



Alaska Department of Transportation & Public Facilities

Earthquake Response

Dave Kemp, P.E., PMP
Chris Hodgin, P.E., PMP

February 7, 2019

Our mission is to ***Keep Alaska Moving*** through service and infrastructure.

Homer King Derby, March 24, 2018



March 21, 2018 at 1:13 p.m. Eagle River Bridge Strike





Incident Command System (ICS)

The Incident Command System is a management system designed to enable effective and efficient domestic incident management by integrating a combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure. ICS is normally structured to facilitate activities in five major functional areas: Command, Operations, Planning, Logistics, Intelligence & Investigations, Finance and Administration. It is a fundamental form of management, with the purpose of enabling incident managers to identify the key concerns associated with the incident—often under urgent conditions—without sacrificing attention to any component of the command system.

FEMA courses: 100, 200, 300, 700 and 800



Table Top Exercises



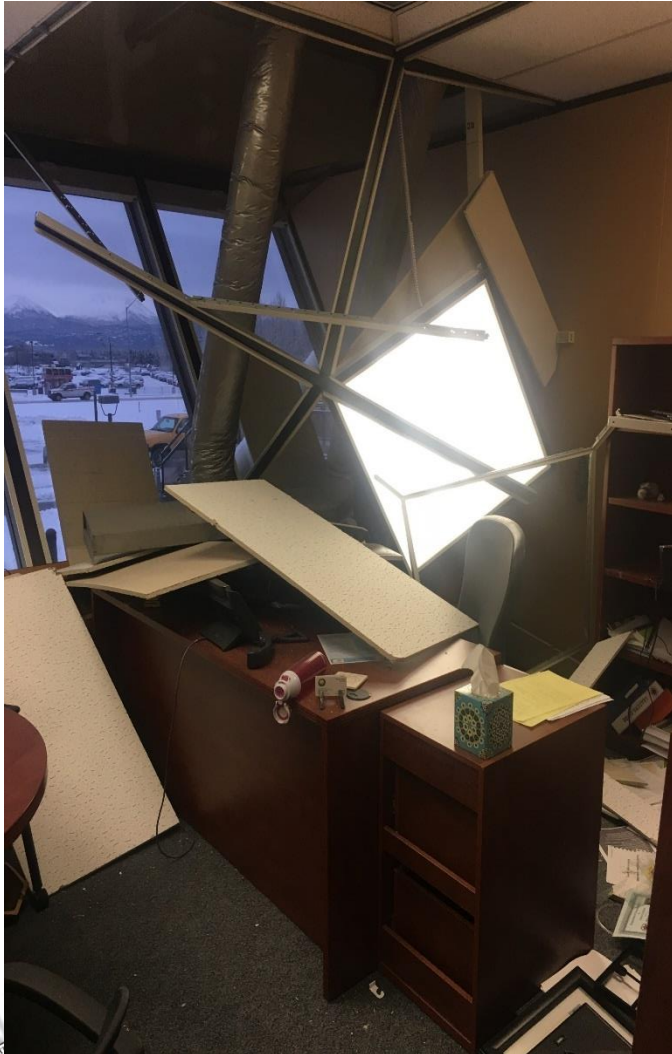
Keep Alaska Moving through service and infrastructure



Practice minor incidents with ICS



November 30, 2018





Friday, November 30 Immediate Response

8:29 a.m. 7.0 earthquake followed several minutes later by a 5.7 aftershock

8:35 a.m. Aviation Building evacuated and cleared

8:44 a.m. First DOT&PF Facebook post reporting damage and establishing hashtag #AlaskaEarthquake

9:30 a.m. DOT&PF Emergency Operations Center (EOC) up and running

10:15 a.m. Traffic control & Anchorage Police Department on site Minnesota & International

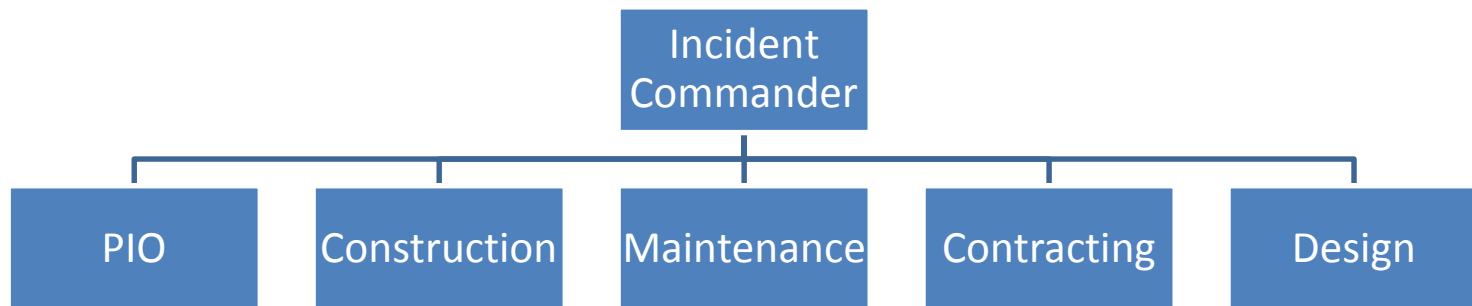
10:30 a.m. Repairs started on Minnesota & International

11:08 a.m. Earthquake webpage up and running

11:34 a.m. First electronic Situation Report published

Incident Command Team-Operational

24/7 from Nov 30th to Dec 3rd





Next Steps

1. Determine extent of damage
2. Prioritize work
3. Communicate priorities with team
(staff, consultants and contractors)
4. Communicate with the public

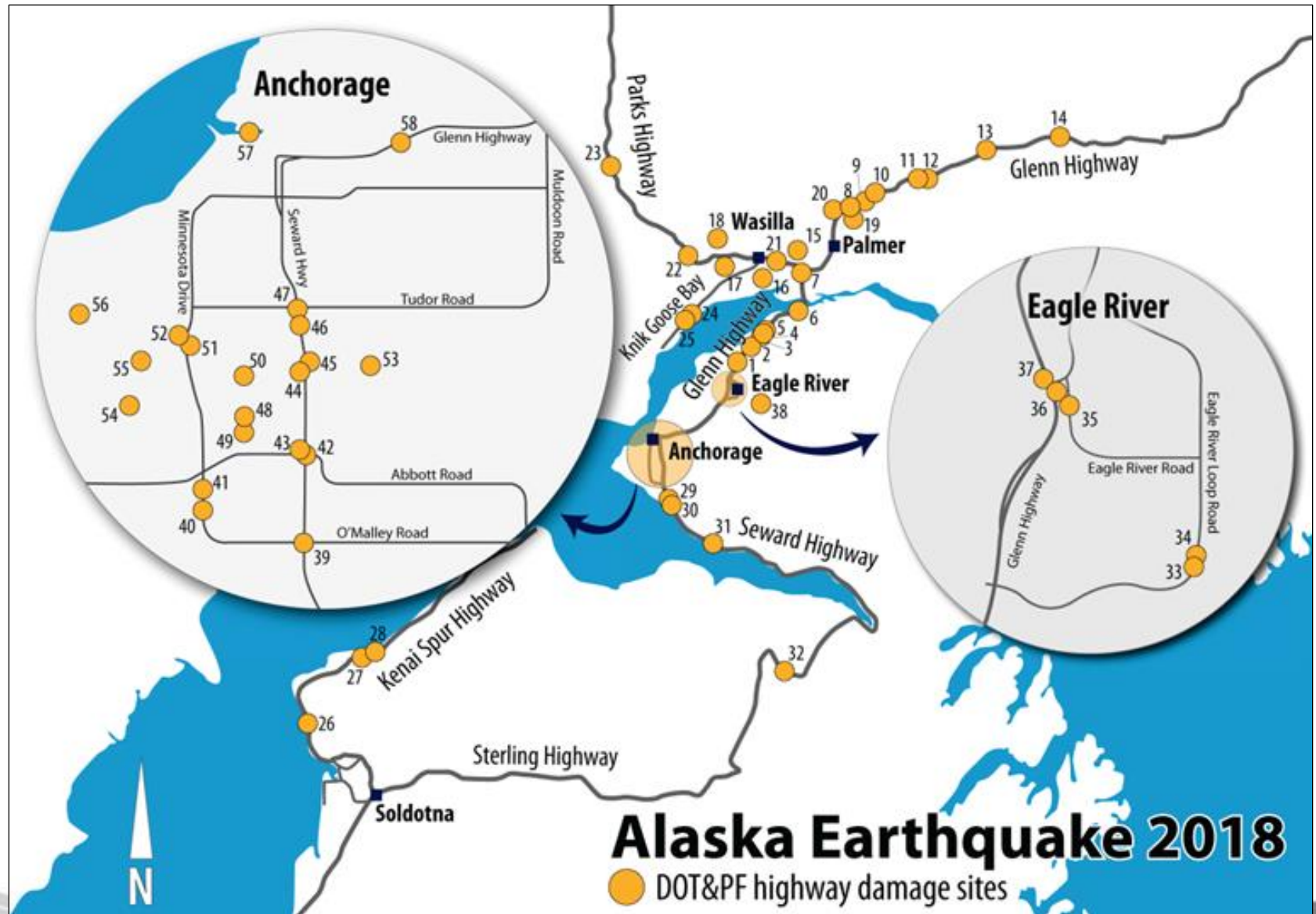
Determine Extent of Damage



Five Sources of Information

1. Maintenance Staff
2. Bridge Inspectors
3. Construction Team
4. Consultant Team
5. Public

Prioritize Work



Communicate with Team: Staff + Consultants/Contractors



Communicating with the Public



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You are here: [DOT&PF](#) > [Earthquake Updates](#)

Earthquake Damage Assessment Updates

This is an archive of information from the Nov. 30 2018 earthquake. Essential travel routes have been restored, and DOT&PF is pursuing permanent repairs to earthquake-damaged sites.

[Click to subscribe and receive updates.](#)

- An earthquake, measured as a magnitude, 7.0, was reported between Palmer and Anchorage at 8:29 am. on Friday, Nov. 30, 2018.

Photos from November 30, 2018 Earthquake. (Flickr)



Minnesota Drive SB on Ramp to Int'l Airport Friday November 30, 2018 @ 8:29am



Minnesota Drive SB on Ramp to Int'l Airport Tuesday, December 4, 2018.



Willow Fishhook Road



November 30th

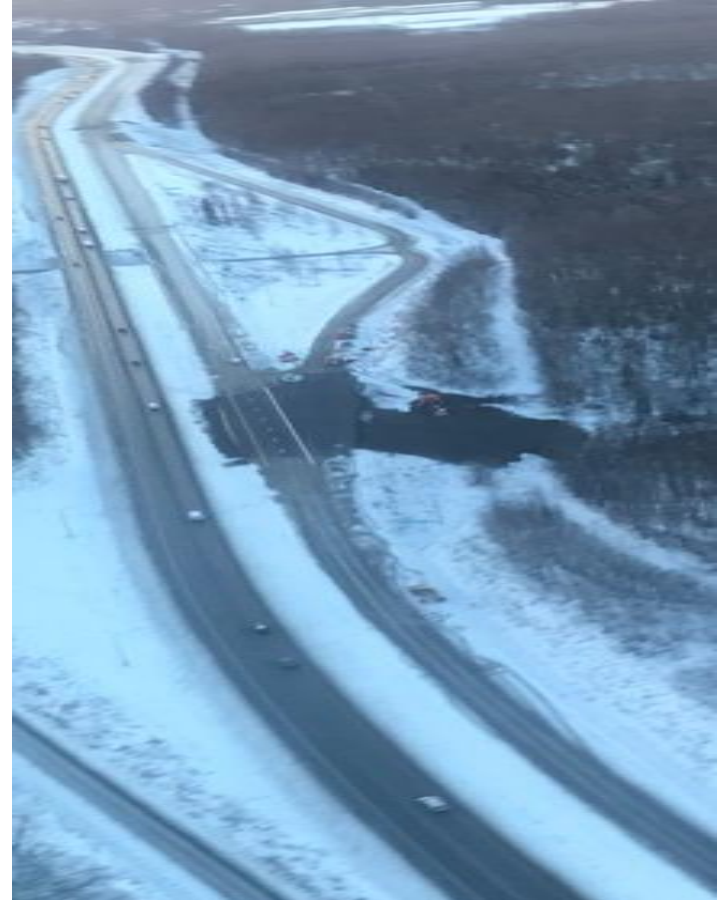


December 10th

Glenn Highway at Mirror Lake



November 30th



December 5th

Glenn-Parks Interchange



Northbound Eagle River Bridge



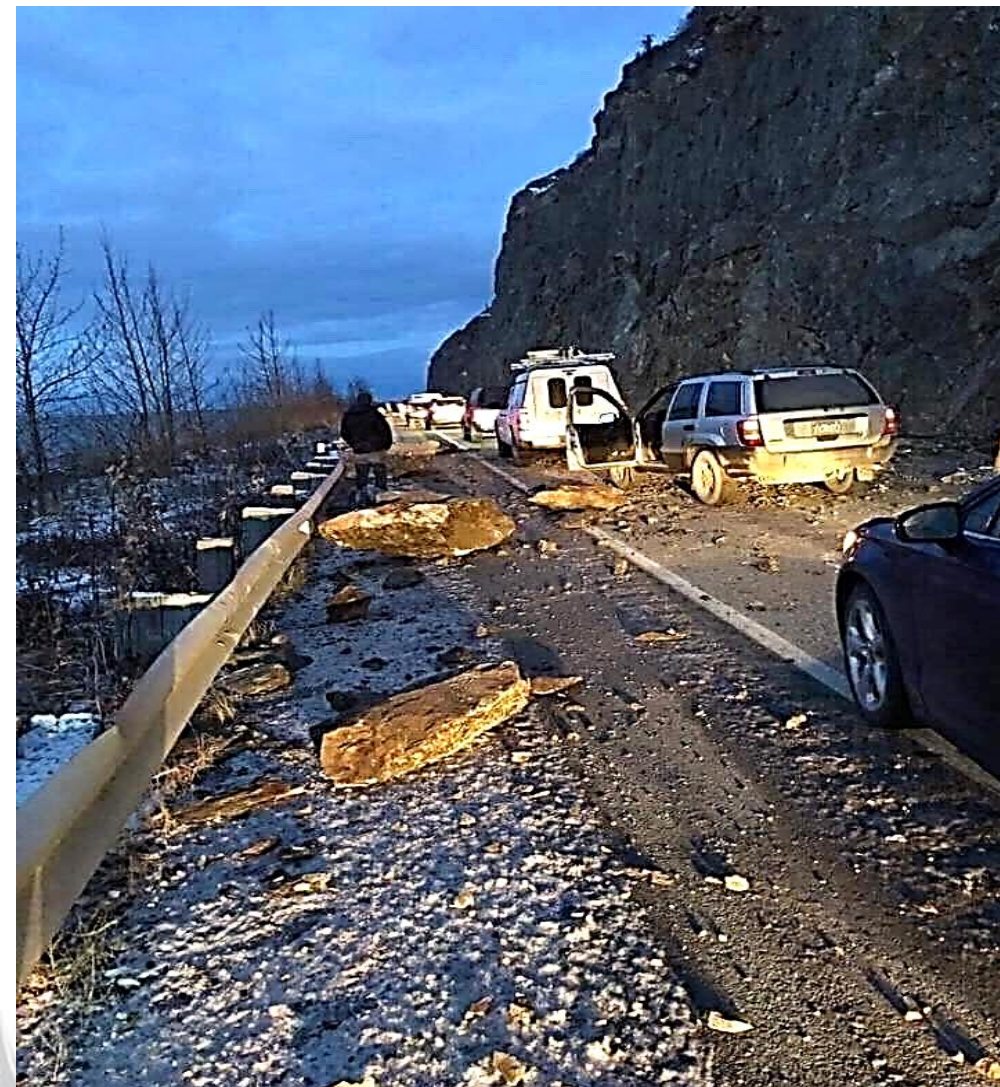
Seward Highway at Dowling



Partnering with AWWU: Briggs Bridge



Seward Highway Rockfall



Partnership with Mat-Su: Vine Road





Partnership with Mat-Su: Vine Road



Hot Wash: What could we have done better?



Hot Wash Results

Action Log



Sprint Master: _____

Last Update: _____

	High	Medium	Low	Total
Complete	0	0	0	0
In Progress	0	0	0	0
Behind	0	0	0	0
Not Started	0	0	24	24
Total	0	0	24	24
% Of Total	0%	0%	100%	

Description	Project	Status	Priority	Due Date	Complete	
Purchase Dust Masks	Quake 2018	Not Started	Low			r
Purchase Air Quality Sniffer	Quake 2018	Not Started	Low			r
Create Emergency Bags for Central EOC Responders (flashlight, batteries, masks, hard hat, reflective vest)	Quake 2018	Not Started	Low			r
Purchase Bottled Water (rotate annually)	Quake 2018	Not Started	Low			r
Large, Laminated Map for Conference Room	Quake 2018	Not Started	Low			r
Wi-Fi Password (ToCRSoc254)	Quake 2018	Not Started	Low			
Purchase 2 Whiteboards and Markers	Quake 2018	Not Started	Low			
Protocol for contacting EOC's for the MOA/APD	Quake 2018	Not Started	Low			
Arrange for Primary Power to the Conference Room	Quake 2018	Not Started	Low			
Computer Ports and Cords (20)	Quake 2018	Not Started	Low			
Purchase Respirators NOTE: Recommend staying with paper masks due to medical requirements	Quake 2018	Not Started	Low			
Purchase Thumb Drives (10)	Quake 2018	Not Started	Low			
Responder Safety Jackets/Hats	Quake 2018	Not Started	Low			
Tripods (One tabletop, one standing)	Quake 2018	Not Started	Low			
Insure all Supervisors have Staff Numbers, Master Directory w/Rox Ann	Quake 2018	Not Started	Low			
Duty as First Responder Clarification	Quake 2018	Not Started	Low			
Contact Numbers for Consultants, Utilities, etc.	Quake 2018	Not Started	Low			
Allow/Keep Consultants in Control of TCP's per Site vs. DOT Provided	Quake 2018	Not Started	Low			
Plan for a Good Finished Product - Complete finish to include signage and striping.	Quake 2018	Not Started	Low			
Call in Helpers such as Design, Graphics, and have IT on site up front	Quake 2018	Not Started	Low			
Get Emergency TCPs Quickly to Free Up APD	Quake 2018	Not Started	Low			
Prepare for Wind on TC Devices	Quake 2018	Not Started	Low			
Attach all File Cabinets/Bookshelves/Tall Furniture to the wall	Quake 2018	Not Started	Low			
Return to Work Policy/Procedure	Quake 2018	Not Started	Low			



Current Activities

1. Identify additional damage due to earthquake & aftershocks (Ongoing)
2. Request additional support to deliver our normal program & all of the addition earthquake work (Request submitted)
3. Request 90 day extension of the Federal Emergency Management Agency (FEMA) 180 day time limit for earthquake damage (Approved)
4. Accounting, negotiating and paying for all the emergency work (Ongoing)
5. Establishing contracts for all the 160+ locations that will require permanent repairs (Ongoing)
6. FEMA disaster declaration (Approved)
7. Current contracts total \$7.27M



Other DOTs: “How did they do it?”

- Last spring, we realized that we were not sufficiently prepared to perform during an emergency.
- We undertook training and practiced what we learned in our training.
- We have a very close working relationship and trust with the contracting community.
- We are fortunate to have contractors who were ready, able and willing to get to work immediately with only a handshake.
- Alaskans know if we don't do it, there isn't going to be anyone else coming to help.

Division of Facilities Services Response Overview

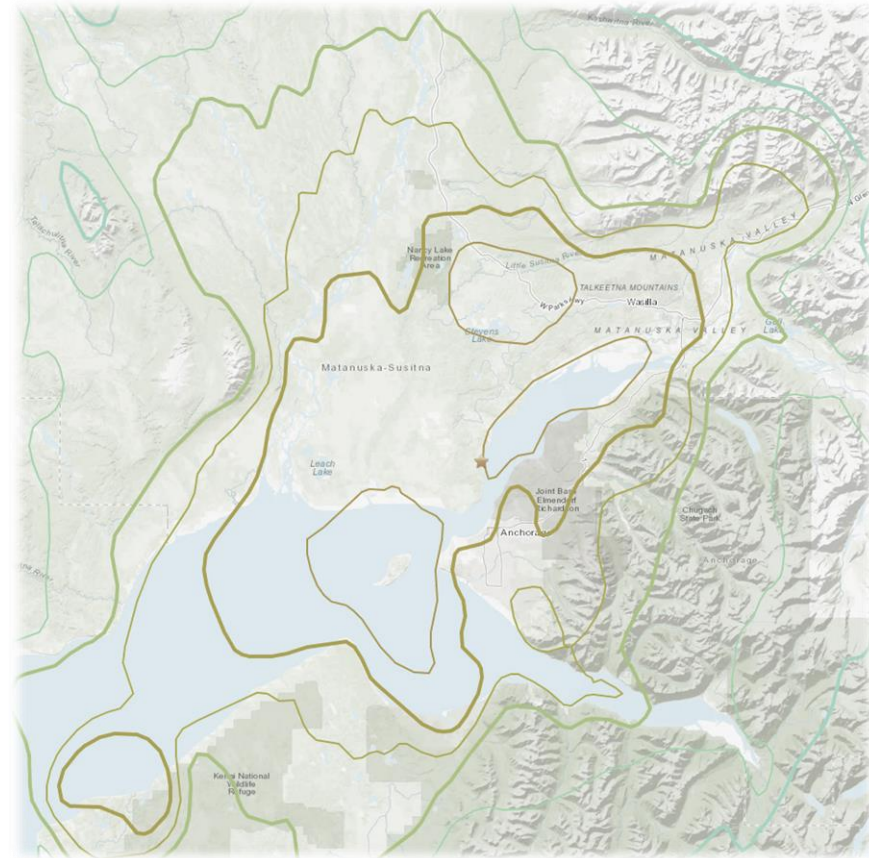
*Division of Facilities Services
provides for the design, construction, maintenance and care of state facilities*

- **Immediate Actions**

- Team safety check
- Initial rapid assessments
- Established Facilities ICS Response Team, Center & 24-hr Operations
 - Support from Anchorage, Fairbanks and Juneau personnel
 - Operations, Safety, Design & Construction disciplines

- **Prioritizing Facility Evaluations**

- Based on affected intensity zones – VII, VI, V
- Beginning with critical facilities in highest zones
- Occupied and critical facilities prioritized first
 - Such as Atwood Building, McLaughlin Youth Center, API



USGS Image

<https://earthquake.usgs.gov/earthquakes/eventpage/ak20419010/map>



Response Overview

- **Immediate Repairs**

- Initiated by facilities technicians and local contractors
 - DOT&PF Headquarters, the Annex, Boney Courthouse, and others
- Majority of buildings ready to resume operations within four days following event

- **Safety Assessments**

- Teams of contracted consultants, volunteers, and staff engineers & architects
- Following nationally recognized “ATC-20” Post Earthquake Detailed Evaluation procedures
- Conducted on **every significant** state facility in the affected high-impact areas
- Support to partner agencies other governmental entities

Timeline

Event
Day 1
Nov 30

- Incident Command Established
- Rapid assessments & repairs initiated
- Prioritizations and team assembly
- Critical detailed inspections

Day 2-6

- Continued Prioritization
- Detailed Assessments in Anchorage and Matsu Areas
- Daily stakeholder updates

Day 7-12

- Detailed Assessments on JBER and Kenai Peninsula Borough
- After Action Review

Day 13 & on

- Accounting for inspection and repair work
- Continued work with State Emergency Office and Risk Management

Response Metrics

Strong Collaboration with Partner Agencies

- **Daily stakeholder communications**
 - Critical updates and report outs
- **Detailed Safety Assessment Results:**
 - Teams inspected 369 state facilities
 - Beginning day of event and lasting 12 days
 - Inspection assistance to state leased facilities, Matsu Borough, Kenai Peninsula and others
 - Majority found to be “Green” – safe to occupy
 - 13 designated as “Yellow” Restricted Use
 - No state facilities designated as “Red”



UNSAFE DO NOT ENTER OR OCCUPY	
RESTRICTED USE	
INSPECTED LAWFUL OCCUPANCY PERMITTED	
This structure has been inspected (as indicated below) and no apparent structural hazard has been found.	
Date _____ Time _____	
<input type="checkbox"/> Inspected Exterior Only <input type="checkbox"/> Inspected Exterior and Interior	
Report any unsafe condition to local authorities; reinspection may be required.	
Inspector Comments: _____	
Facility Name and Address: _____	
Inspector ID / Agency: _____	
Do Not Remove, Alter, or Cover this Placard until Authorized by Governing Authority	

Damage & Repair Overview

Damage Summary

- For state facilities, the most significant damage:
 - DOT&PF Headquarters and Boney Courthouse – temporary repairs completed
 - DOT&PF Annex – required relocation of some staff, temporary repairs are completed but major repairs will be needed
- Majority of other state facilities in Anchorage, Mat-su, Kenai Peninsula Borough sustained relatively minor damage
- Common damage – CMU construction, ceiling grid and sheet rock cracks



Repairs

- Estimates \$6M – \$10M
- Working with Risk Management and State Emergency Office to coordinate repair work
- Timelines will vary dependent upon severity, processes and requirements of different funding sources (insurance, state/federal emergency, or other)



Moving Forward

After Action Review

- Held early December - what to sustain and what to improve upon
- For state buildings – continue to design, build and inspect to modern building codes
- Internal review of state buildings for potential risks
- Continue unification and collaboration of statewide facilities professionals to enhance response
- Continue partnership with architectural/engineering professionals and builders

Current and Next Steps

- Identifying any additional damage from the event or aftershocks
- Accounting for costs to date for emergency work
- Continue with Risk Management, Insurance and State Emergency Office
- Design and construction of repairs
- Enhancing response plan for future events





Alaska Bridge Earthquake Response

- Response Team Preparation
 - Reviewed initial ground motion maps
 - Gathered recent inspection reports & plans
 - Cold weather gear & inspection equipment
- 4 Inspection Teams
 - Each team inspected about 20 bridges per day
 - Each inspection took 15-30 minutes – Looked for:
 - Damage that might endanger public
 - Vulnerability to aftershocks
 - Documented condition with basic notes & photos

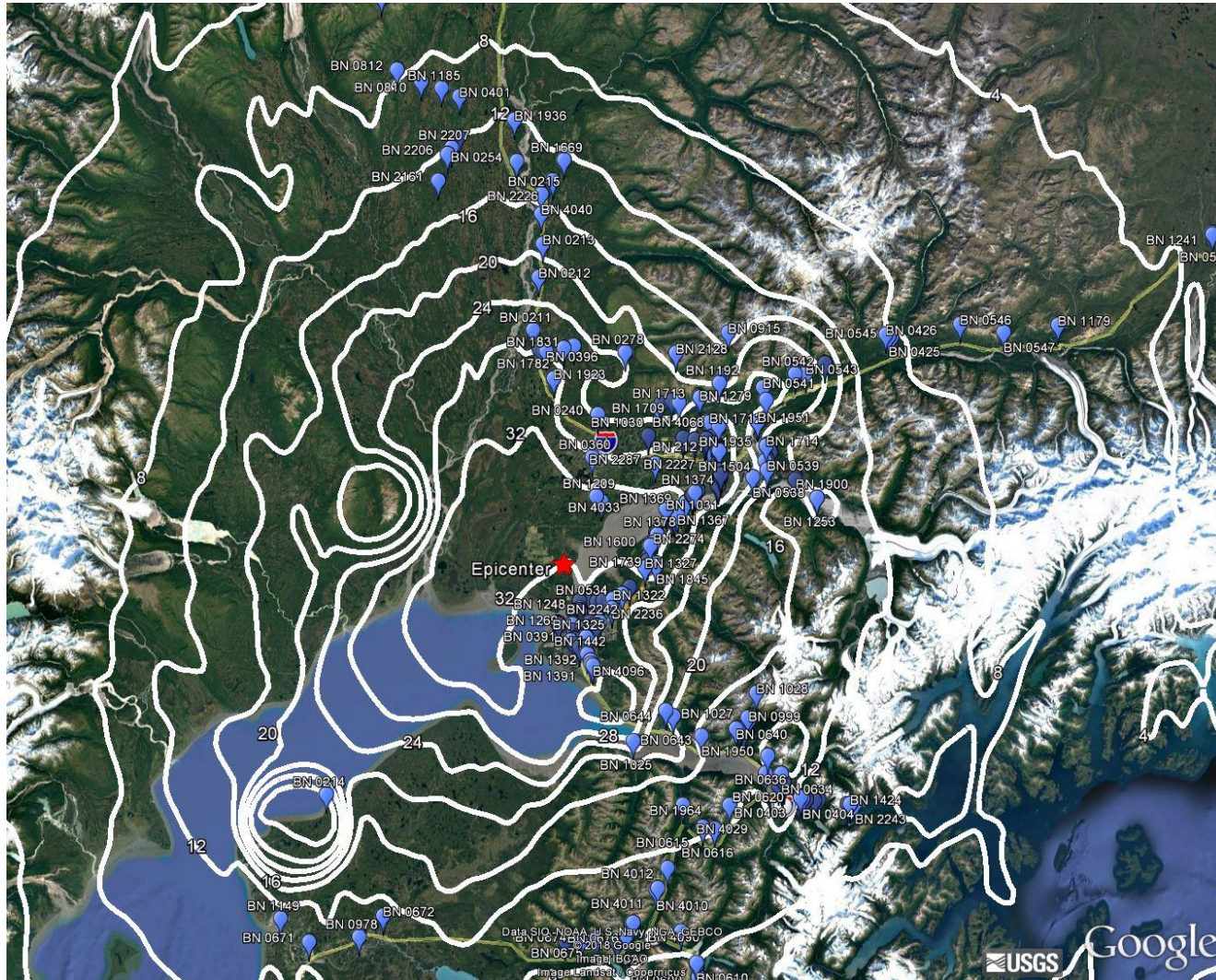




Inspection Priority

- Prioritized 300 bridge inspections based on:
 - Initial damage reports from local M&O
 - Critical routes (Glenn Highway, Seward Hwy, Minnesota Drive)
 - Age of structure
 - Previously strengthened for seismic response
 - Bridges with vulnerable details
 - Knowledge of previous issues or performance

USGS PGA Overlaid Shake Map





Inspection Findings



Slope failures in front of wingwalls & abutments



Inspection Findings



Sacrificial shear key provides lateral restraint



Bridge Findings

- ~25 bridges require some form of repair
 - More in-depth inspection required for scope of repair
 - Repair work planned to start this summer (2019)
- Continued vigilance as ground thaws and following aftershocks
 - Reliance on local maintenance forces



Alaska Bridge Earthquake Design

- DOT&PF follows National Bridge Design Specifications
 - Design Earthquake considers local fault activity
 - Earthquake that's predicted to occur once every 1000 years
 - Bridges are designed to tolerate significant structural damage yet remain stable and protect lives
 - “No collapse” in the 1000-year event
 - Repairable damage in more frequent earthquakes





A HUGE Thanks



- DOT&PF Team
- Consultants
- Contractors
- Fellow Alaskans



Alaska Department of Transportation & Public Facilities

Questions?

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