to 1969 eight large earthquakes, measuring 8.0 or greater in magnitude, have rocked Alaska. Most were centered in remote, unpopulated areas of the state and did little or no damage to the state's fragile infrastructure. The most dramatic and memorable example of these earthquakes was the 1964 Great Alaskan Earthquake. Measuring 9.2 in magnitude and centered near Alaska's most populated areas, the earthquake caused extensive damage. In total, 131 people died as a result of the 1964 earthquake, 115 of those deaths occurred in Alaska. Loss of life during the 1964 earthquake could have been much greater. Many attribute the low casualty numbers to time of day; many people were on their way home from work and not still in their office buildings, while others had the day off for the Good Friday holiday. Schools were closed and relatively few people were in the most heavily damaged downtown Anchorage area. This seismic event left homes twisted and destroyed and buildings in shambles, and the ensuing tsunamis damaged/destroyed some of Alaska's coastal communities. Deaths from this earthquake were recorded as far south as California and the affects from powerful waves caused damage to sea side towns in Hawaii.

Table 59. Population Comparison 1960-2011⁹

Jurisdiction	1960 Census Data	2011 Census Data	Population Increase
Municipality of Anchorage Census Area	82,833	296,197	360%
Valdez-Cordova Census Area	4,603	9,783	210%
Kenai Peninsula Borough	9,053	56,369	620%
Kodiak Island Borough	7,174	13,870	190%
Fairbanks North Star Borough	40,616	97,615	240%
Juneau City and Borough	9,714	32,290	333%
Alaska	226,167	722,190	320%

10.2 1964 Earthquake Background Information

10.2.1 Demographics

- Pre-event Alaska population was less than 250,000.
- The number of deaths from the earthquake totaled 131; 115 in Alaska and 16 in Oregon and California. The death toll was extremely small for a quake of this magnitude due to low population density, the time of day and the fact that it was a holiday, and the type of material used to construct many buildings (wood). *(Source: Alaska Earthquake Information Center)*

⁹ Information derived from the Alaska Department of Labor and Workforce Development.

10.2.2 Event Description

- Earthquake occurred at 5:36 p.m. on March 27, 1964.
- Epicenter in or near College Fjord, 75 miles east of Anchorage, 55 miles west of Valdez.
- Ten aftershocks of 6.0 or greater occurred in the 24-hour period after the initial earthquake.

10.2.3 Overall Consequences

- Shock duration: 3 to 5 minutes.
- One hundred thirty one total deaths; 116 from the tsunami, 15 from the earthquake. Alaska death toll: 115; 100 from the tsunami, 15 from the earthquake.
- Five local slide generated tsunamis: Valdez (2), Seward, Whittier, and Kachemak Bay. All occurred within minutes of the initial earthquake.
- Most disastrous tsunami to ever hit the West Coast of the United States, up to 67 meters (220 feet) high at speeds up to 400 miles per hour. One hundred fifteen total deaths, 16 deaths in Oregon and California (damage also recorded in Hawaii).
- Rock slides, landslides, and avalanches occurred all over the southern region of Alaska.
- Approximately \$300 million to \$400 million of property damage.
- Major damage area: 50,000 square miles.
- Most highly affected communities: Anchorage, Chitina, Glenn Allen, Homer, Hope, Kasilof, Kodiak, Moose Pass, Portage, Seldovia, Seward, Sterling, Valdez, Wasilla, and Whittier.
- Vertical displacement over an area of about 520,000 square miles, 2.3 to 11.5 meters.
- Aftershock zone was 250 miles, from Prince William Sound to the southwestern end of Kodiak Island.
- Within 24 hours of the original event, 10 tremors of 6.0 magnitude or greater followed.
- Aftershocks persisted for nearly 1 year.

10.3 1964 Consequences to Communities

10.3.1 Anchorage

- Nine earthquake deaths.
- Complete closure of all schools due to severe damage.
- Multi-level buildings seriously affected by the initial tremor resulting in three collapses.
- A 30-block area of houses and commercial buildings damaged or destroyed.
- Landslides in downtown, Government Hill, and Turnagain Heights (75 houses destroyed).
- Water, sewer, gas, phone, and power systems disrupted throughout the area.

10.3.2 Valdez

- Two local slide tsunamis, Valdez Inlet and Shoup Bay, resulted in \$15 million in damages and 32 deaths.
- A section of land 4,000 feet high by 600 feet wide slid into the sea.

10.3.3 Seward

- A slide tsunami occurring during the initial earthquake reached Seward approximately 20 minutes after the onset resulting in \$14 million in damages and 12 deaths.

- The waterfront, boats, and railroad were destroyed and a 1,070-meter section of the waterfront slid into Resurrection Bay.
- Oil pipes on the waterfront ruptured causing holding tanks at an oil storage facility to explode, burning petroleum spread fire across the harbor.

10.3.4 Whittier

- A local slide tsunami caused \$10 million in damages and 12 deaths.

10.3.5 Port Nellie Juan

- A tsunami caused three deaths and destroyed the dock.

10.3.6 Montague Island

- The highest vertical displacement was 13 to 15 meters.

10.3.7 Kodiak

- The ground levels raised up to 30 feet in some areas.
- A local slide tsunami and a tsunami caused by the initial earthquake caused \$131 million in damages and 8 deaths.
- One hundred fifty eight houses were destroyed by tsunamis.
- Kaguyak village was destroyed by a tsunami resulting in three deaths.
- The community of Kaslin Bay hit by the tsunami resulting in six deaths.

10.3.8 Homer

- The Kachemak Bay tsunami caused the Homer Spit to flood.

10.3.9 Portage

- Ground levels dropped down to 8 feet in some areas.

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11 APPENDIX C – TERMS AND DEFINITIONS

After Shock – A smaller earthquake that occurs after a previous large earthquake, in the same area of the main shock. If an aftershock is larger than the main shock, the aftershock is redesigned as the main shock and the original main shock is redesigned as a foreshock.

Deep Water Fjord – A long, narrow inlet with steep sides or cliffs, created by glacial erosion. A fjord is formed when a glacier cuts a U-shaped valley by ice segregation and abrasion of the surrounding bedrock. Glacial melting is accompanied by the rebounding of the Earth's crust as the ice load and eroded sediment is removed. Most fjords are deeper than the adjacent sea.

Federal Emergency Management Agency Region IX – Federal Emergency Management Agency Region 9's area of responsibility includes: Arizona, California, Hawaii, Nevada, Guam, American Samoa, Commonwealth of Northern Mariana Islands, Republic of Marshall Islands, Federated State of Micronesia, and more than 150 sovereign tribal entities.

Federal Emergency Management Agency Region X – Federal Emergency Management Agency Region 10's areas of responsibility includes: Alaska, Idaho, Oregon, and Washington.

Inundation Maps – Inundation maps translate flood data into operational maps that communicate risk and the consequences of current and forecasted flooding.

Liquefaction – Soil liquefaction is the process where soils lose sufficient strength due to earthquake shaking, causing it to behave like a liquid.

National Tsunami Warning Center (NTWC) – The NTWC is one of two tsunami warning centers that are operated by the National Oceanic and Atmospheric Administration in the United States. It was called the West Coast and Alaska Tsunami Warning Center (WC/ATWC) until October 1, 2013. The name was changed to reflect its geographical zone of responsibility. Headquartered in Palmer, Alaska, the NTWC is part of an international tsunami warning system (TWS) program and serves as the operational center for TWS of all coastal regions of Canada and the United States, except Hawaii, the Caribbean, and the Gulf of Mexico.

National Exercise Program Whole Community – Whole community is an approach to emergency management that reinforces the fact that Federal Emergency Management Agency Region is only one part of the nation's emergency management team and that all resources must be leveraged in preparing for, protecting against, mitigating against, responding to, and recovering from all hazards; collectively to meet the needs of the entire community.

Paws – Paws is a volunteer non-profit organization based in Milwaukee, Wisconsin, that provides specially trained people and dogs to assist in locating missing persons.

Shake Maps – A shake map is a product of the U.S. Geological Survey Earthquake Hazards Program in conjunction with regional seismic network operators. Shake map sites provide near-real-time maps of ground motion and shaking intensity following significant earthquakes. These maps are used by federal, state, and local organizations, both public and private, for post-earthquake response and recovery, public and scientific information, as well as for preparedness exercises and disaster planning.

Slide Tsunami – A tsunami caused by an underwater landslide.

Stafford Act – A U.S. federal law designed to bring an orderly and systemic means of federal natural disaster assistance for state and local governments in carrying out their responsibilities to aid citizens. Congress' intention was to encourage states and localities to develop comprehensive disaster preparedness plans, prepare for better intergovernmental coordination in the face of a disaster, encourage the use of insurance coverage, and provide federal assistance programs for losses due to a disaster.

Tsunami – A series of water waves caused by the displacement of a large volume of a body of water, generally an ocean or a large lake. Earthquakes, volcanic eruptions and other underwater explosions (including detonations of underwater nuclear devices), landslides, glacier calvings, meteorite impacts, and other disturbances above or below water all have the potential to generate a tsunami.

Tsunami Wave Amplitude – The height of a tsunami water wave.

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