

February 20, 2025



Senate Transportation Committee

Winter Snow Operations and State Equipment Fleet

Alaska Department of Transportation & Public Facilities

Andy Mills
Special Assistant,
Commissioner's Office

Jason Sakalaskas
Chief, Maintenance & Operations
Northern Region

Burrell Nickeson
Manager, Maintenance & Operations
Central Region

Brad Bylsma
Director,
State Equipment Fleet

Christine Langley
Director,
Data Modernization and Innovation Office



MAINTENANCE AND OPERATIONS

11,894 Lane Miles
80 Maintenance Shops

ROADS/HIGHWAYS

M&O STATIONS

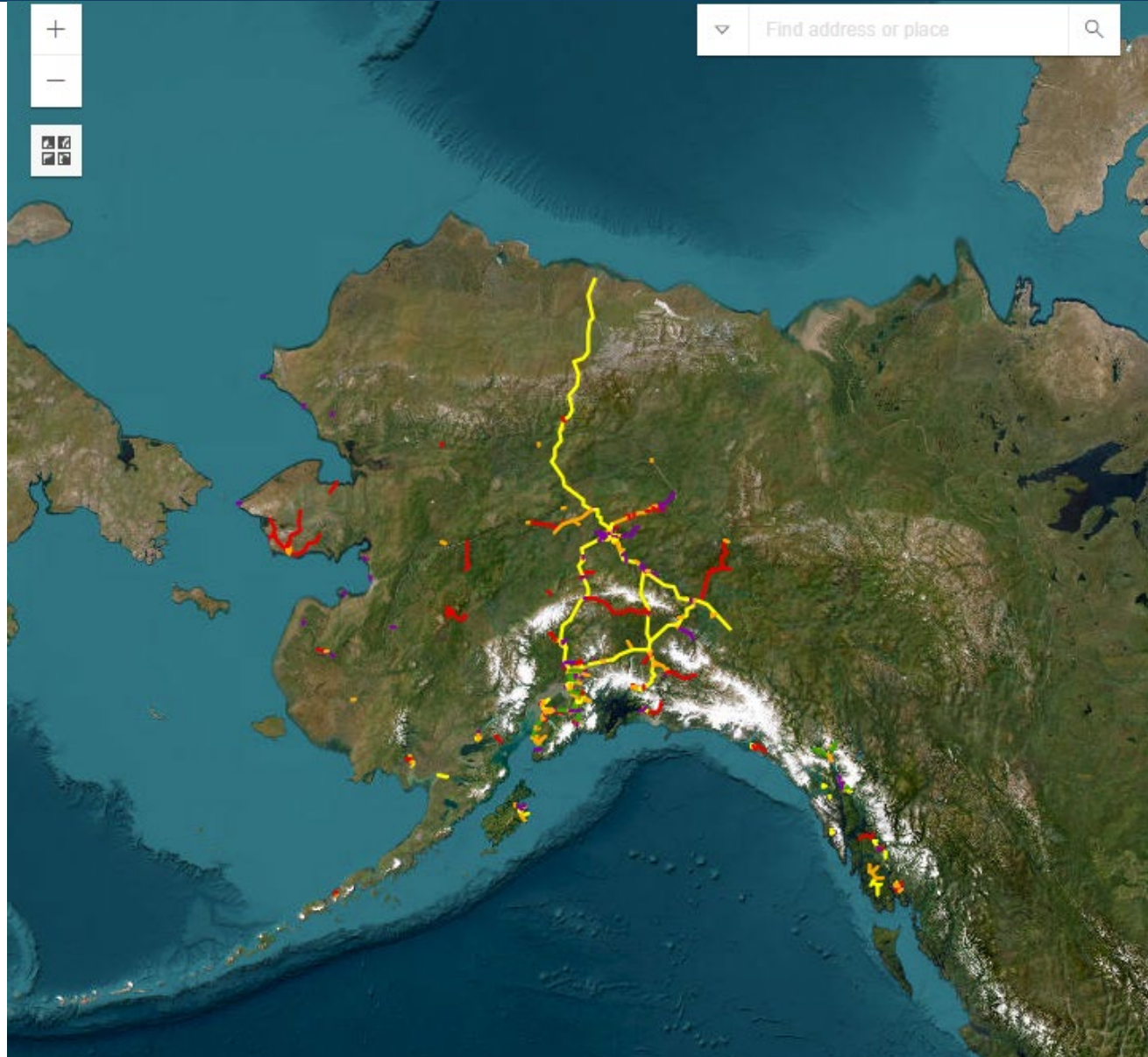
AIRPORTS

MARINE HIGHWAY



ROAD PRIORITY MAP

In 2022, DOT&PF reported, pursuant to legislative intent language, on how the department establishes and reviews winter road maintenance priorities.



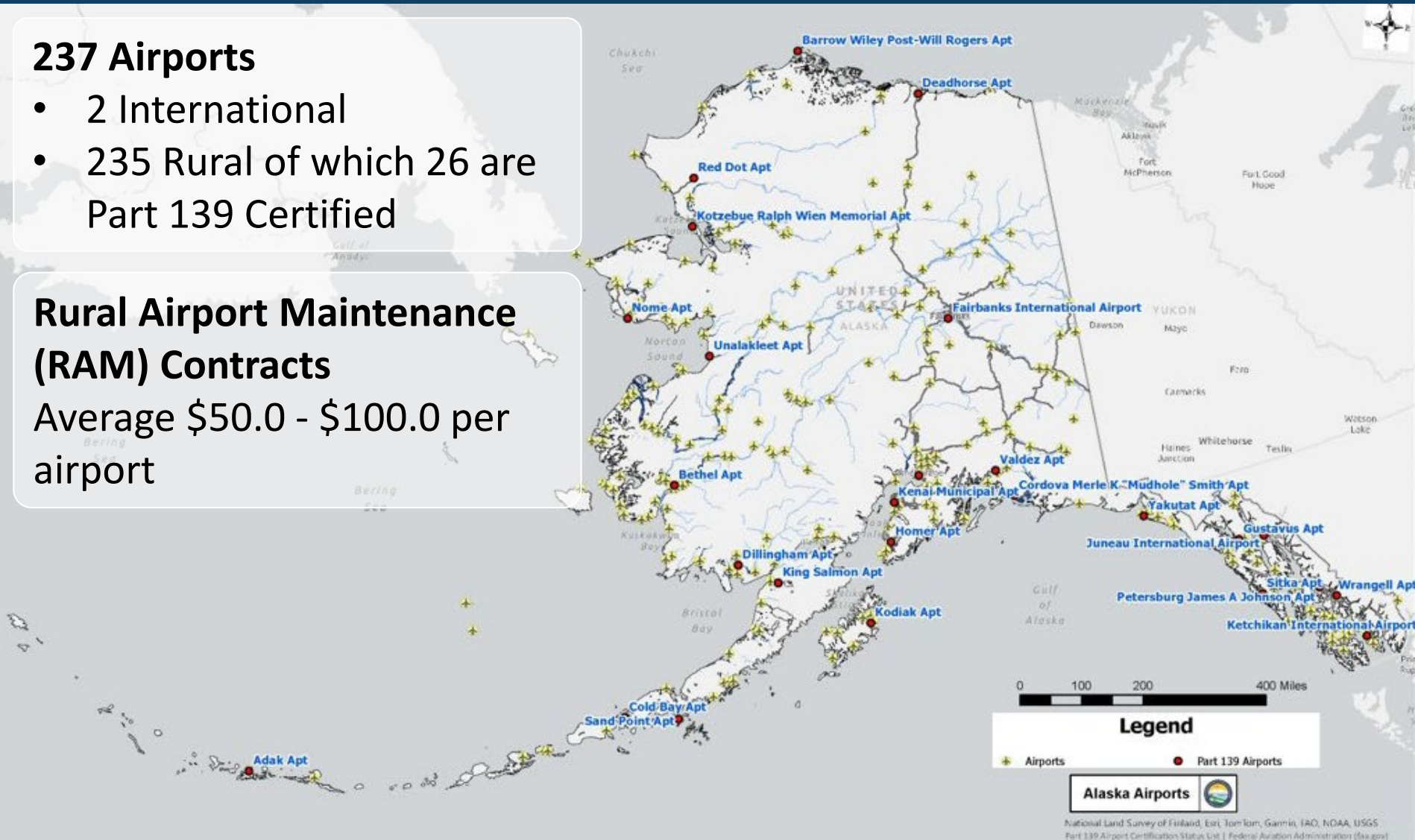
MAINTENANCE & OPERATIONS – AVIATION

237 Airports

- 2 International
- 235 Rural of which 26 are Part 139 Certified






Rural Airport Maintenance (RAM) Contracts

Average \$50.0 - \$100.0 per airport



~82% of communities in Alaska rely on aviation as their only means of access

WINTER OPERATIONS

Category	Condition	Description	Illustration
A	Good Winter Driving Conditions	Bare pavement, good visibility, snow removed from lanes and centerline, acceptable path widths	
B	Fair to Good Winter Driving Conditions	Some lane blockage, icy patches, snow cleared from the traveled way, generally good traction	
C	Fair to Difficult Winter Driving Conditions	Passable roads, standing water or loose snow, patches may cover some lane markings, slow traffic movement	
D	Difficult to Very Difficult Driving Conditions	Challenging travel, moderate snow accumulation, substantial traffic delays	
E	Hazardous Winter Driving Conditions	Travel not advised, considerable snow accumulation, roads may be icy, poor traction, extremely poor conditions	

EMERGENCY RESPONSES: JULY 2024 – JANUARY 2025

July 2024

- Glenn Highway MP 93 – Mudslide
- Grapefruit Fire Complex Response – Elliott Highway Closure
- Elliott Highway MP 51 – Closure due to flooding
- Glenn Highway MP 76 – Flooding
- Seward Highway MP 113 – Landslide

August 2024

- Suicide Basin Glacier Release – Mendenhall River Flooding
- Seward Airport and Nash Road – Flooding
- Fire at Juneau Seven-Mile
- Williamsport Pile Drive – Landslide and Flooding
- Petersville Road MP 33 – Landslide
- McCarthy Road MP 2 – Landslide
- Western Alaska – Storm
- Ketchikan – Landslide

September 2024

- Richardson Highway MP 12-15 – Large rocks in southbound lane
- Noatak River – Erosion
- Glenn Highway North Peter's Creek – Sinkhole

October 2024

- Ketchikan – Landslide across Reville Road
- Edgerton Highway MP 29 – Landslide
- Glenn Highway MP 73 – Boulders
- Fairbanks Area – Winter Ice Storm
- Western Alaska – Storm:
 - Gambell Airport – Closed
 - Nome Council – Closed (MP 16-17 debris, MP 23 erosion and log debris, MP 25 breach)
 - Kotzebue – Flooding, airport overtopped, airport closed
 - Flooding in: Shishmaref, Unalakleet, Shaktoolik, Numan Iqua, Kotlik, Hooper Bay, Scammon Bay, Chevak, Alakanuk, and Gambell
- Dillingham – Ice Storm
- South Central – Snow and Ice Storm

November 2024

- Homer Spit – Storm, erosion, overtopping
- Ninilchik – Erosion

December 2024

- Southeast – Snow and Ice Storm
- Gustavus and Cordova Airports – Closed
- Klondike Highway – Closure
- Anchor Point – Flooding
- Gustavus Airport – Closed
- Homer – Ice Storm, office closure

January 2025

- Anchorage – Ice storm, freezing rain
- Southcentral – Winter storms
 - Richardson Highway MP 12-46 – Closure
 - Rabbit Creek – Pedestrian bridge damage
 - Anchorage International Airport – Diversions
 - State Office – Flooding
 - Anchor Point – Flooding
- Fairbanks – Rainstorm
- Parks Highway MP 219 – Avalanche



Alaska Department of Transportation & Public Facilities

January 27 at 12:50 PM · 🌐

Jan. 27 #SouthcentralAlaska: We cannot overemphasize how odd the weather has been for the past 60-72 hours. What made matters worse was the early morning shift back to snow--the warmer asphalt conditions ensured that it became ice almost instantly. Our crews worked throughout the weekend to thaw culverts, clear debris, and patch the growing number of potholes (asphalt, ice and water are always a bad combo). They've switched back as quickly as they can to sanders and graders.... See more



👍 143

12 comments 37 shares



HOMER SPIT STORM DAMAGE

November 16, 2024



Storm Impact

- Damaged by two storms
- High tides, strong winds, and high surf caused rocks, debris, and erosion

Emergency Response

- Homer Police & DOT&PF closed the road and issued public notifications
- Cleanup and repairs began immediately

Restoration Efforts

- Cleared debris and repaired roadway
- Placed riprap to reinforce the structural section
- Reopened to two-lane traffic after three weeks of repairs



RABBIT CREEK PEDESTRIAN BRIDGE RESPONSE

January 12, 2025

Incident Overview

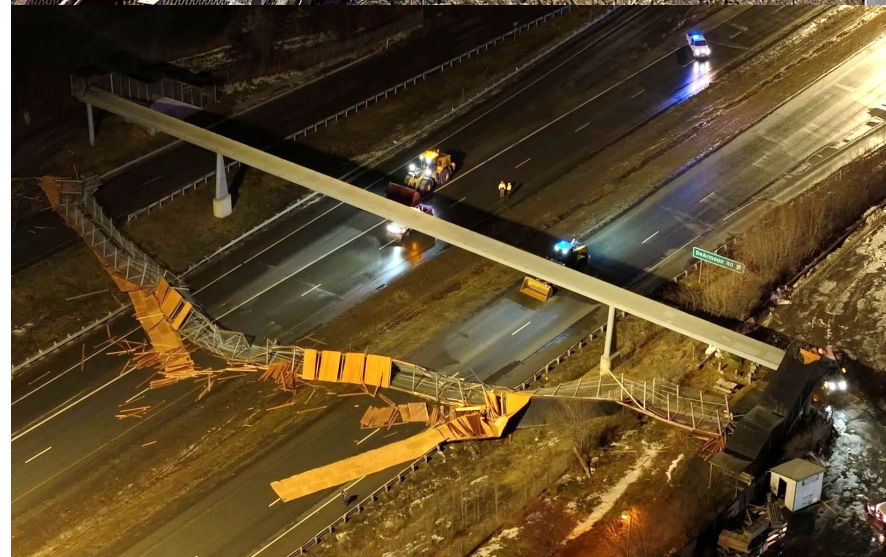
- 2:30 a.m. – DOT&PF maintenance worker reported debris on Seward Highway
- DOT&PF & Anchorage Police Department closed the roadway for safety

Response Actions

- Removed fallen decking and caging from the highway
- Used loaders and sweepers to clear debris
- Stationed personnel on-site to secure the area

Structural Assessment

- Bridge engineers inspected the superstructure
- Confirmed structurally sound & intact



THOMPSON PASS RESPONSE

January 11 and 26, 2025

January 11 Storm Impact

- Over 108 inches of snow accumulated
- Crews conducted avalanche control to ensure safety before reopening

Richardson Highway Milepost 18-46 Closure

- Closed: January 26
- Reopened: January 27

Snow and Avalanche Mitigation

- Cleared a naturally occurring avalanche (7-8 feet of snow)
- Continued plowing operations to restore full access



Two young Alaskans were stranded in the extreme conditions in Thompson Pass during the storm. Maintenance crews brought them to the camp for the night to ensure their safety.

"I want to thank whoever was driving the plow Cat that rescued my kid..."



AVALANCHES

AVALANCHES AND HIGHWAY CLOSURES

January 1 – December 31, 2024

AVALANCHE ROAD
IMPACTS

32

AVALANCHE
OCCURENCES

292

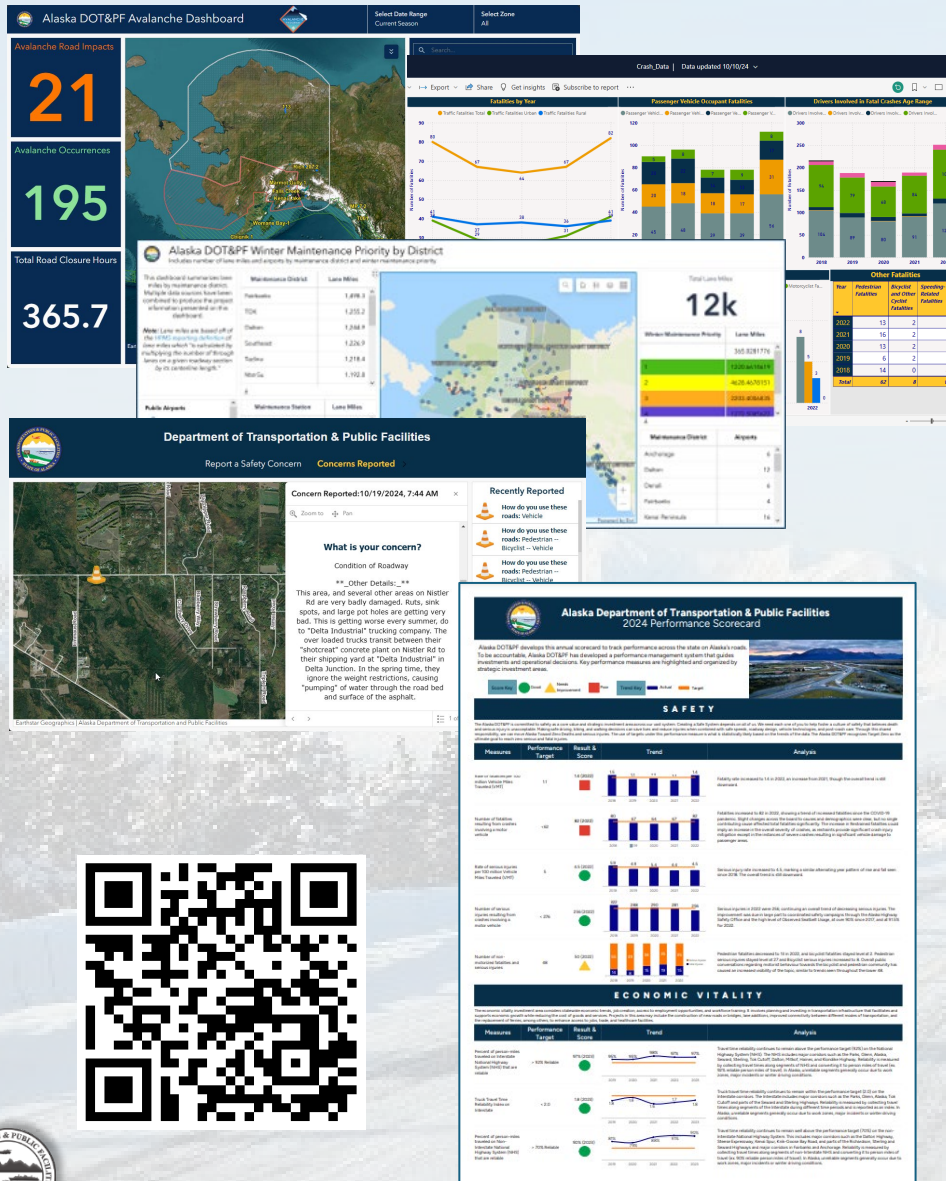
TOTAL ROAD CLOSURE
HOURS

383.9



Parks Highway Milepost 219, Jan. 2025

DATA MODERNIZATION AND INNOVATION



Traffic & Safety Engineering & Operations

- Traffic Engineering
- Traveler Information
- Intelligent Transportation System
- Connected & Autonomous Vehicles
- Alaska Highway Safety Office

Research & Innovation

- Transportation Research
- Technology Transfer
- Workforce Development
- Process Improvement

Transportation Data

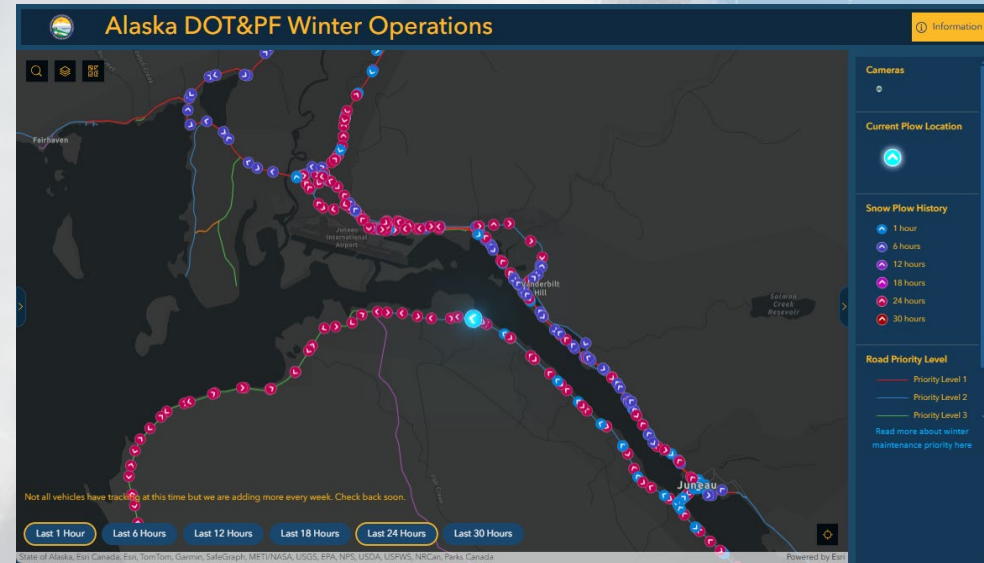
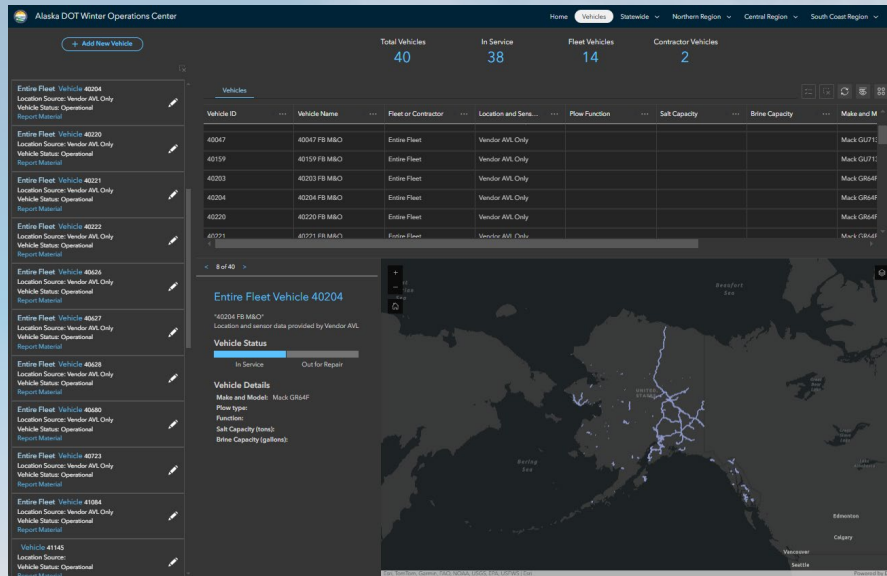
- Geographic Information Systems (GIS)
- AASHTOWare Project
- Data Analysis & Visualization

Asset Management and Reporting

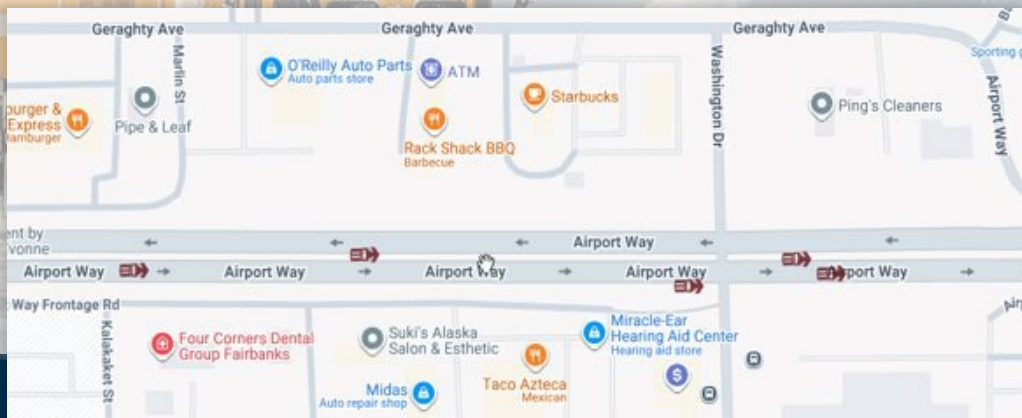
- Bridge & Pavement Condition Reporting
- Highway Performance Monitoring
- Performance Management
- Traffic Volume Monitoring

WINTER OPERATIONS DASHBOARD

Public Dashboard



Internal Fleet Management



511 – Audible Alerting



511 – KNOW, *EVEN MORE*, BEFORE YOU GO

399K

ACTIVE USERS

NEARLY

1M

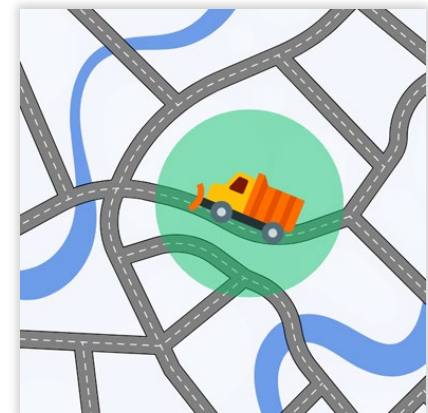
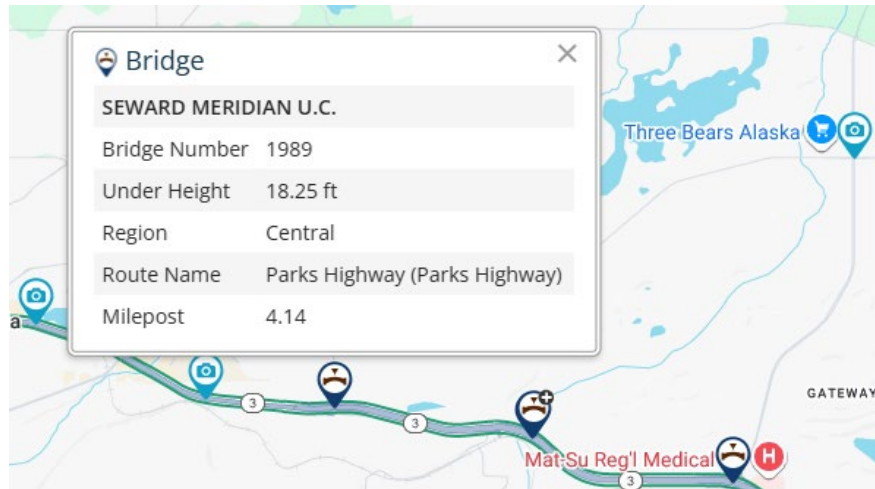
SESSIONS



152 INCIDENTS
EVENTS
CONDITIONS

ROAD
WORK
EVENTS

504



FUTURE ENHANCEMENTS

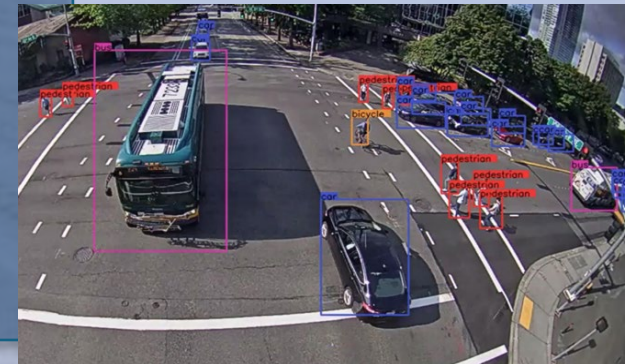
Enhancing Real-Time Data Collection

- Mobile Road Weather Information Systems – Improved monitoring of conditions
- Traffic Condition & Movement Tracking – Increased situational awareness
- Avalanche Detection & Mitigation – Proactive safety measures
- Smart Work Zones – Optimized traffic flow & worker safety

Key Objectives

- Real-Time Decision Making – Faster, data-driven responses
- Automated Alerting– Streamlined information sharing
- Advanced Traffic Management System – Coordinated statewide efforts
- Joint Operations Center – Unified emergency and traffic management

Goal: A Safer & More Reliable Transportation System for Alaska



RESPONSES ARE ADAPTABLE TO SEVERITY OF STORM

- Roadways are plowed based on statewide roadway priorities and further refined into individual plow routes to maximize efficiency and consistency
- Contractors, overtime, and shared personnel are utilized to adjust responses based on storm size, severity, and location

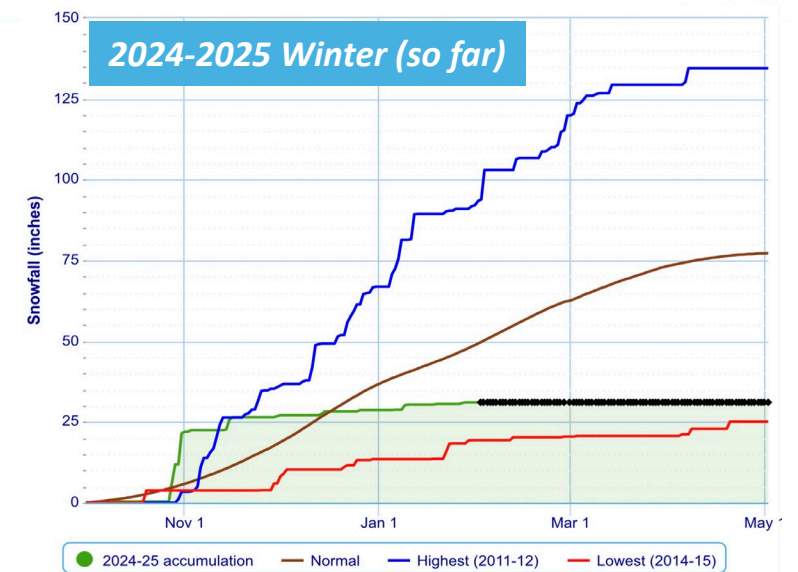
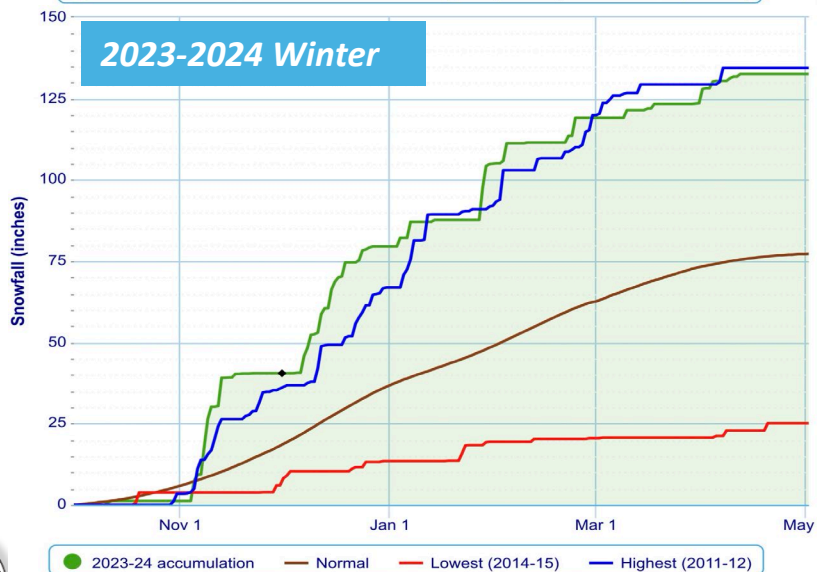
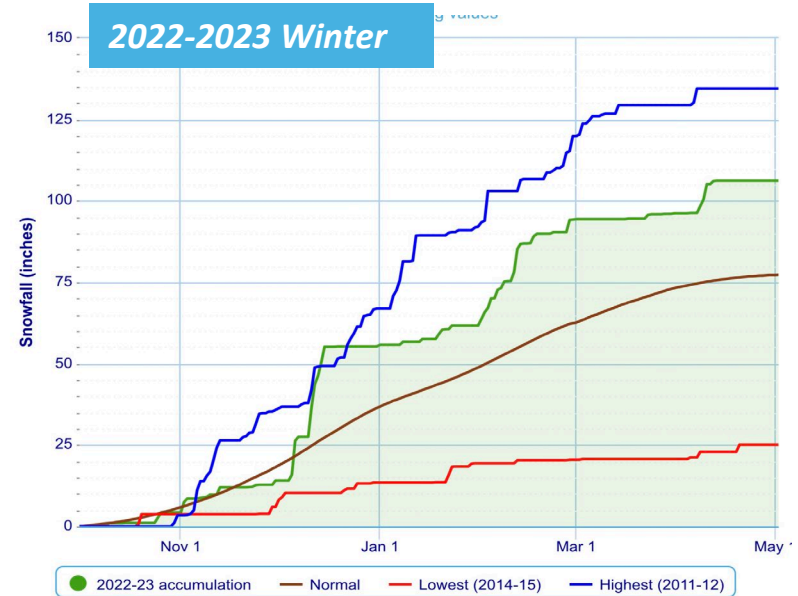
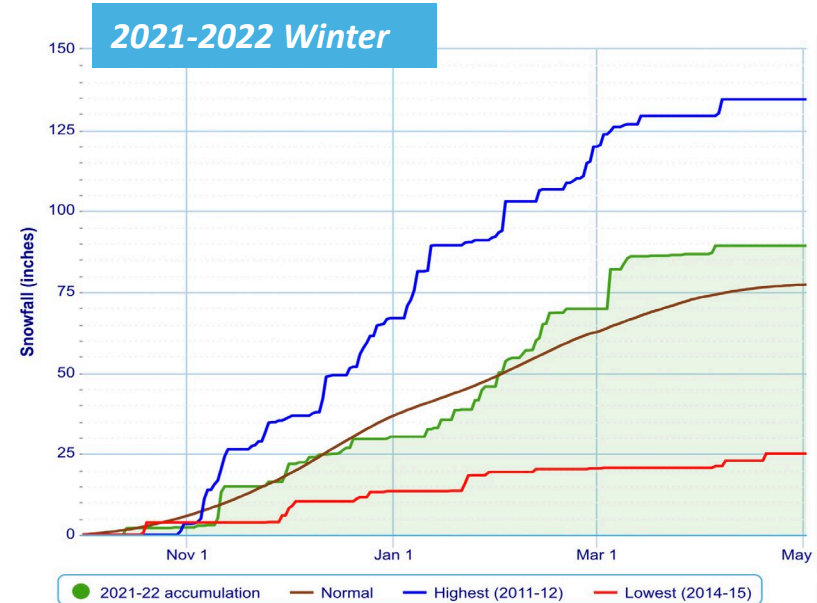
Key Factors in Storm Response

- Equipment availability (downtime impacts response)
- Type and rate of precipitation, asphalt temperatures, wind, and duration
- Temperature trends before, during, and after the event
- Traffic volumes affecting plowing operations
- Snow haul sites availability for clearing
- Emergency calls impacting resource allocation

Outside Badger/Peede Loop (Day 2)	Outside Badger/Hurst Loop (Day 2)	12 Mile Loop (Shift 2)
Truck: _____ Operator: _____	Truck: _____ Operator: _____	Truck: _____ Operator: _____
Truck: _____ Operator: _____	Truck: _____ Operator: _____	Truck: _____ Operator: _____
Radio Channel: _____	Radio Channel: _____	Radio Channel: _____
Start At Riverview Gas	Start On Plack End Of Nelson Rd	Start On Richardson Hwy @ Finell Dr
<input type="checkbox"/> 1. Old Badger Rd	<input type="checkbox"/> 1. Nelson Rd	<input type="checkbox"/> 1. Finell Dr
<input type="checkbox"/> 2. Persinger Rd	<input type="checkbox"/> 2. Lyle Ave	<input type="checkbox"/> 2. Santa Claus Lane
<input type="checkbox"/> 3. Peede Rd	<input type="checkbox"/> 3. Gordon Ave	<input type="checkbox"/> 3. 12 Mile/Old Richardson Hwy
<input type="checkbox"/> 4. Brock Rd	<input type="checkbox"/> 4. Hurst Rd	<input type="checkbox"/> 4. Old Richardson Hwy
<input type="checkbox"/> 5. Repp Rd	<input type="checkbox"/> 5. Hurst Extension	<input type="checkbox"/> 5. Dyke Rd
<input type="checkbox"/> 6. Hollowell Rd	<input type="checkbox"/> 6. Dawson Rd	<input type="checkbox"/> 6. Laurence Rd
<input type="checkbox"/> 7. Plack Rd	<input type="checkbox"/> 7. Lineman Ave	<input type="checkbox"/> 7. St. Nicholas Extension
<input type="checkbox"/> 8. Nordale Rd	<input type="checkbox"/> 8. Newby Rd	<input type="checkbox"/> 8. Buzby Rd
<input type="checkbox"/> 9. Freeman Rd	<input type="checkbox"/> 9. Mission Rd	<input type="checkbox"/> 9. St. Nicholas Ave
<input type="checkbox"/> 10. Keeling Rd	<input type="checkbox"/> 10. Mistletoe Rd	
<input type="checkbox"/> 11. Laurence Rd		



VARIABLE SNOWFALL REQUIRES VARIABLE RESPONSE



Powered by ACIS

Powered by ACIS



WINTER OPERATIONS STAFFING

Maintenance District	Total Equipment Operator Positions	Vacancy Rate (as of Jan. 29, 2024)	Vacancy Rate (as of February 3, 2025)
Anchorage	48	19%	4%
Matanuska-Susitna	37	14%	3%
Kenai Peninsula	53	25%	9%
Southwest	19	16%	5%
Dalton	70	26%	22%
Denali	26	27%	17%
Fairbanks	57	33%	11%
Tazlina	42	33%	3%
Tok	34	32%	32%
Valdez	24	29%	38%
Western	29	21%	20%
Kodiak/Aleutian	32	4%	9%
Southeast	56	11%	7%
Total/Average	527	22%	14%



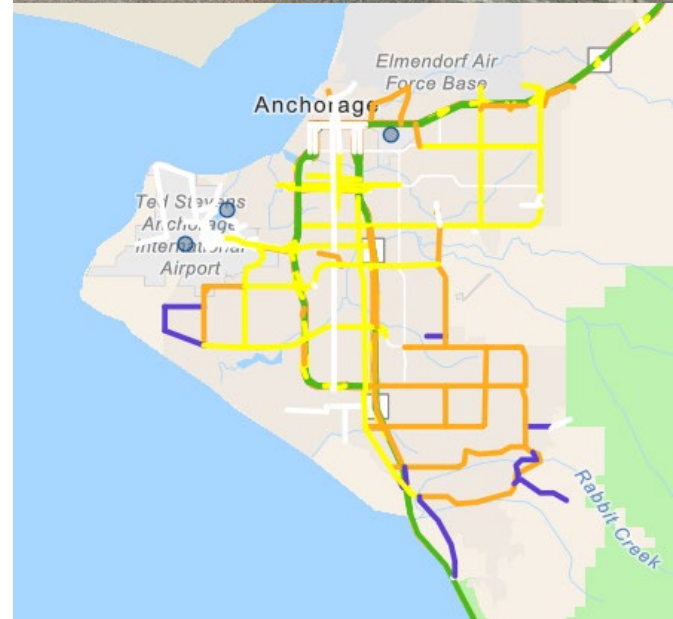
PARTNERSHIPS AND OTHER RESOURCES

Collaborative Efforts Across Alaska

- **City of Fairbanks** – Roadway responsibility swaps for improved maintenance
- **Municipality of Anchorage** – Transfer of Responsibility Agreement (TORA)
- **City & Borough of Juneau** – Enhanced priority for Fish Creek Road
- **ROW Trespass Agreement Assistance** – Resolving Right-of-Way issues efficiently
- **Signalization Work** – Optimizing traffic signals to enhance resource sharing

Contract Support for Winter Operations

- **Fairbanks** – Priority 3 & 4 roads (4th year of contract support)
- **Fairbanks** – Pedestrian facility maintenance & snow haul trucking
- **DNR Support** – Clearing downed trees and snow removal
- **Anchorage** – Addressing Priority 3 and 4 roads (2nd year of contract support)
- **Anchorage** – Expanding sidewalk maintenance
- **Juneau** – Partnering with City and Borough of Juneau to improve pedestrian access
- **Emergency Assistance** – Contractor support for heavy storms



STATE EQUIPMENT FLEET

**51 Maintenance Shops
Statewide**

125 Mechanic Positions

**Over 7,500 pieces of state
equipment and vehicles**

- Executive branch
- University of Alaska
- Other state agencies

**Primary Focus in October-
March: Snow & Ice
Removal Equipment**



EQUIPMENT MECHANIC STAFFING

Maintenance District	Heavy Equipment Mechanic Positions	Vacancy Rate (as of Jan. 29, 2024)	Vacancy Rate (as of February 3, 2025)
Anchorage	10	33%	50%
Matanuska-Susitna	7	28%	0%
Kenai Peninsula	9	11%	22%
Southwest	5	40%	40%
Dalton	13	0%	23%
Denali	4	50%	25%
Fairbanks	11	36%	55%
Tazlina	6	33%	50%
Tok	8	13%	0%
Valdez	5	60%	40%
Western	8	50%	50%
Kodiak/Aleutian	5	40%	20%
Southeast	12	25%	50%
Total/Average	103	25%	33%



ALTERNATIVE SOURCES FOR MAINTENANCE RESOURCES

Addressing Mechanic Vacancies

- Increased reliance on alternative repair methods
- Utilizing:
 - Equipment dealers
 - Car & light truck dealers
 - Independent & specialty shops
 - M&O staff & local airport contractors

SEF Contracted Maintenance

(\$ in Thousands)

FY2022	\$965.9
FY2023	\$1,245.6
FY2024	\$1,428.7
FY2025	\$1,650.0 (projected)

Exploring New Partnerships

- Working to collaborate with large construction companies
- Potential use of their maintenance facilities for equipment servicing



NEW EQUIPMENT PURCHASING

Current Challenges

Long lead times for heavy equipment (18-24 months)

Improving Availability

Some equipment categories seeing shorter wait times: Loaders & Graders (8-16 months)

PLOW TRUCK ORDERS BY FISCAL YEAR

FY2022	FY2023	FY2024	FY2025	FY2026
6	9	20	30	30
				(projected)



VIRTUAL SNOW SUMMIT

NOVEMBER 21, 2024

Building on the October 2023 Summit

- Continued discussions and regional updates

Key Topics in 2024

- Maintenance Updates – Regional insights and improvements
- Statewide Equipment Fleet – Overview and optimization
- 511 System – Innovations and upgrades
- Winter Operations Dashboard – Real-time monitoring tools
- Sidewalk & Pedestrian Improvements – Accessibility and safety

Commitment to Future Snow Summits

- Affirmed annual summits for continued collaboration
- Rotating host communities to expand engagement

myAlaska Departments State Employees

Alaska Department of Transportation and Public Facilities
2024 VIRTUAL SNOW SUMMIT

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SNOWSUMMIT VIRTUAL 2024

You are here: DOT&PF > 2024 Virtual Snow Summit

Alaska DOT&PF Virtual Snow Summit – November 21, 2024

Thank you to everyone who participated in this year's Virtual Snow Summit on November 21st! We were excited to host this informative session, which offered valuable insights into winter maintenance strategies and snow removal. For those who missed the live event, you can still catch all the presentations and discussions by watching the recording in the [Vimeo link](#).

Looking ahead, we are thrilled to announce that the 2025 Snow Summit will transition to a hybrid format, providing both in-person and virtual options to make it more accessible. Stay tuned for more details in the new year!

Name a Snowplow	2024 Snow Summit Archive	2023 Snow Summit Archive
<ul style="list-style-type: none">2024-25 Name a Snowplow Team Contest2023-24 Name a Snowplow Contest Winner: Pres	<ul style="list-style-type: none">2024 Zoom Recording2024 Mentimeter Survey Results	<ul style="list-style-type: none">2023 Zoom Recording2023 Presentation Slides 36MB

Clear Sidewalks

- Clear Sidewalks: Public entities and businesses must clear snow from sidewalks, curb ramps, crosswalks, and accessible entrances.
- 403.5.2 Clear Width: The minimum clear width for sidewalks is 36 inches (3 feet), allowing easy navigation for wheelchairs.
- 403.2 (302) Smooth Surface: Sidewalk surfaces must be smooth to prevent trips and falls.
 - 302.1 General. Floor and ground surfaces shall be stable, firm, and slip resistant and shall comply with 302.
 - EXCEPTIONS: Within animal containment areas, floor and ground surfaces shall not be required to be stable, firm, and slip resistant.
- 403.3 Grade and Cross Slope: The running slope should not exceed 1:20 (5%), and the cross slope must be less than 1:48 (2%).
- 403.5.3 Passing Spaces: If sidewalks are less than 60 inches (5 feet) wide, passing spaces must be constructed every 200 feet. These spaces should be at least 60 inches on all sides.
- 406.1 Curb Ramps: Curb ramps must have a minimum clear width of 4 feet and a maximum slope of 1:12 (8.33%).

THANK YOU. QUESTIONS?

Jason Sakalaskas

Maintenance & Operations Chief
Northern Region

Jason.Sakalaskas@alaska.gov
907-451-2214

Brad Byslma

Manager
State Equipment Fleet
Brad.Byslma@alaska.gov
907-269-0787

Christine Langley

Director
Data Modernization & Innovation Office
Christine.Langley@alaska.gov
907-347-3730

Andy Mills

Legislative Liaison / Special Assistant
Commissioner's Office
Andy.Mills@alaska.gov
907-465-8124

Burrell Nickeson

Maintenance & Operations Manager
Central Region
burrell.nickeson@alaska.gov
907-269-0757

