

# House Transportation Committee

## Department of Transportation & Public Facilities

### Innovations

Andy Mills, Legislative Liaison  
Office of the Commissioner

Christine Langley, Director  
Data, Modernization, and Innovation

March 5, 2026



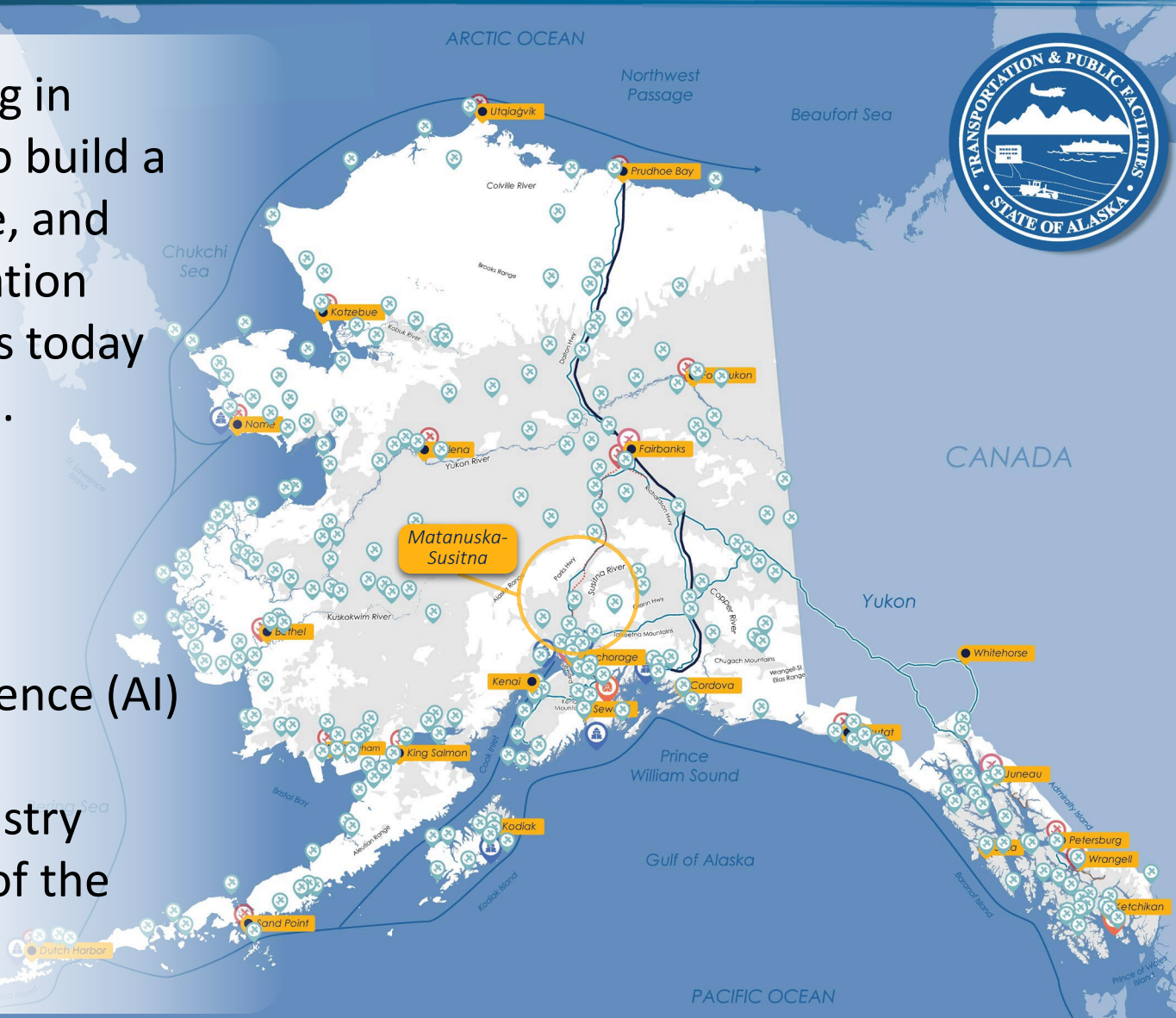
KEEP ALASKA MOVING

# Technology IS the Future of Transportation

DOT&PF is investing in innovation today to build a safer, more reliable, and resilient transportation system for Alaskans today and into the future.

## Innovation:

- Robots
- Drones
- Artificial Intelligence (AI)
- Avalanche
- Supporting Industry
- Transportation of the Future



# Alaska's Unique Transportation Challenge

Alaska's geography, climate, and scale require innovative approaches to maintain critical infrastructure, support industry, and improve safety while we *Keep Alaska Moving*.

We are Agile, Modern, and Resilient:

- Supporting operations by Land, Air, and Sea
- Covering vast distances with limited road connections
- Operating in extreme weather and rapidly changing conditions
- Maximizing limited resources



# Robots at Work Around the State

Underwater, on land, or in a culvert, remote controlled robots help DOT&PF perform inspections in hard-to-reach places increasing safety for the traveling public and our employees.



# Drones—Supporting Every Day, Ready for the Worst Day

- DOT&PF has 130 drones, phasing out DJI
- Over 200 Starlink panels
- Supporting faster, safer, and more cost-effective infrastructure construction, inspection, and emergency response
- Drones are used throughout the department to conduct day-to-day work, improving capabilities and reducing safety risks by land, air, and sea:
  - Construction
  - Design
  - Survey
  - Bridge
  - Maintenance & Operations



*DJI - Dà-Jiāng Innovations*

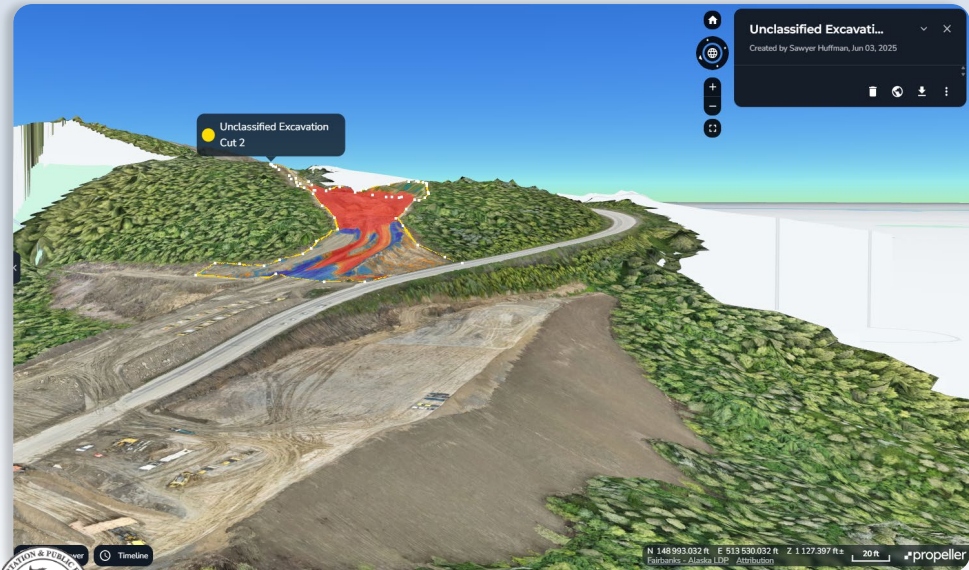
March 5, 2026



# Drones in Construction

## Construction

- Measure stockpiles & earthwork for faster payment
- Validate 3D model of construction with the design plan
- Virtually *see* the construction site from anywhere



# Drones in Bridge

Drones located around the state allow bridge engineers to get virtual eyes on a situation when a need arises.



Ability to inspect bridges with drones:

- Less disruptive to traveling public
- Safer for traveling public
- Safer for DOT&PF inspection teams

# Drones in Avalanche

Drones allow avalanche staff to remotely detonate devices mitigating potential avalanches prior to roadway impacts.



# Improving Safety Through Innovative Funding Use

By connecting great ideas, people in new teams, and funding across Alaska, we've been able to provide safety enhancements statewide.

- 800+ sets of PiLits
- 42 extrication tools to 14 agencies
- Retroreflective education and gear



# AI in Support of Safety and Operations

Pilot of a dynamic pedestrian light in Kodiak uses an AI algorithm to detect people, including kids and cyclists, as they cross the street. The lighting system illuminates individuals as they cross, supporting enhanced visibility and safety.





# AI in Support of Alaska's Economy

DOT&PF is supporting commerce and industry by modernizing our approach to data collection. AI asset collection, using crowd sourced imagery, is allowing Alaska to increase awareness of asset condition.



**Infrastructure Conditions Along the Proposed LNG Pipeline Route**  
Alaska Department of Transportation and Public Facilities

| Pavement Type | Road Condition | Bridge Condition | Bridge Load Restriction | STIP Project or Program |
|---------------|----------------|------------------|-------------------------|-------------------------|
| All           | All            | All              | All                     | No data                 |

**Road Conditions**

- Fair
- Good
- Poor

Subset of Projects from STIP 2024-2027 Amendment 2 Approved

- Alaska LNG Project
- Alaska LNG Mainline Route Rev D
- Point Thomson Transmission Line Rev D
- AK LNG Footprint Rev D Access Roads
- AK LNG Footprint Rev D

Category

- Construction ROW

**Existing Material Sites**

| Permitted Acres | Developed Acres |
|-----------------|-----------------|
| 240             | 49              |

**Road Overall Condition**

| Condition | Percentage |
|-----------|------------|
| Good      | 1.57%      |
| Poor      | 15.36%     |
| Fair      | 83.07%     |

Gravel surface conditions can change rapidly. The conditions displayed above reflect surface condition data along the LNG project corridor collected on June 25-26, 2024.

**Bridge Overall Condition**

| Condition | Percentage |
|-----------|------------|
| No Data   | 14.29%     |
| Good      | 28.57%     |
| Fair      | 57.14%     |

Bridge conditions were updated in February 2025. The overall condition displayed on the map shows the rating for the part of the bridge that was in the least favorable condition on the Performance Management Rating (PMR).

Alaska DOT&PF keeps Alaska moving by supporting major infrastructure projects from Prudhoe Bay to the Gulf of Alaska. The map above displays the current proposed route of the Alaska Liquid Natural Gas (LNG) pipeline along with the conditions of essential transportation assets that will support its construction.

Zoom in on the map and click features to find additional details about each asset. Use the filters at the top to refine your views.

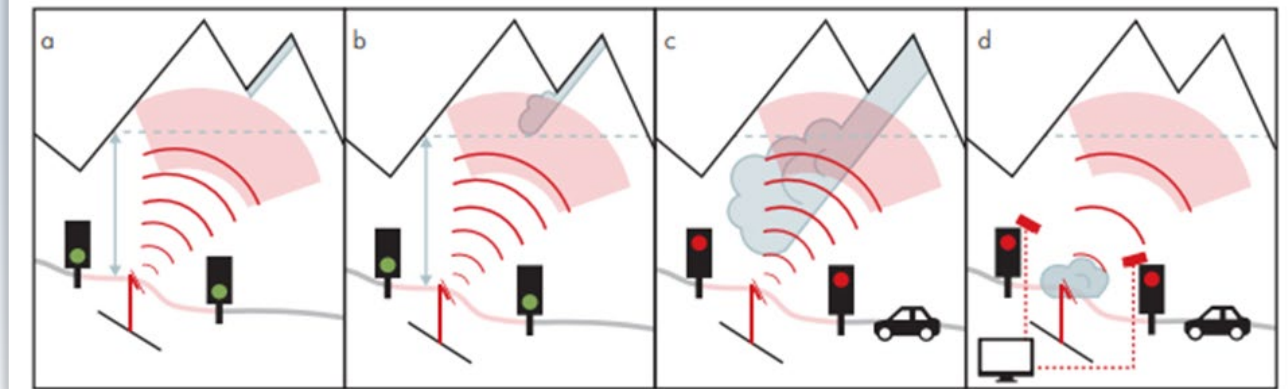
Learn more about what projects that are planned for development and construction in the next several years by visiting the [Statewide Transportation Improvement Program \(STIP\) dashboard](#) here. For comprehensive pavement information, visit the [Pavement Management and Preservation Office](#) here.

Alaska is leading the way in developing a method for rating gravel roads.



# Modernizing Avalanche Detection

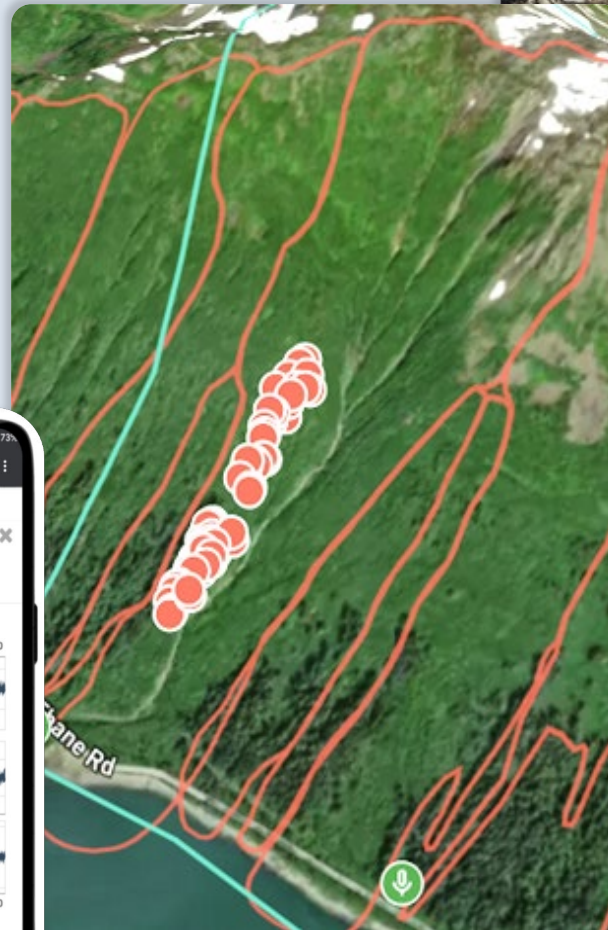
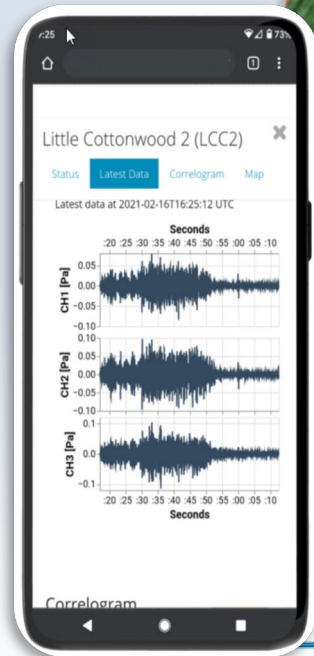
- Doppler Radar
- Installed January 2026
- Milepost 21 Seward Highway
- Remote detection and alerting
- GOAL: Automated traffic alerting



# Modernizing Avalanche Detection

## Infrasound Detection System

- Installed February 2026
- Milepost 99 Seward Highway
- Remote detection and alerting



# Modernizing Avalanche Response

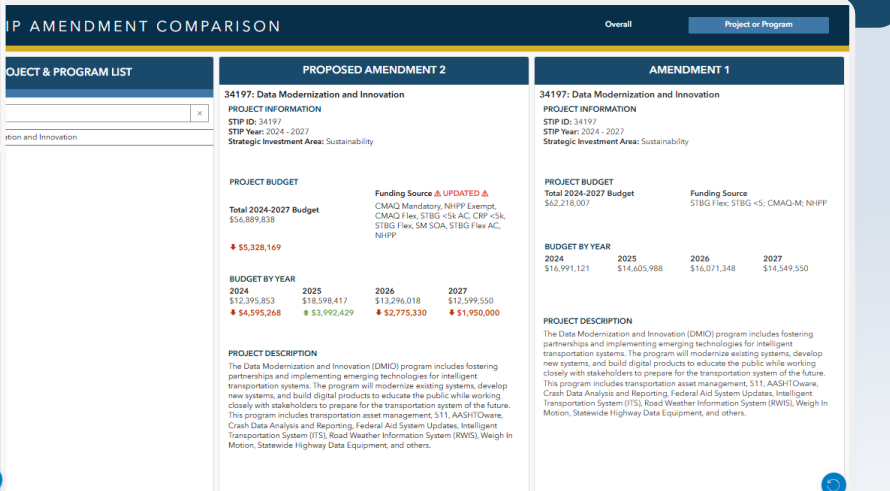
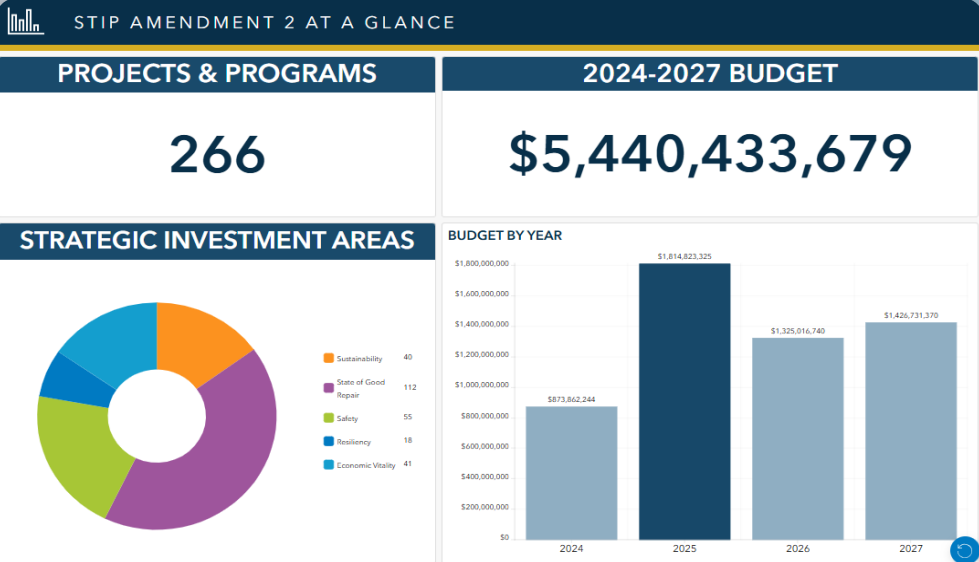
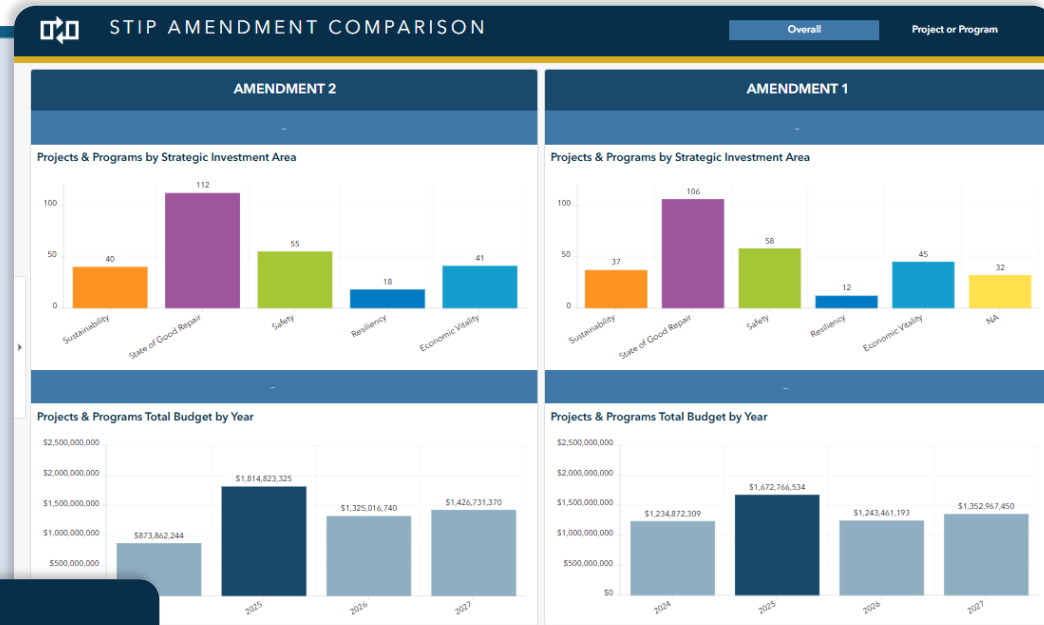
## Mobile Boom Whoosh

- Arrived February 2026
- Recharges in 20 seconds and fires up to 30 times
- Increases safety to staff and the public
- Decreases road closure time



# Modernizing Transparency in the Public Process

Information and access to data moves Alaska forward. Through the use of new digital tools, DOT&PF has modernized the way information is shared with the public and is a leading developer of new data products.



DOWNLOAD STIP AMENDMENT 2 APPROVED BY FHWA & FTA AND OTHER STIPS

AMD 1&2 COMPARISON TABLE



# Modernizing Information Sharing

511 Know Before You Go

Contract Award Dashboard

Winter Operations Dashboard

| Damage Level        | Count |
|---------------------|-------|
| Affected            | ~250  |
| Destroyed           | ~100  |
| Destroyed / Missing | ~50   |
| Inaccessible        | ~10   |
| Major               | ~350  |
| Minor               | ~400  |
| No Damage           | ~50   |
| Unaffected          | ~150  |

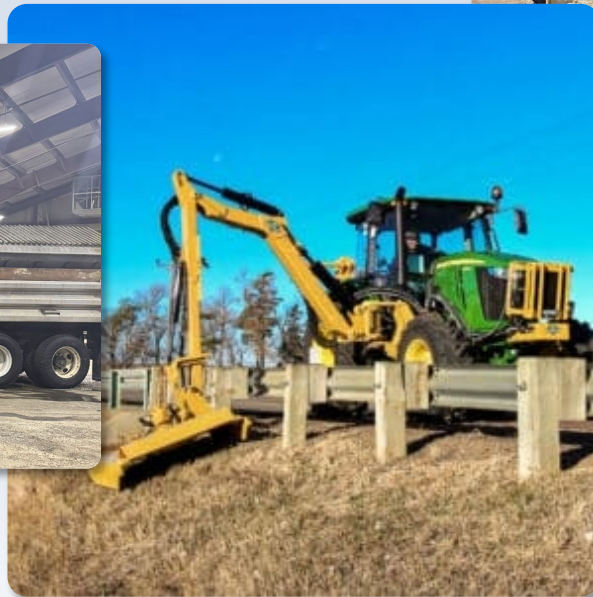
Typhoon Halong Dashboard

DOT&PF Permitting System



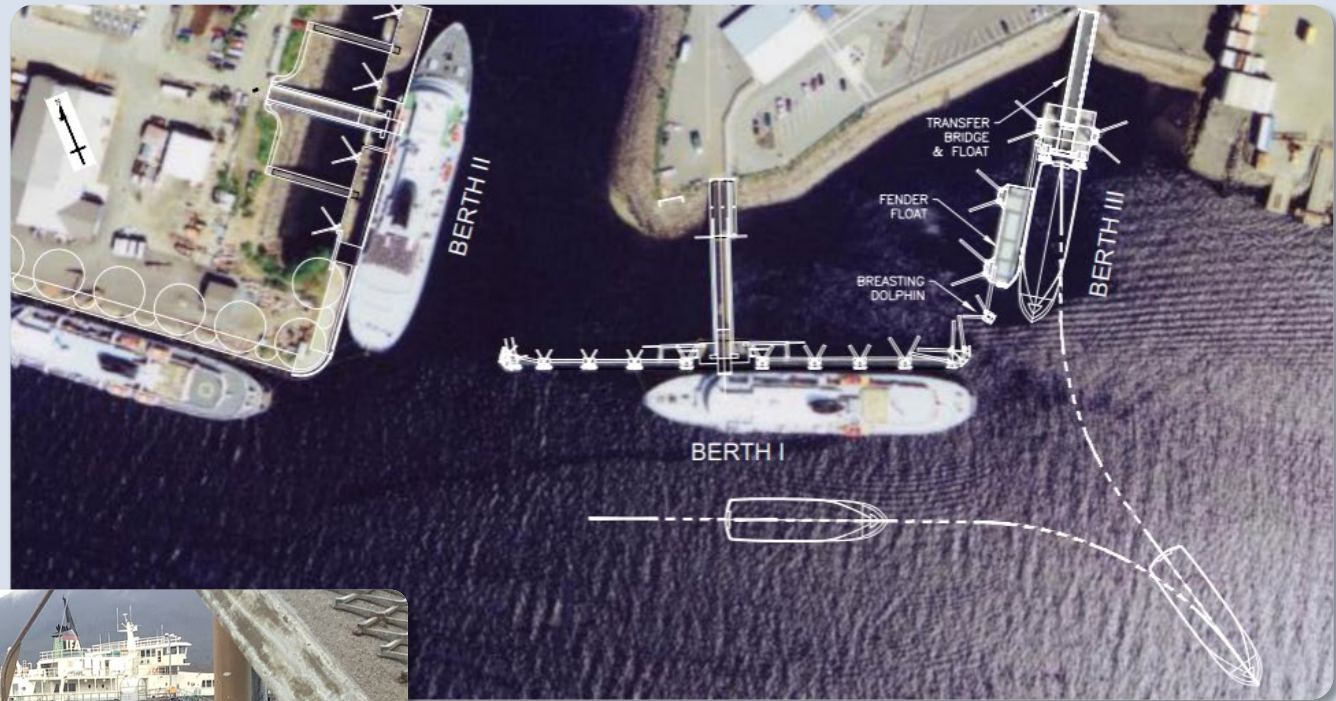
# Increasing the Function of What We Already Own

Traditionally, tractors mowed in the summer and were parked in the winter. DOT&PF is now making this equipment operational year-round by using a front Power Take-Off (PTO) and 3-point hitch so the equipment can perform a variety of functions.



# Increasing the Function of What We Already Own

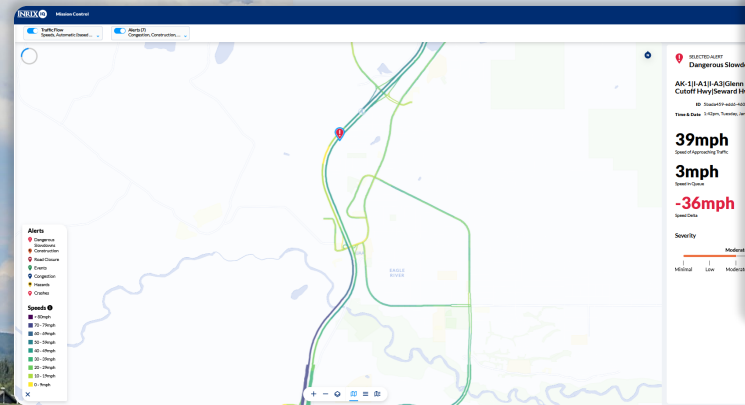
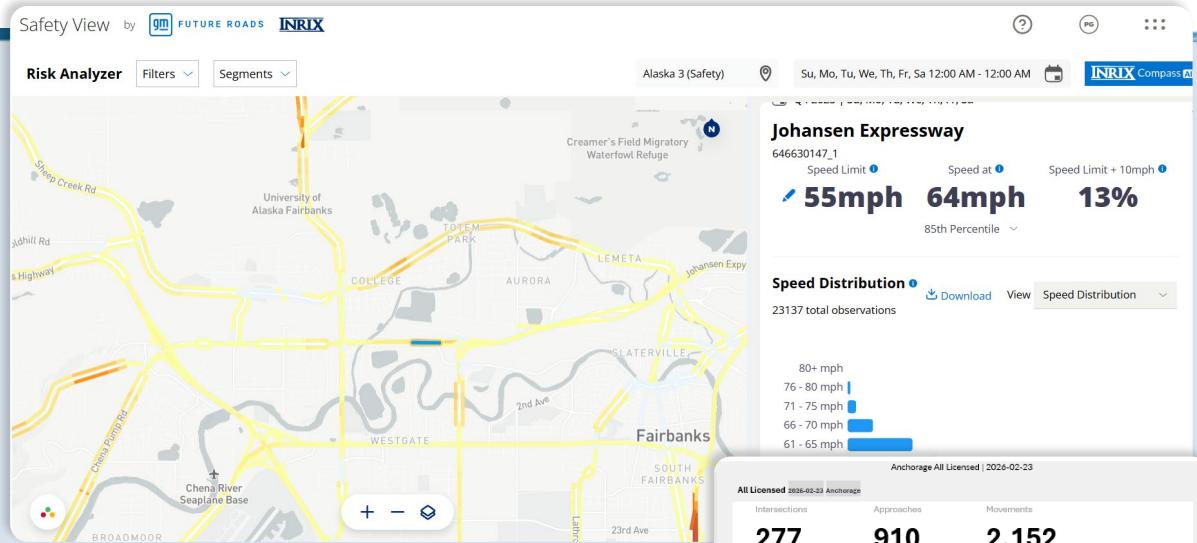
The Ketchikan dock has experienced reoccurring damage due to an undersized design for the use case.



An innovative solution has reinforced the dock making it more suitable for the forces involved in docking, decreasing damage and extending the life of the existing dock.

# Modernizing Traffic Operations

By analyzing speeds, delays at intersections, and how quickly roadway conditions shift, we can respond effectively in real time while also making informed, forward-looking decisions.



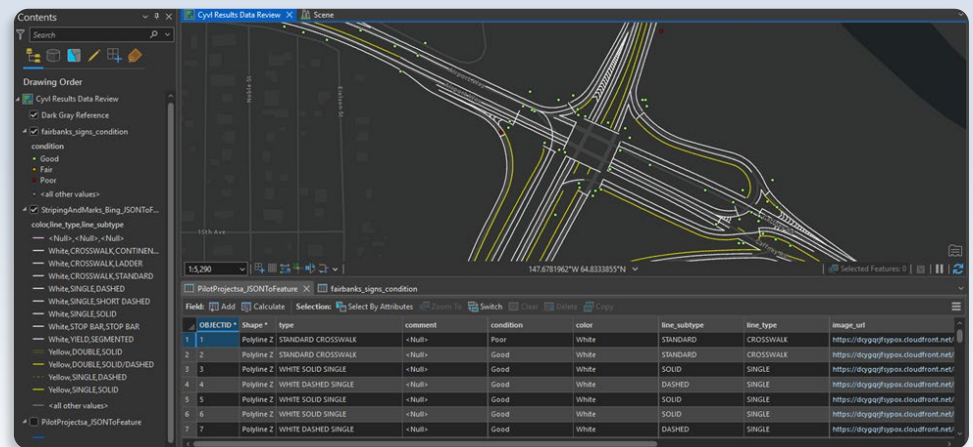
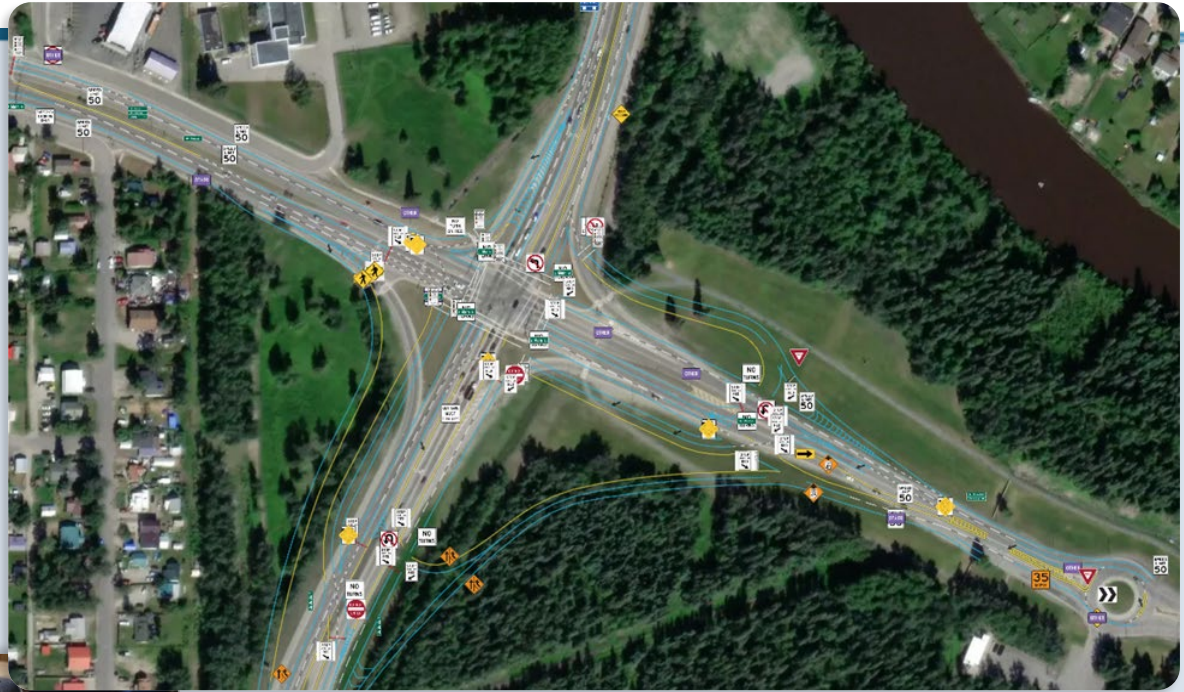
*Dangerous Slow downs*

*Real time traffic signal wait times*



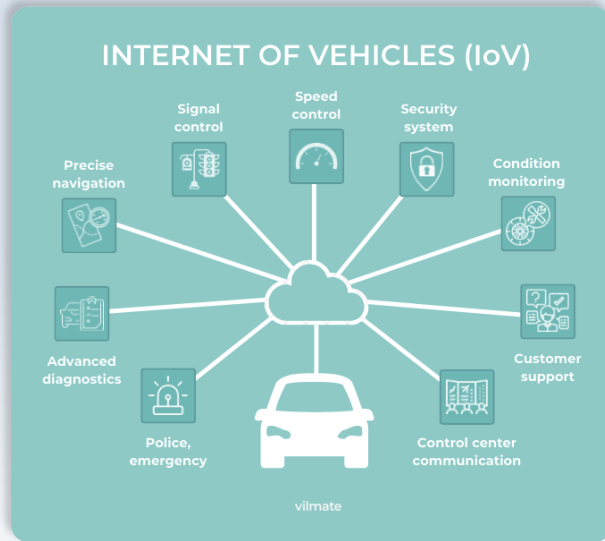
# Preparing for the Connected Transportation of the Future

Creating "digital twins" of our transportation system positions us for the connected infrastructure of the future, whatever that may be.



# Joint Traffic Operations Center

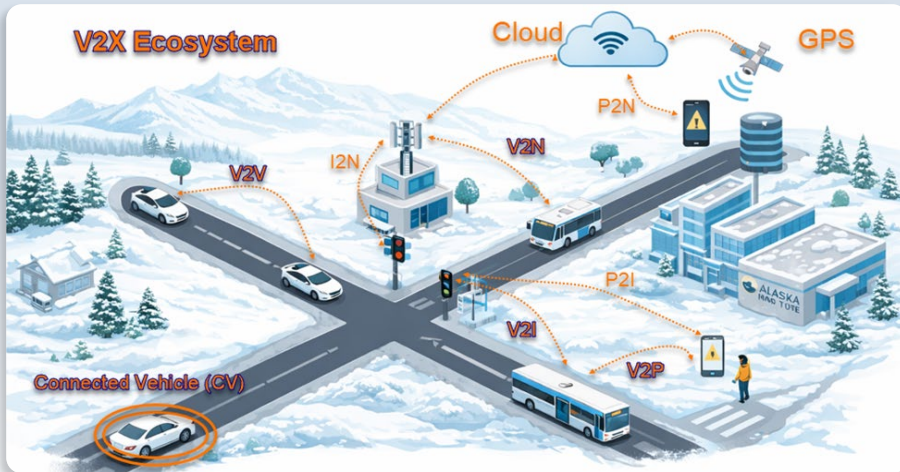
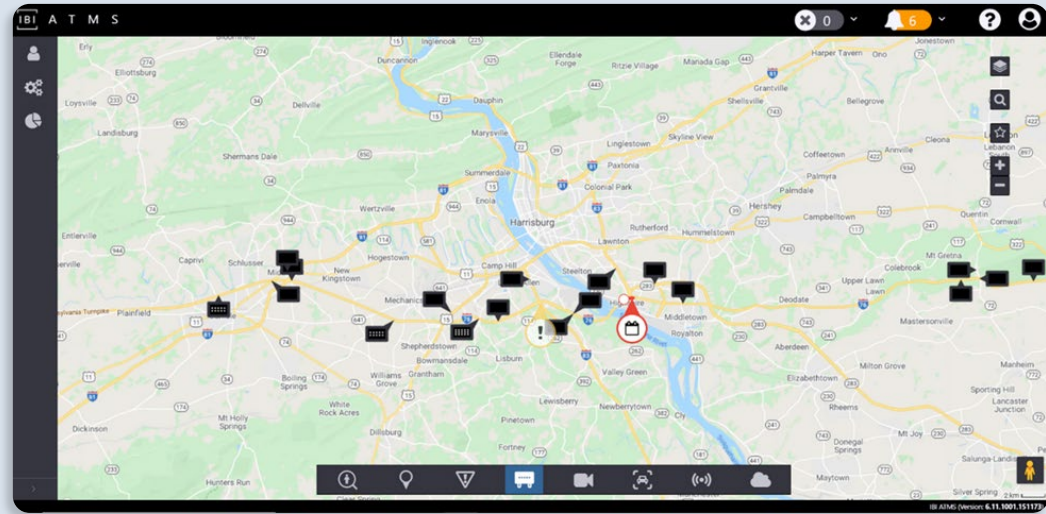
DOT&PF and Department of Public Safety (DPS) are working currently to design the transportation system of tomorrow. Alaska's first Transportation Operations Center will help Alaska be prepared for the complexity that drives our transportation system.



# Preparing for the Connected Transportation of the Future

Drive Wyze and Alaska Alerts will add to our ability to share messages on 511, social media, and digital message boards.

Combined with connected corridors, Alaska will be positioned to step into the future.



A screenshot of a software interface for an Intersection Safety Analysis. The interface is divided into several sections. On the left, there is a 'New Conversation' section with a text input field and a 'Send' button. Below this is a summary of the analysis: 'Intersection Safety Analysis Complete' and 'Asset Inventory Summary'. The 'Asset Inventory Summary' lists 'Infrastructure Assets (154 total)' including Pedestrian (8 push buttons, 6 curb ramps, 4 sidewalk sections), Traffic Control (8 signals, 1 signal pole, 1 CCTV), and Road (23 manholes, 7 curb sections (R30 ft), 2 medians). On the right, there is a map showing a street intersection with various layers and markers. A pop-up window on the map says: 'ADA ramps at this intersection are non-compliant - need to replace both before we repave Dover St. @Mike can we get this into the Q3 scope?'. The map interface includes a search bar, a 'Share Map' button, and a list of layers on the right side.



# Thank You.



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Alaska 511: [511.alaska.gov](http://511.alaska.gov)



Cover photos by Alaska DOT&PF Staff:  
*Sunset departure, Anchorage International Airport.* By Christopher Cummins  
*Alaska Range from the Richardson Highway.* By Dennis Bishop  
*Aboard the MV LeConte sailing Lynn Canal to Juneau from Haines.* By Andrea Deppner

**KEEP ALASKA MOVING**