Senate Transportation Committee

Department of Transportation & Public Facilities

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Winter Operations Update

January 27, 2026

KEEP ALASKA MOVING

Modern Winter Operations: Safety First, Driven by Data

Alaska's winter conditions require timely, informed decision-making

Safety of the traveling public and field crews remains the top priority

DOT&PF connects technology, data, and operations to support winter response

Modern tools support a safer, more sustainable workforce

2025 Emergency Responses Continue to Challenge

FLOODING

January 14–15 Anchor Point Road flooding
June 14–15 Anchor Point Road flooding
June 21–26 Matanuska flooding at Old Glenn Highway & Maud Road - first breach of earthen dam
June 26–27 Matanuska flooding at Old Glenn Highway & Maud Road - second breach of earthen dam
August 8 Mendenhall River Glacial Lake Outburst Flood (GLOF), Juneau
August 26 Second Dalton Highway overtopping event:
- Milepost 112–156 closed in the morning
- MP 112–142 reopened at 4:30 pm
- MP 142–230 open with traffic control at 7:30 pm
- MP 142–144, MP 142–250, Dalton District flooding

August 26 Northern Region-wide flooding
- Parks Highway MP 239–243: Nenana Canyon River erosion
- Wiseman Airport impacts
- Eureka Road to Rampart Road damage
- Tofty Road impacts
- Nolan Road / Wiseman Road washout
- Kougarok Road MP 79.5–80: multiple erosion repairs
- Copper River Highway MP 2.4: water over roadway
- Abercrombie Creek flooding: 500' berm installed

August 28 Kobuk flooding
August 28 Allakaket flooding
August 31 Allakaket flooding damages: public facilities, roads, utilities

WASHOUTS

June 14 First Dalton Highway washout
- MP 305–356 closed at 6:25 am
- June 18 MP 305–356 reopened at 12:00 pm

August 28 Whiskey Gulch Road washout (Kenai Peninsula)
August 29 Petersville Road washout
September 13 Dalton Highway MP 110–112 "Beaver Slide" washout

AVALANCHES

January 24–February 2 Parks Highway MP 219 avalanche closure
January 24–February 4 Hatcher Pass avalanches
October 8 Dalton Highway avalanche, north side of Atigun Pass
December 3 Richardson Highway MP 209.5 avalanche impacting NR lane and half of SB lane; cleared following day
December 7 Klondike Highway closed due to small avalanche at MP 14.3
December 30 Thane Road, Juneau - closed at avalanche gate due to high avalanche hazard

LANDSLIDES

March 21–April 19 Tongass Highway Wolfe Point landslide
May 14 Skagway rockslide 2.8-mile Dyea Road
September 20 Taylor Highway landslide at MP 115

STORMS

October 8 Alaska West Coast Storm – remnants of Typhoon Halong hit northern West Coast, Norton Sound
October 12 Alaska West Coast Storm – remnants of Typhoon Halong, second storm hit Kuskokwim Sound and Yukon Kuskokwim Delta
December 7 Heavy snowfall begins in Juneau area; continues throughout the month
December 13 Atigun Pass and MP 325 winter storm, Dalton Highway closed at Atigun Pass and MP 242-245 due to blizzard like conditions and stuck tanker; Atigun Pass undergoing avalanche mitigation control; reopened later in the afternoon
December 27 Dutch Harbor Airport closed due to storm and wave action that deposited rocks onto the runway
December 28 Klondike Highway closed at 7:30am - blizzard
December 28 SE District Hoonah and SE District Gustavus airport closures due to heavy snow

OTHER EMERGENCIES

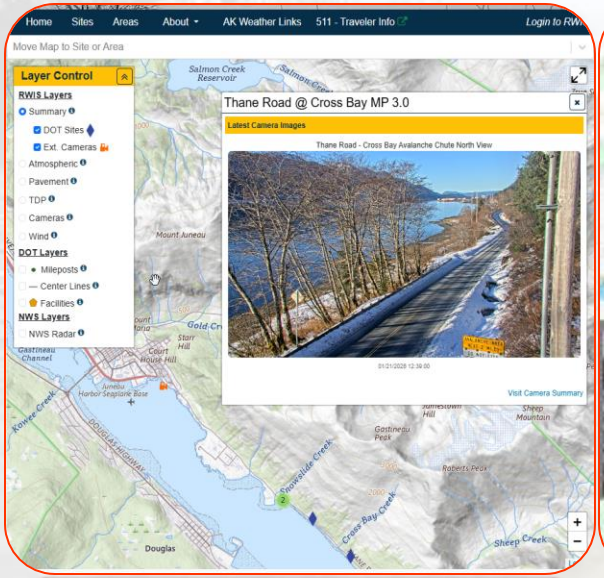
January 12 Rabbit Creek Pedestrian Bridge partial collapse
February 7 Missing aircraft in Western Alaska – DOT&PF aided with Search and Rescue
March 14–31 Sinkhole on Cohoe Loop Road
April 28 Fatal aircraft accident at Nanwalek Airport
June 19–July 15 Interior fires begin (Nenana Ridge Complex)
July 25 Bridge hit by overheight load; limited lane closure on New Seward Highway
August 30 Dalton Highway MP 142–230 full restoration completed
October 11 Dalton Highway MP 97.5 closure (Finger Mountain) due to fuel tanker blockage; reopened after a few hours following M&O work
October 30 Klondike Road Closure; severe winter weather, reopened Oct 31

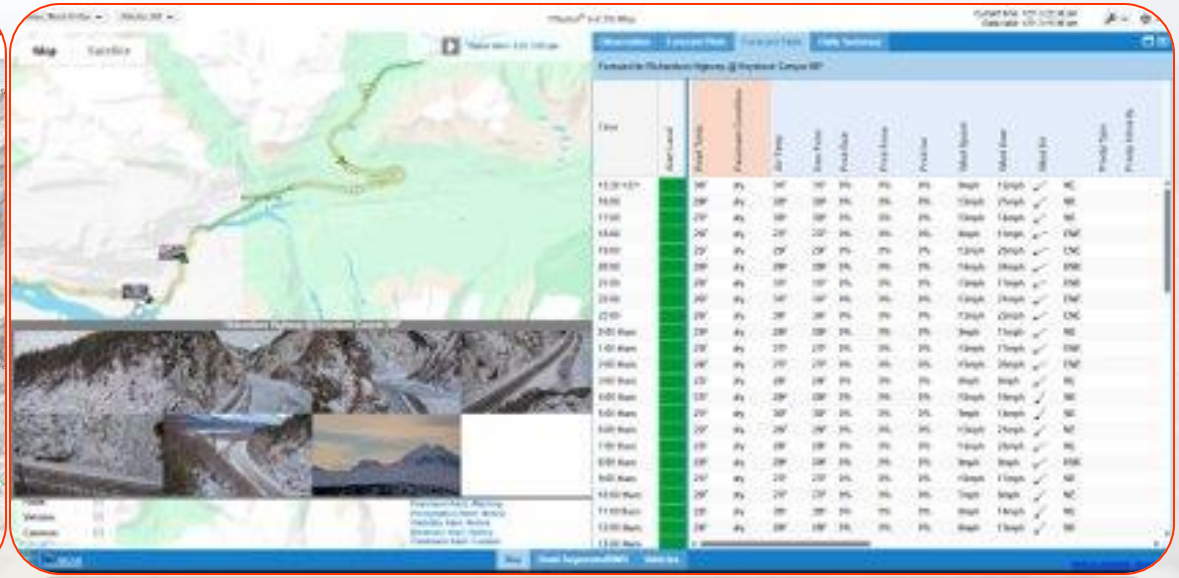
Advancing a Proactive Approach to Winter

Predictive condition analysis tools enable proactive planning and decision-making

Partnerships with other agencies expand situational awareness

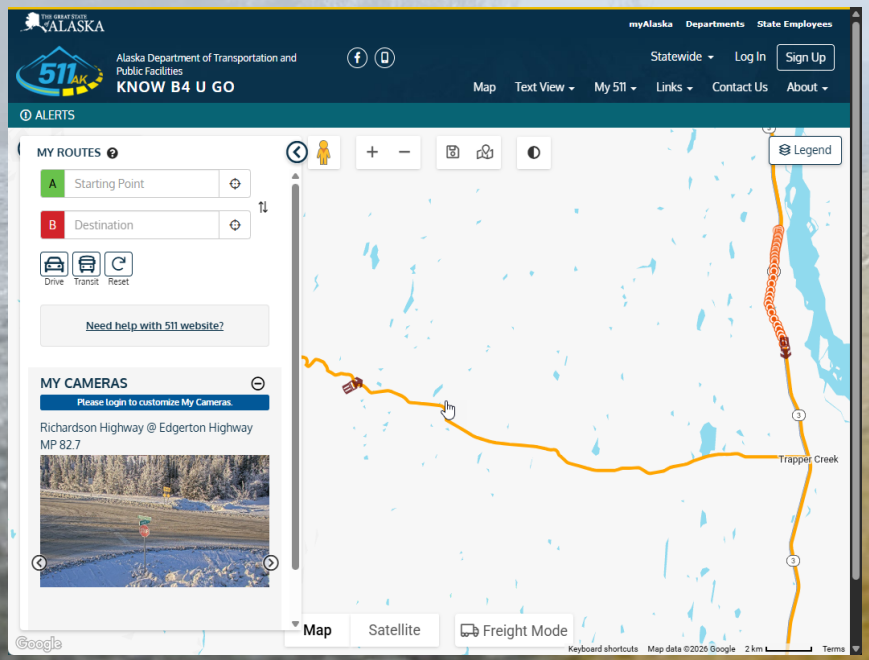
Satellite communications provide visibility into conditions previously unseen





Supporting Safer, Smarter Winter Operations

Alaska 511 & Winter Operations Dashboard provide shared visibility to 1.2 M users
Mobile Reporting Apps simplify field reporting and reduce administrative time
Road Weather Information System (RWIS) and AI-supported surface analysis improve condition awareness
Geographic Information System (GIS) integration supports routing, asset awareness, and planning



Training for the Future

Digital tools enable consistent, statewide training and operations

Shift-change and hands-on training link operational tasks to safety outcomes

Real-time system feedback shows operators the direct impact of their actions

Modern platforms support recruitment, retention, and workforce readiness

Building Capacity for Safety in Winter

Modern winter operations succeed when **technology and people advance together:**

- Continued investment in training, automation, and analytics
- Safety initiatives to support vulnerable road users
- Stronger integration across maintenance, safety, and emergency operations
- Focus on protecting people, equipment, and Alaska's communities

Winter Operations During Emergencies & Extreme Events

Winter operations data supports incident and emergency response

Coordinated reporting and analysis allows us to respond to changing conditions

A proactive approach can prevent an event from becoming an emergency

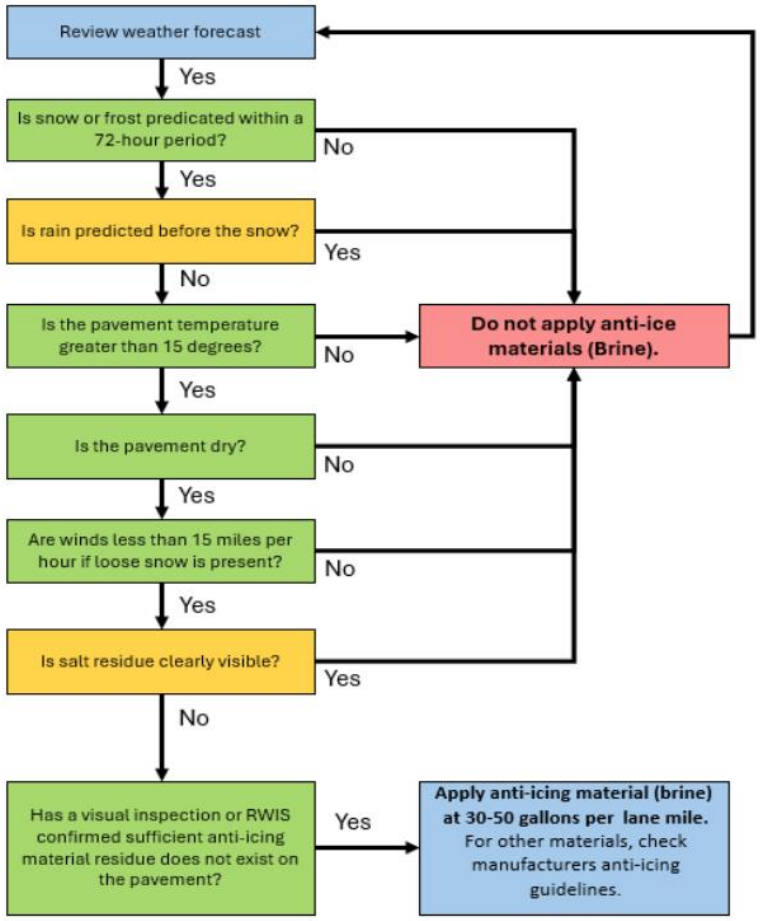
Anti-Icing and De-Icing Background

Anti-icing is the pre-treatment of roadways to keep ice and snow from bonding to the road surface when weather forecast and other conditions allow for treatment.

De-icing is treating the roadway after snowfall or ice formation to reduce adverse conditions and improve traction for the safety of traveling public.

Alternatives to chloride products explored:

- **Beet Juice:** sticky and dark color, mixed with brine, more expensive
- **Urea:** odor, vegetation growth, more expensive, and smaller temperature range for use

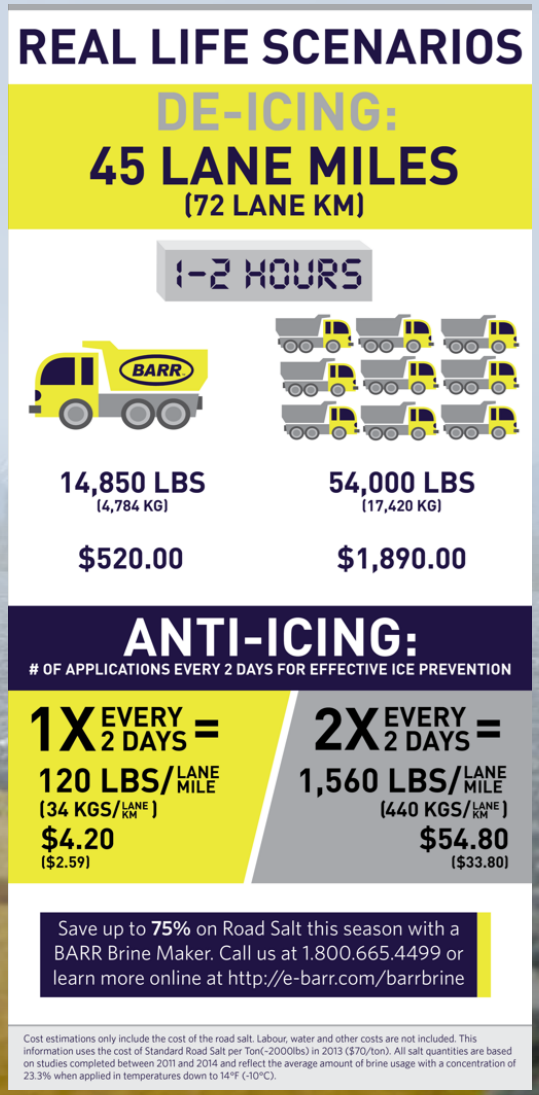


Sample brine decision tree flowchart

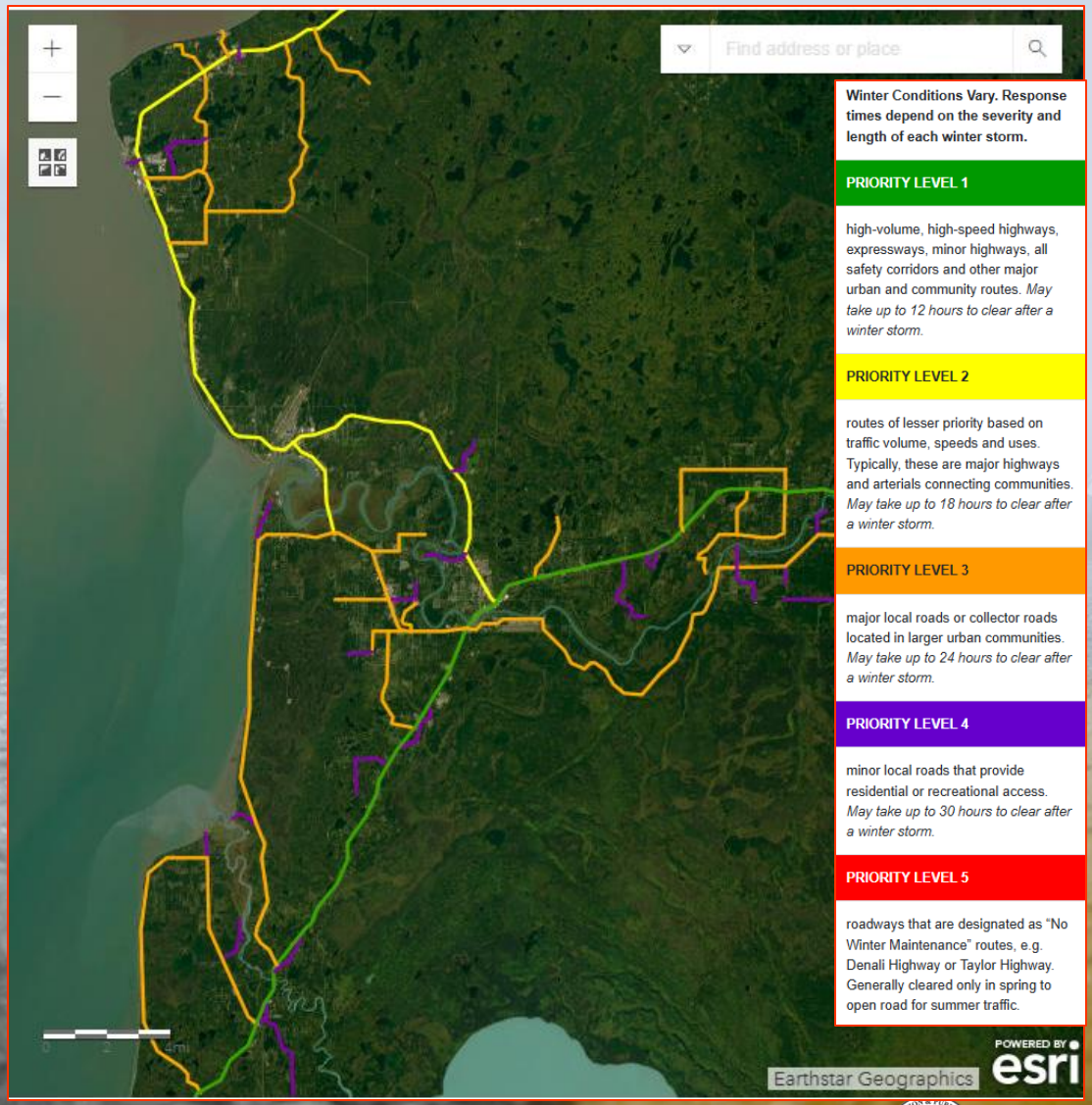
Brine Use and Budget Savings Rationale

Example marketing piece with stats that help explain the rationale that informed adoption of brine utilization, specifically considering budgetary pressures on State general funds over the last decade, of solid vs brine application and savings.

Without brine, the cost of additional salt, increased use of sand, added equipment to replace brine fleet, and new operators to conduct additional clearing would be necessary to maintain current conditions on high-speed roads.



Kenai Peninsula Spotlight - Brine Reductions



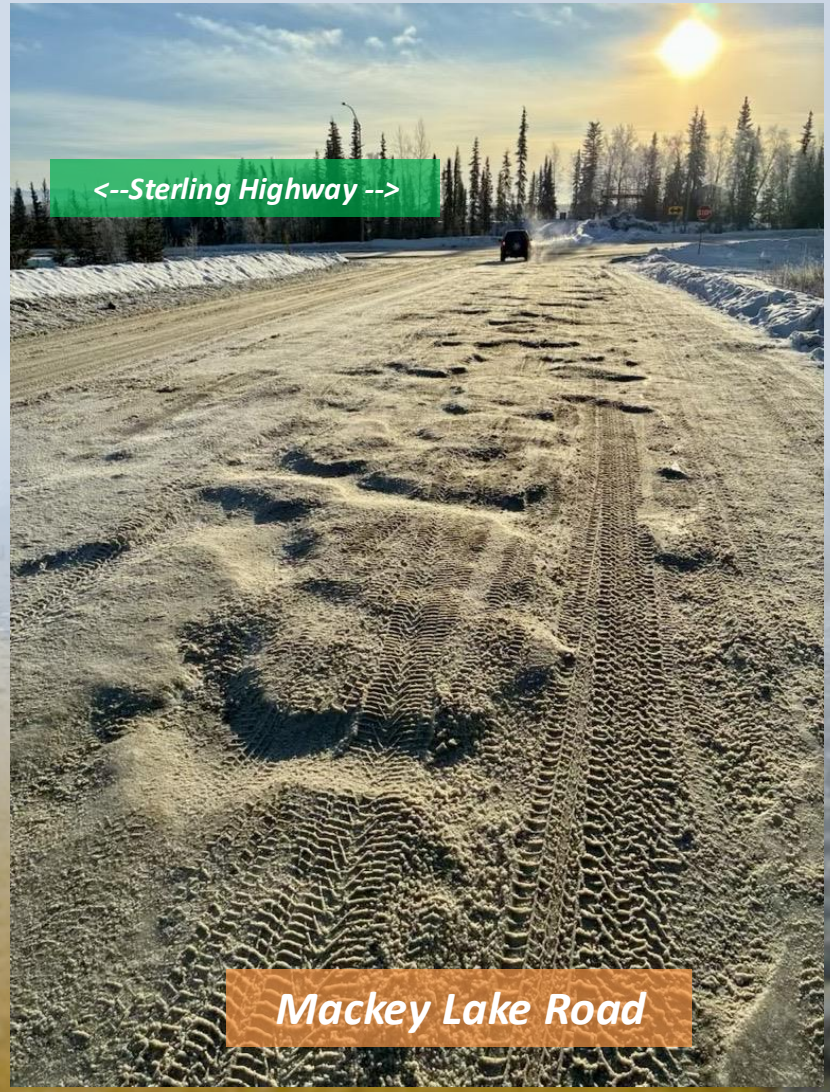
Since 2024 winter season, brine has been reduced and is no longer used on all DOT&PF roads outside of the high-speed corridors:

- Sterling Highway
- Seward Highway
- Kenai Spur Highway
- K-Beach Milepost 0-16 and Bridge Access Road

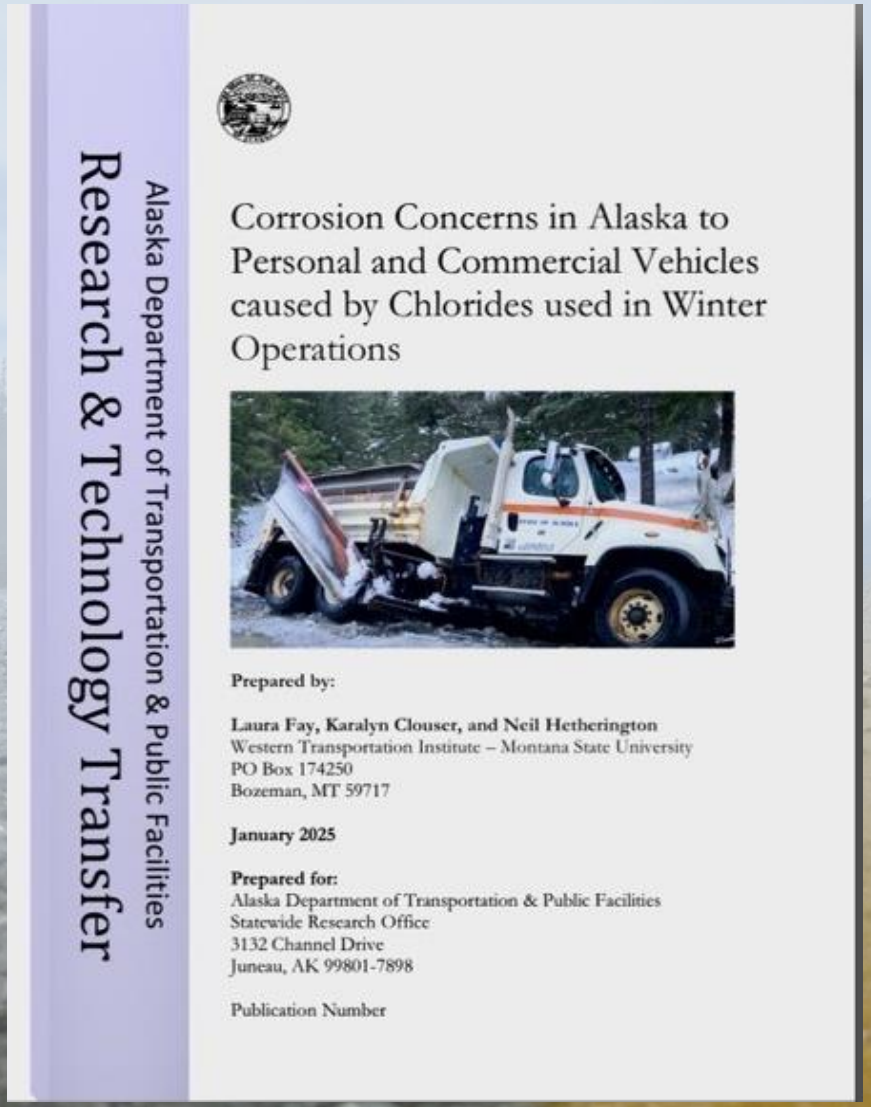
Further reductions would require resourcing of equipment and personnel.

Road Priorities and Treatment Options

Given the current resourcing of road maintenance at DOT&PF which is reflected through the winter road priority designations, plus the reality of living in the northern-most state, roads below priority level 1 (high-volume, high-speed highways) will see "wash boarding" such as this example from January 2026 of Mackey Lake Road and Sterling Highway. This is exaggerated by the elimination of brine use on this priority 3 road where pre-treatment could reduce or prevent snow bonding to the roadway through compaction and ice formation prior to operators arriving for snow removal.



Brine Literature Report



DOT&PF research conducted a literature review on corrosion to equipment and mitigation measures to assist with fleet maintenance.

Final report, released in the summer of 2025, can be found online at: https://dot.alaska.gov/stwddes/research/assets/pdf/hfhwy00223.pdf

Central Region - Snow and Ice Removal Contracts

Snow/ice removal contracts by District:

FY25 contracted costs = $548k

FY26 contracted costs to date = $164k

FY26 - Anchorage has utilized contracted services 6 times

FY26 – Mat-su utilized contracted services 6 times

FY26 - Peninsula utilized contracted services 0 times

Central Region Sidewalk Equipment

Anchorage:

4 mini/sidewalk blowers

1 tracked Bobcat and blower for wider trails

1 bobcat tool cat with blower

On order: 2 ag tractor blower heads (will help loading trucks)

Mat-Su:

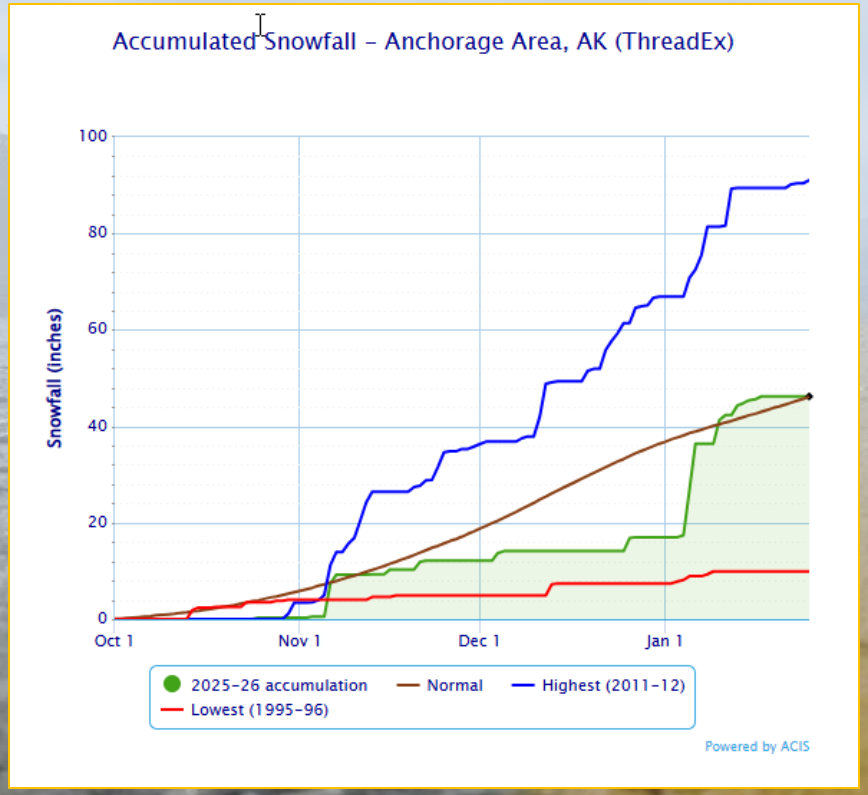
1 ag tractor with blower

Peninsula:

No sidewalk equipment

Anchorage Specific Issues: Hauling After Snowstorm

No right-of-way (ROW) for snow storage: Minnesota, Fireweed, and Seward Highway (36th and 15th) Progressively more room in order: Northern Lights, Benson and 5th Avenue



Winter 2025/2026 to date:

Minnesota hauled 4 times

Fireweed hauled 3 times

Seward (36th to 15th) hauled 3 times

Northern Lights hauled 2 times

Benson hauled 2 times

5th Avenue hauled 2 times

Central Region Snow Dumps

One snow dump site (O'Malley @ Old Seward Hwy) – requires $20k-$40k equipment rentals to constantly stack snow.

M&O coordinates frequently with MOA on snow hauls and utilizing same dump site. (MOA has more sites with more storage capacity).

M&O is finalizing approval to utilize area near existing snow dump.

Snow hauls must occur during night shifts (low traffic) and when station is adequately staffed.

MOA built a lane reduction test strip (at Anchorage wood lot).

Central Region – Challenges & Opportunities

Peninsula Specific Issues

- Brine use only on Seward Hwy Milepost (MP)0-73, Sterling Hwy, Kenai Spur Hwy MP 0-12.5, Bridge Access, and K-Beach MP 16-22
- Extreme difficulty retaining operators in FY26, currently 10 of 47 operator positions are vacant

Mat-su Specific Issues

- Multiple wind events – rough estimate of $300k for repairs
- Training up new staff (this can be said for all districts)

Southwest Specific Issues

- Typhoon response - material storage at Bethel Airport
- All operator positions are now two weeks on / two weeks off – increased costs due to OT, travel, and house lease
- Federal Aviation Administration (FAA) Tower closure expected for next 2 months due to needed repairs – M&O has been and will continue to coordinate with FAA on resolutions and how best to move forward

Northern Region – Winter Performance

Total events: 151

Total number of targets: 234

Total target condition achieved: 168

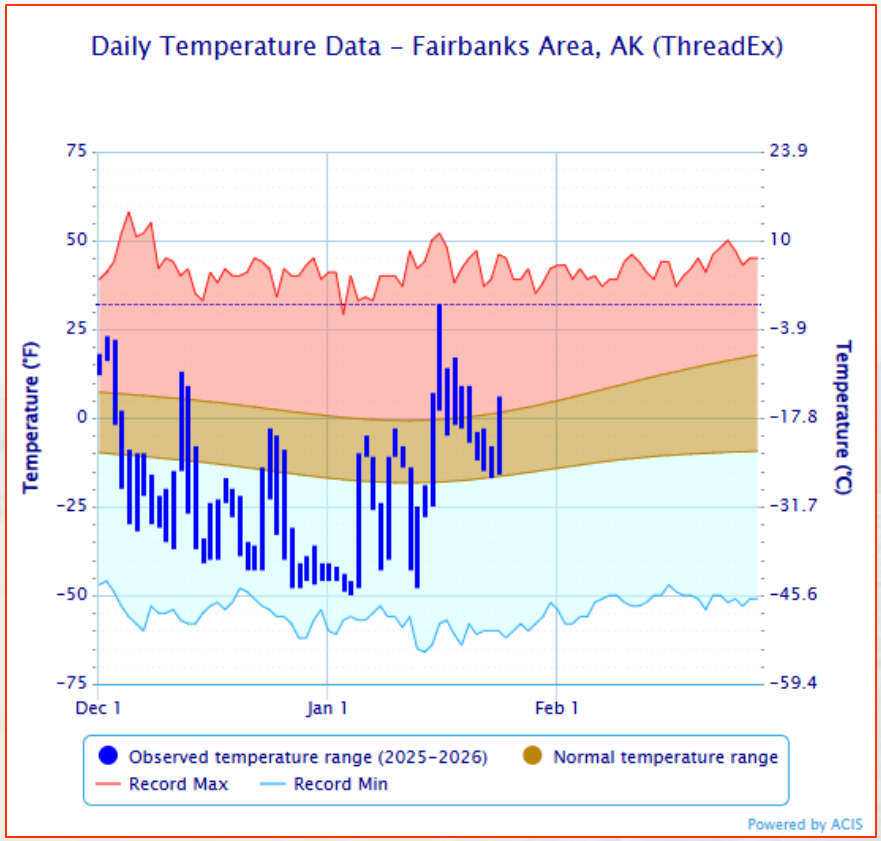
% time target condition achieved: 72%

Sidewalk Equipment:

Two Holder sidewalk tractors

One Bobcat S66 skid steer loader

One CAT 265 compact track loader



Northern Region – Winter Contract Usage

FY23 – Total expenditures - $257,967.50

FY24 - Total expenditures - $170,000.00

FY25 - Total expenditures - $292,998.75

FY26 – Fairbanks utilized roadway contract X 4

FY26 – Fairbanks utilized sidewalk contract X 5

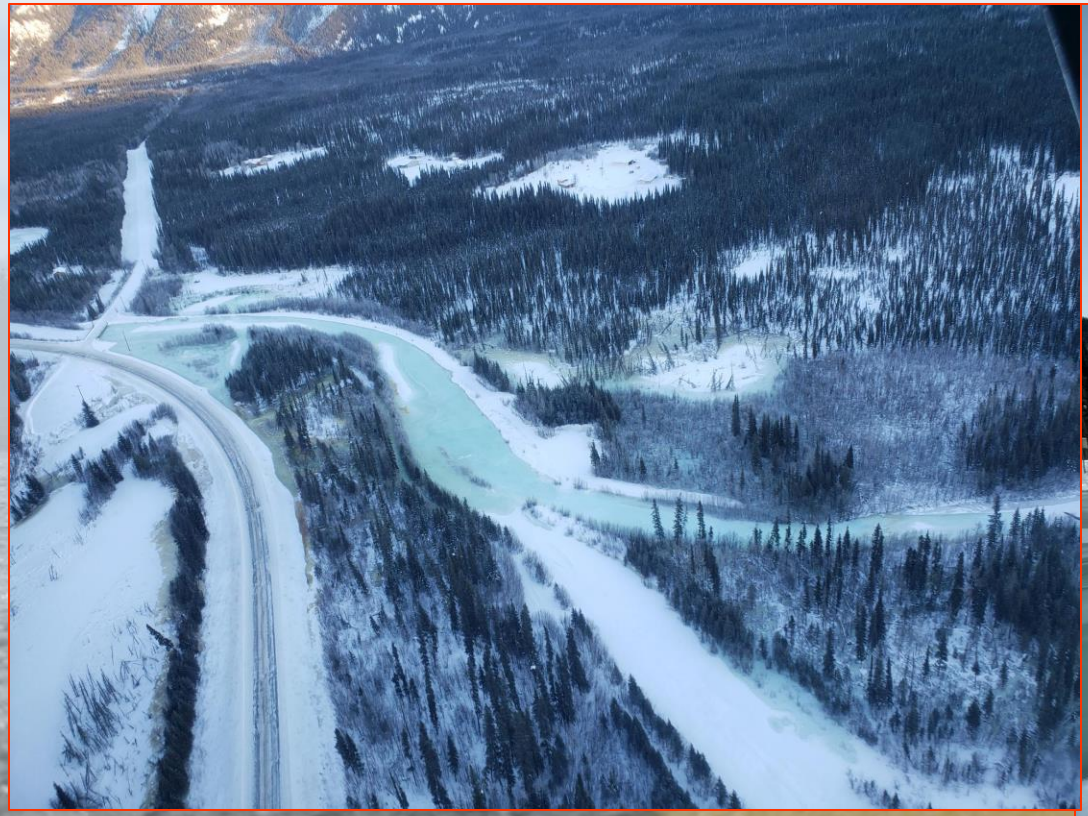
FY26 – Cordova utilized roadway contract X 1

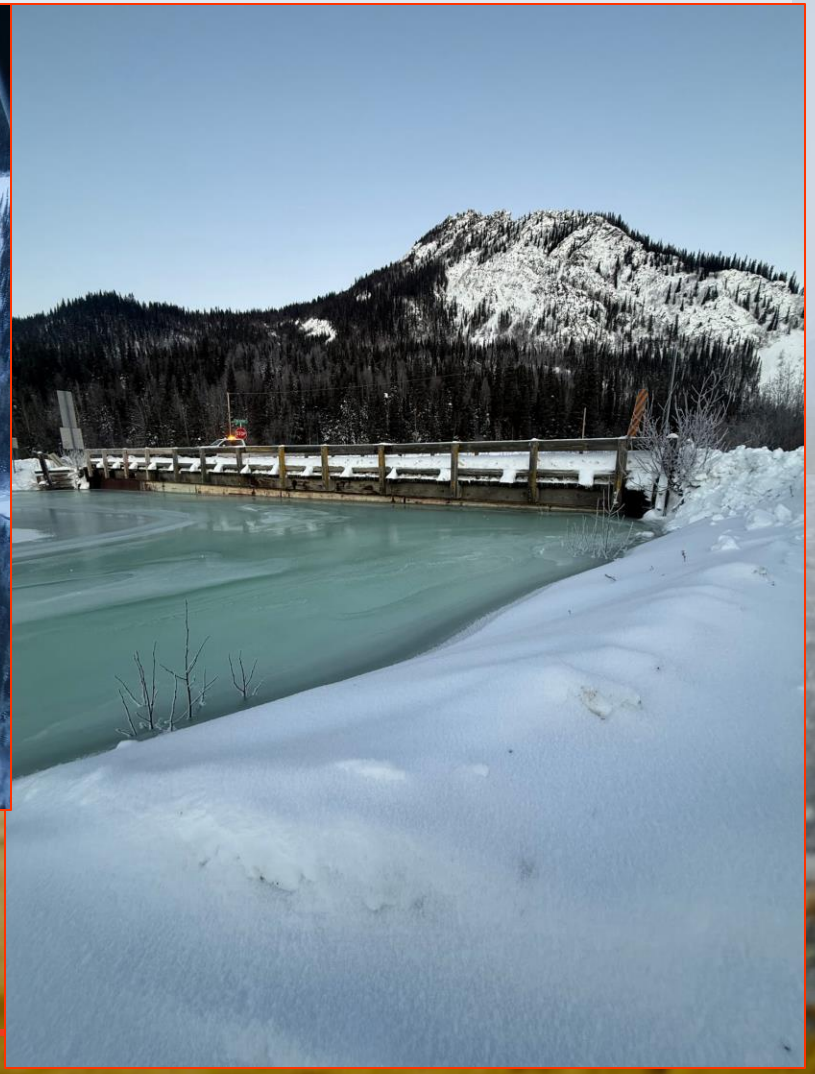
Northern Region Challenges & Opportunities

Maintenance District	Equipment Operator Positions	Vacancy Rate as of Jan. 16, 2025	Vacancy Rate as of Jan. 21, 2026
Anchorage	46	2	2
Matanuska-Susitna	34	1	2
Peninsula	46	5	5
Southwest	19	1	4
Dalton	63	14	2
Denali	22	4	2
Fairbanks	54	6	4
Tazlina	35	1	2
Tok	34	11	8
Valdez	26	8	8
Western	30	6	7
Kodiak	32	3	4
Southeast	54	3	3

Northern Region Challenges & Opportunities

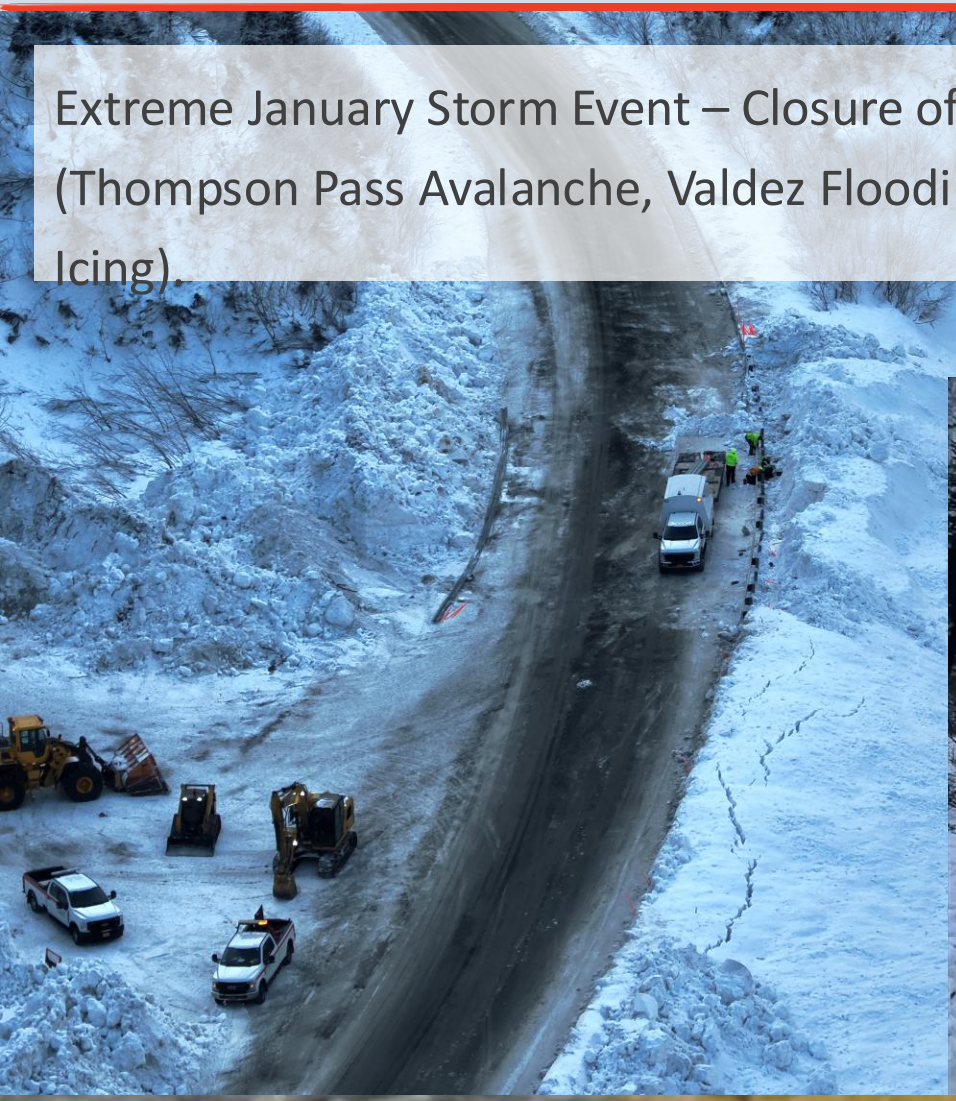
Extreme Cold Weather – Overflow/water management





Northern Region Challenges & Opportunities

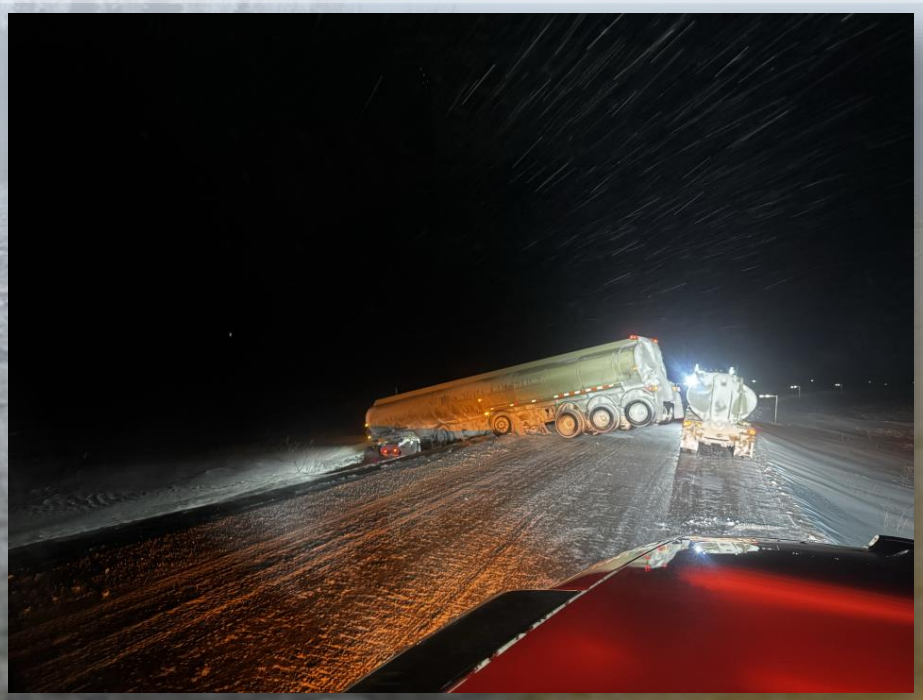
Extreme January Storm Event – Closure of Richardson Highway two days (Thompson Pass Avalanche, Valdez Flooding, Isebel Pass/Trim Camp Roadway Icing).



Northern Region Challenges & Opportunities

Dalton Highway Closures -Stranded vehicles and Accidents:

- Limited commercial support for response efforts
- Extended Response times
- Limited Communications



Southcoast 2026 Winter Performance

Total events: 69

Total number of targets: 131

Total target condition achieved : 113

% of time target condition achieved – 86.3%

Southcoast – Winter Contract Usage

FY25 contracted costs = $9,160.00

FY26 contract cost expended through 12/31/2025 = $23,643.00

FY26 - Juneau contracted services for sidewalk snow removal. Contract award not to exceed $170K

FY26 – Juneau contracted services for snow haul. (Not to exceed $160K)

Spotlights: Unalaska Airport Closure

High winds and heavy rains

During height of Cod fishery

NW Wind gusts over 120mph

Wave action directed at end of Runway 13

Damaged light cans, asphalt undercut 1.5’

Rocks deposited on the runway

State M&O repaired, emergency contract for lighting system repairs

Total airport closure time: 72 hours

Spotlights: Juneau Record Setting Snowfall

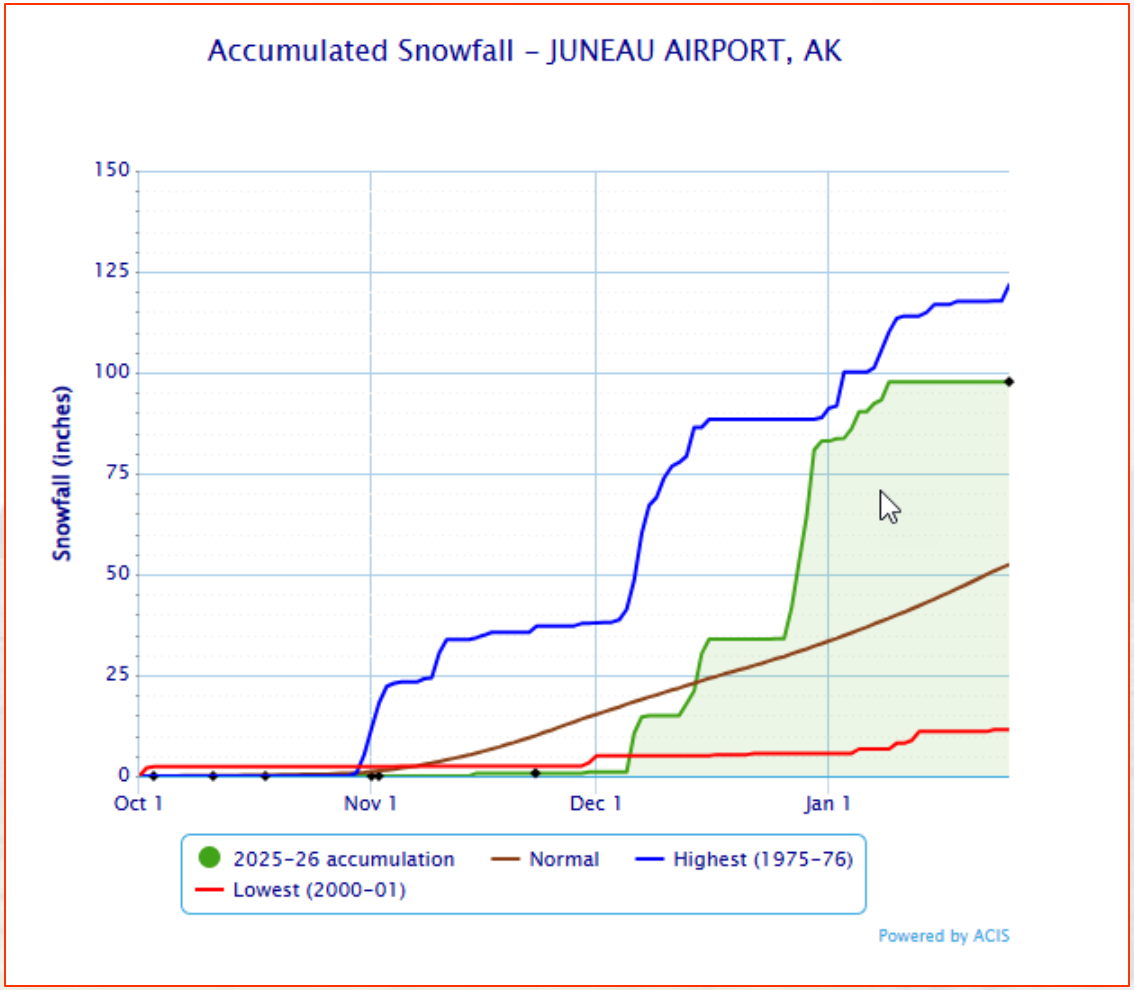
Dec. 27, 2025: 7.8”

Dec. 28, 2025: 11.4”

Dec. 30, 2025: 16.4”

<u>Total Storm Snowfall 47.7”</u>

New Monthly Snowfall Record for December – 80.7”



Southcoast Spotlights: Record Setting Storm

Record snowfall in Skagway and Haines required deployment of additional State plowing resources.

Severe winter conditions caused repeated closures on key corridors, including 287 hours on the Klondike Highway and 43 hours on the Haines Highway due to blizzards, extreme cold, and avalanches.

Emergency snow-clearing contracts were implemented to maintain access and restore operations as conditions allowed.

Southcoast: Record Setting Snowfall

Disaster Declaration:

Governor issued State disaster declaration on January 6, 2026.

Team Approach:

Division of Facilities services employees were brought down at the request of the State Emergency Operations Center (SEOC) to assist with clearing critical CBJ building roofs.

DOT&PF avalanche specialist supported City and Borough of Juneau (CBJ) by providing additional avalanche monitoring capabilities using drones and Light Detection and Ranging (LiDAR)

Southcoast Avalanche:

First successful detection of avalanches by DOT&PF using new technologies.

LiDAR scan of region is occurring to better document snowpack distribution and avalanche occurrence.

Drone use for additional hazard monitoring.

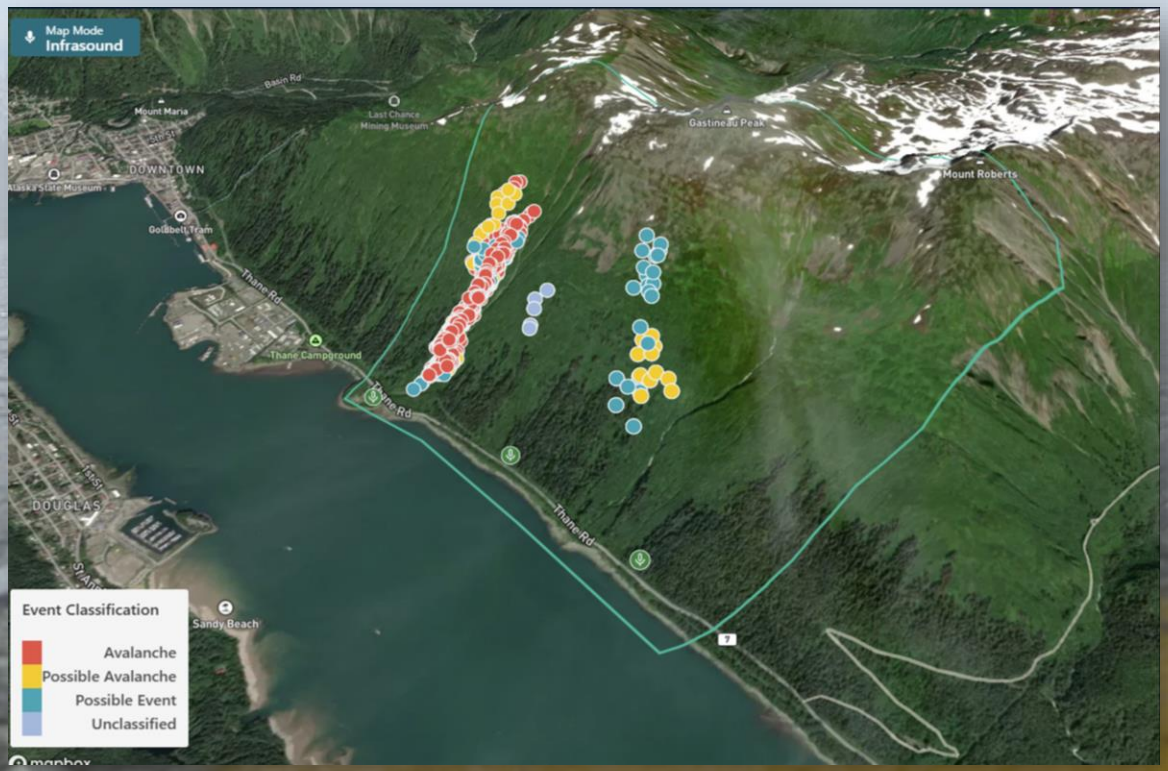
Spotlights: Juneau Record Setting Snowfall

Additional State staff and equipment resources sent to Juneau to support

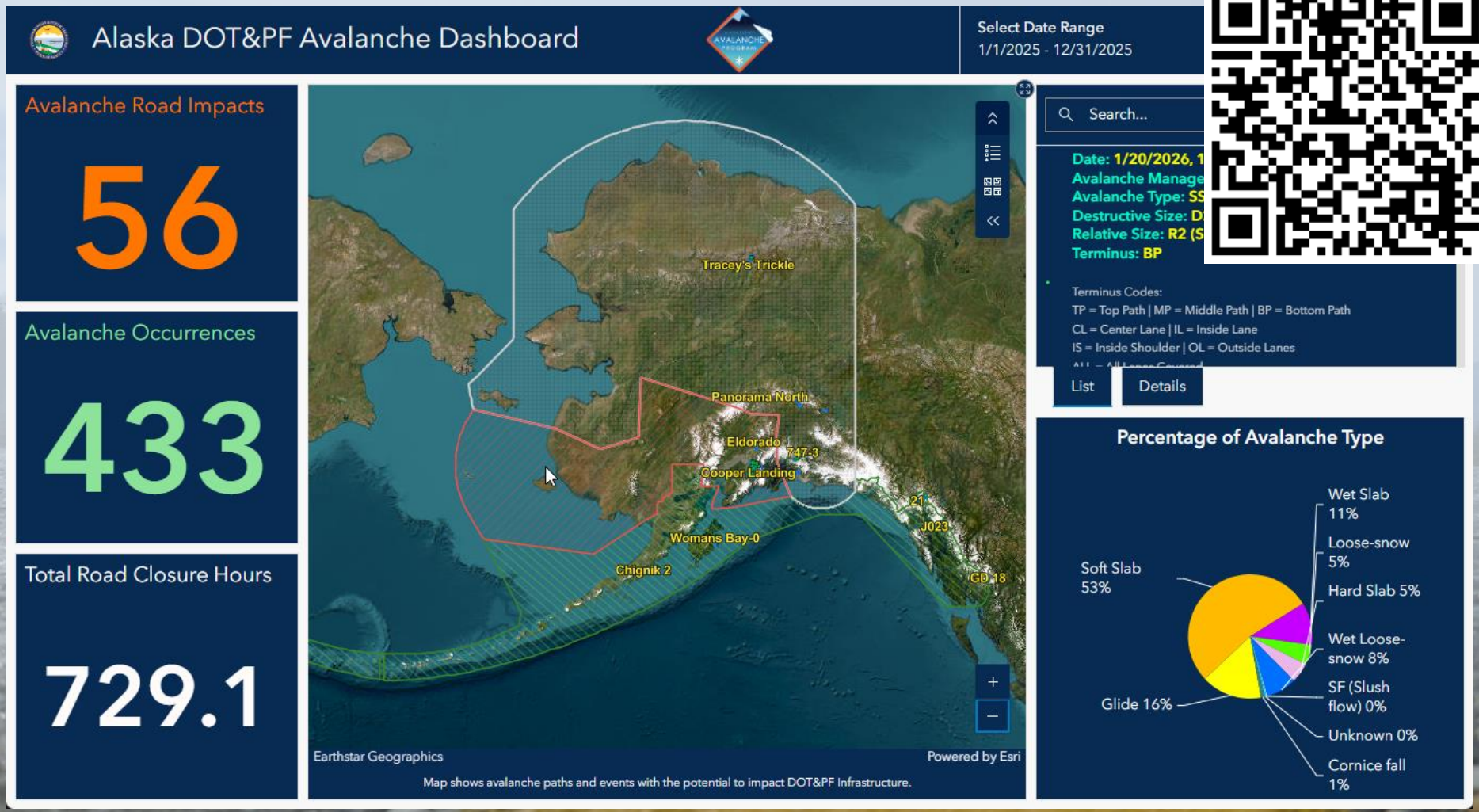
Emergency contracts established for snow clearing activities

Thane Road was closed multiple times for avalanche hazard

Total closure times year to date (YTD) Thane Road: 93 hours



Focus Area: Avalanche Detection and Mitigation

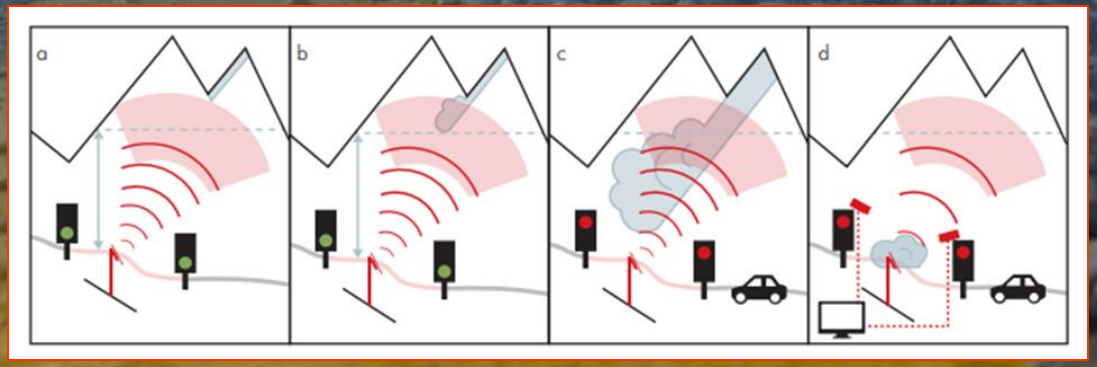


January – December 2025

Modernizing Avalanche Detection

Doppler radar

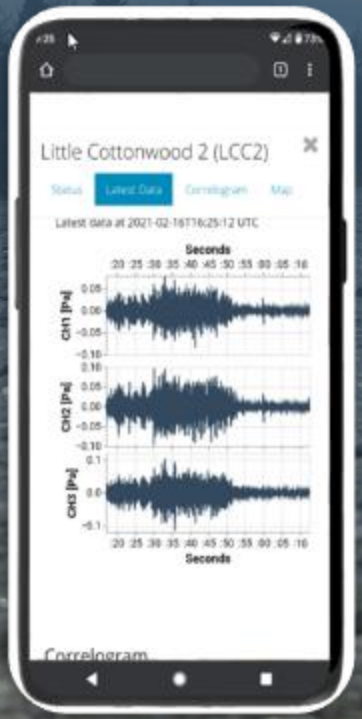
- Installation January of 2025
- MP 21 Seward HWY
- Remote detection and alerting
- Automated signals for traffic



Modernizing Avalanche Detection

Infrasound detection System

- Installation February of 2025
- MP 99 Seward HWY
- Remote detection and alerting

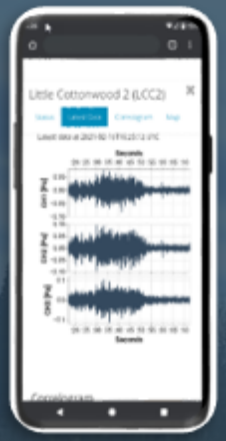


Modernizing Avalanche Response

Mobile Boom Whoosh

- Arrives in February of 2025
- Recharge in 20 seconds and fire up to 30 times
- Decreases safety risk to staff and the public
- Decreases road closure time

Avalanche requires a multipronged approach



Focus: State Equipment Fleet

Overall slight improvement on vacancies

Improved ability to maintain equipment, better winter prep, and reduce down time

Six positions filled in last 90 days- full impact still to be realized for new additions

Districts that are biggest challenge - Western, Southeast, Kodiak Aleutian, Fairbanks

Equipment Notes/highlights

Expanding/diversifying of snowblower fleets to include Ag Tractors, Skidsteers, Loader Mount Blowers in areas where we previously only had highway/airport blowers; more diversified tools in M&O's tool box

18 new plow trucks put in service in last 12 months

30 more replacements being manufactured with expected delivery in next 12 months

State Equipment Fleet Vacancy Rates

Maintenance District	Total Mechanic Positions	Vacancy Rate *(as of Feb 3, 2025)*	Vacancy Rate *(as of Jan 22, 2026)*	Heavy Duty Mechanic Positions	Vacancy Rate *(as of Feb 3, 2025)*	Vacancy Rate *(as of Jan 22, 2026)*
Anchorage	19	26%	21%	10	50%	30%
Matanuska-Susitna	10	0%	0%	7	0%	0%
Kenai Peninsula	10	20%	0%	9	22%	0%
Southwest	5	40%	0%	5	40%	0%
Dalton	13	23%	0%	13	23%	0%
Denali	4	25%	25%	4	25%	25%
Fairbanks	18	27%	28%	11	55%	37%
Tazlina	7	57%	14%	6	50%	17%
Tok	8	0%	13%	8	0%	13%
Valdez	4	50%	25%	4	40%	25%
Western	8	50%	62%	8	50%	62%
Kodiak/Aleutian	5	20%	40%	5	20%	40%
Southeast	13	46%	46%	12	50%	50%
Total/Average	124	28%	21%	102	33%	25%

Thank You.

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Cover photo: The Alaska Range, Richardson Highway.
By Dennis Bishop, Alaska DOT&PF

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