



NATIONAL WEATHER SERVICE
Protecting Lives and Property for 150 Years

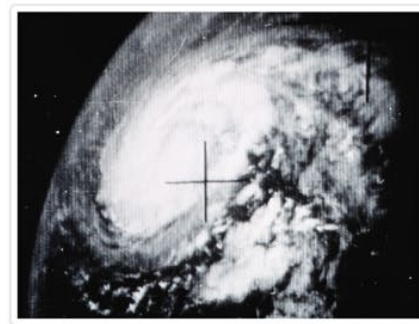
Towards Zero Deaths:

Making the Traveling Public Safer Through A Partnership Between the National Weather Service and the Idaho Transportation Department



JANUARY 13, 2020

Presenters: Vernon Preston MIC & Alex DeSmet Meteorologist, NWS Pocatello Idaho



Idaho Transportation Department & National Weather Service Partnership

”...Changing our practices with information and knowledge from National Weather Service forecasts has reduced accidents and fatalities on our roadways as well as kept our commerce moving and during emergencies; we know our roads are ready to serve our first responders.”

- Mel Coulter, ITD Emergency Manager



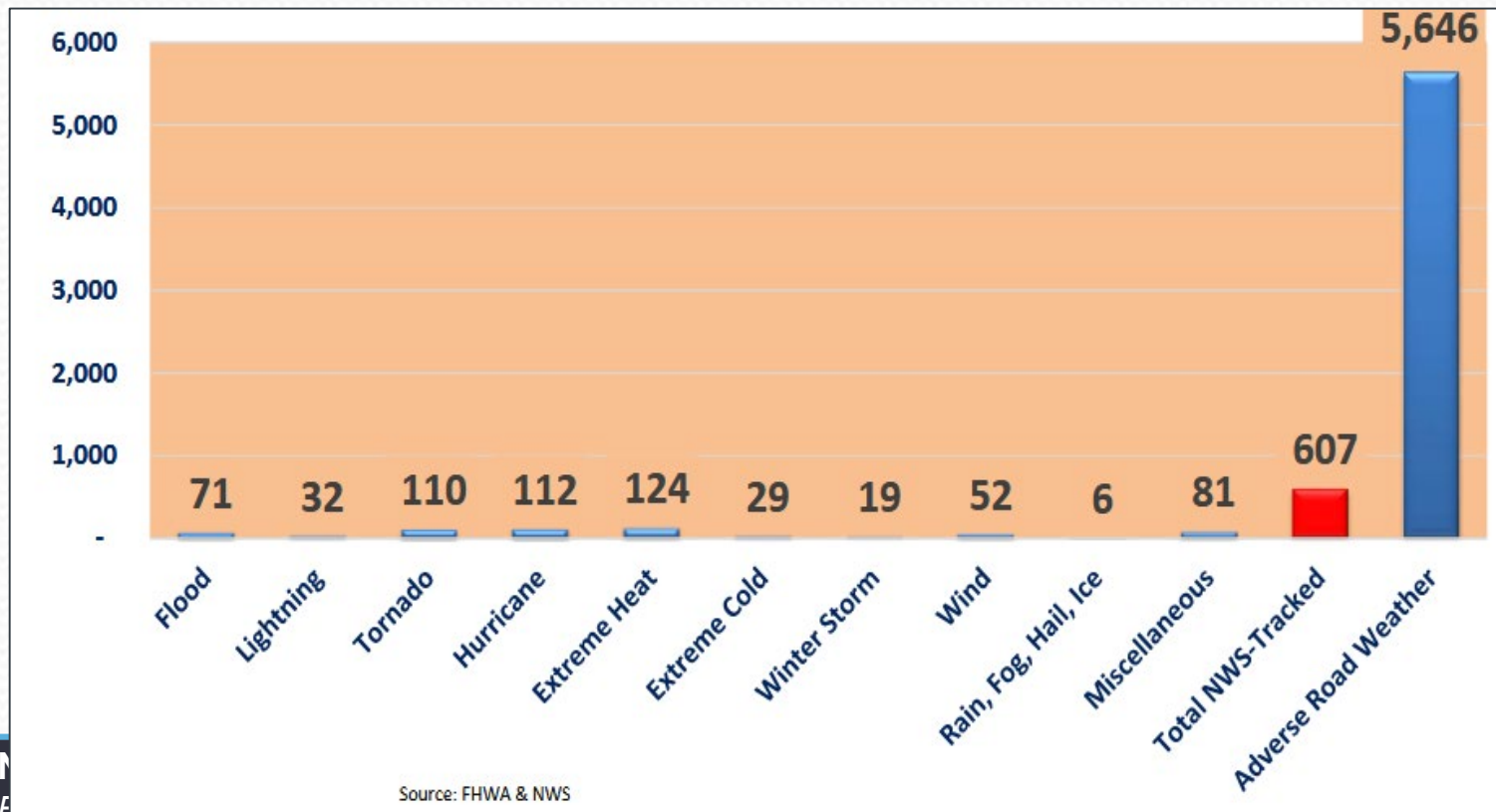
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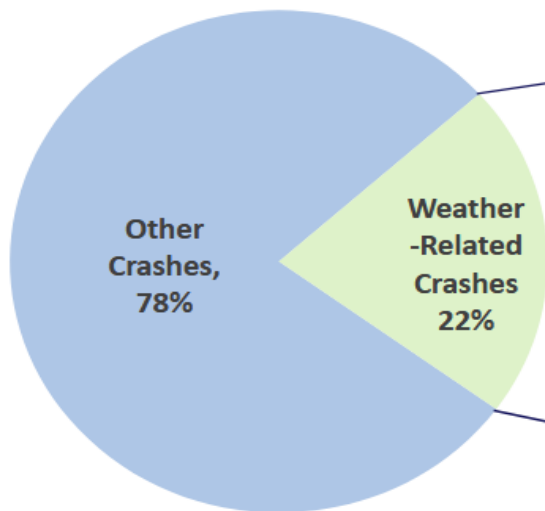
Average Annual Fatalities Under Adverse Weather

10-Year Annual Average of Adverse Weather-Related Fatalities 2005-2014

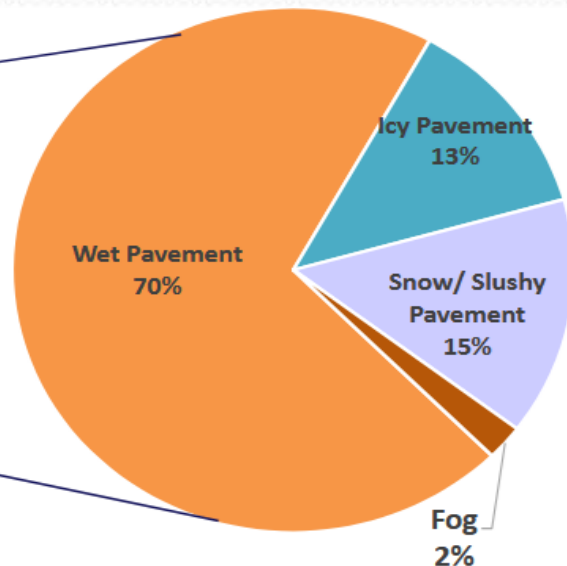


Weather Related Crashes

Total Annual Crashes



Weather-Related Crashes by Road Weather Condition



Road Weather Management Program, Table: Weather-Related Crash Statistics (Annual Averages),
http://www.ops.fhwa.dot.gov/weather/q1_roadimpact.htm



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Parallel Missions

- **NWS Mission:**
 - *Protect Life & Property*
 - *Enhance Commerce*
- **Idaho Transportation Dept. Mission:**
 - *Your Safety*
 - *Your Mobility*
 - *Your Economic Opportunity*



Common Goal: Toward Zero Deaths



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Building a Weather-Ready Nation // 5

Decision Support – Building a Relationship

2005

2009

Began supporting ITD
in their operations

- 2005 Meetings with ITD Emergency Management
- 2007 Expansion of Coordination
 - Mobility Services
 - 511 Program
 - Winter Maintenance & Observations
 - Roadside Services
 - District Planning Meetings



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ITD/NWS Partnership Development

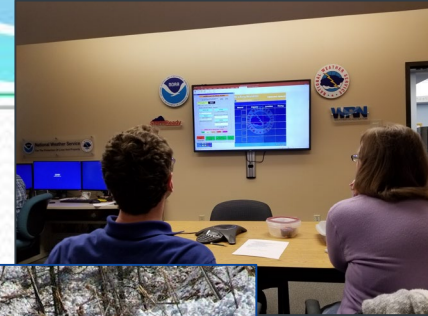
2005-2010

Coordination Services Initiated

- Live Winter Weather Briefings with NWS
- Foreman have direct conversations with NWS Forecasters
- NWSChat
- Facebook & Twitter
- iNWS Email Notification

ITD contemplates changing its operational model

- Used to wait for the storm – then plow and sand during and after event



Began supporting ITD in
their operations



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Decision Support – Building a Relationship

2005

Began supporting ITD
in their operations

2010

Growth with ITD winter performance
measures & NWS live and recorded briefings

2017

2012 – ITD engineers develop winter performance measures

2014 – ITD/NWS partnership leads to Scheduling Staff by the Storm

- Governor's Award for Excellence

2015 – expansion of additional briefings for all NWS offices serving Idaho



ITD – Goes on Offense

2010-2013

Active promotion of preventative tactics

- Using forecast information and direct decision support communication with NWS staff - ITD begins:
 - *Treating roadways prior to storms arrival*
 - *Regional districts explore changing staffing models*



Growth with ITD winter performance measures &
NWS live and recorded briefings



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Scheduling by the Storm



With Decision Support knowledge ITD Foreman change paradigm for staffing

- Send staff home prior to storm
- Reduced overtime and road miles on plow trucks
- More responsive staff and greater safety

Idaho Governor's Award

Excellence In Transportation Award

ITD District 5 & Pocatello NWS



Began supporting ITD in their operations

Growth with ITD winter performance measures & NWS live and recorded briefings



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Partnership Leads to Safety

RESULTS – Fewer Accidents & Fatalities (Source: ITD)

2012/2013 Season (3-year averaged)

- **1254 Accidents**
- **7- 10 Fatalities**



2013/2014 Season (3-year averaged)

- **912 Accidents**
- **5-7 Fatalities**



Began supporting ITD in their operations

Growth with ITD winter performance measures & NWS live and recorded briefings



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Idaho's Winter Performance Measures

First in the nation and globally to develop a system of measurements for winter operations

ITD measures the effectiveness of

- 1) **Mobility index**- ice and snow floor prevention
- 2) **Winter Performance Index**-deicing and snow removal

These two performance measures are attained by Roadway Weather Information Systems sites in over 125 locations state wide

Began supporting ITD in their operations

Growth with ITD winter performance measures & NWS live and recorded briefings



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ITD's Winter Performance Measures

Got Grip?

Dry = 0.82



Wet = >0.60



Ice/Snow = <0.50



Began supporting ITD in their operations

Growth with ITD winter performance measures & NWS live and recorded briefings

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ITD's Winter Performance Measures

Mobility Index- the amount of time the “Grip” is maintained above 0.60 during winter storm events.



Excellent



Average Mobility

0.60



Adverse Driving Conditions

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Growth with ITD winter performance measures & NWS live and recorded briefings



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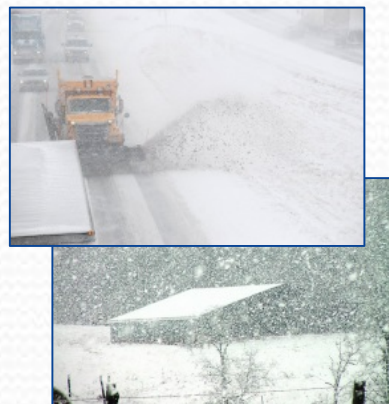
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ITD's Winter Performance Measures

Winter Performance Index

Severity of the Storm



Time grip below 0.60



Severity Index



WPI

Key is - how fast is the “Grip” restored in comparison to the conditions –
Outcome – **the faster the restoration – the safer the travel conditions.**

Began supporting ITD in
their operations

Growth with ITD winter performance measures &
NWS live and recorded briefings

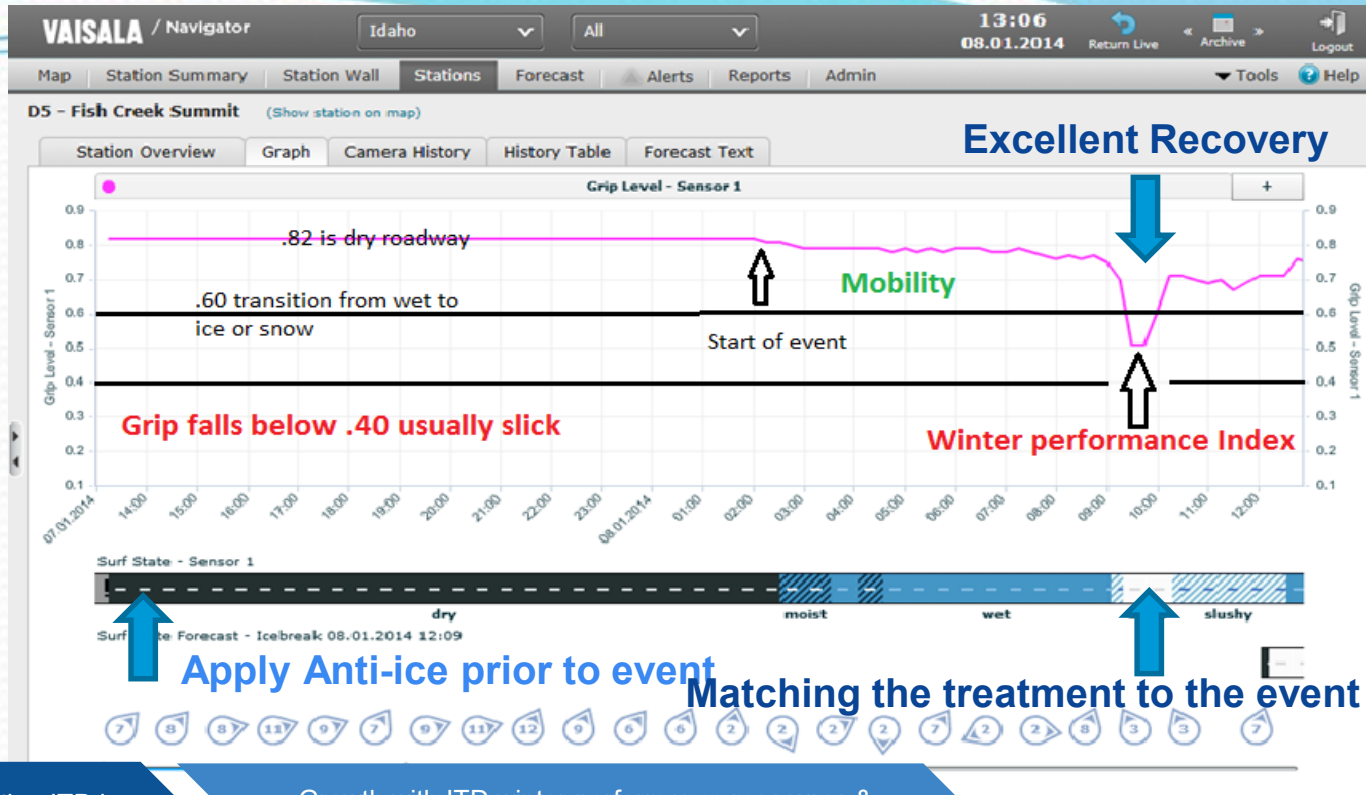


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The Results – Show Me the Grip



Began supporting ITD in their operations

Growth with ITD winter performance measures & NWS live and recorded briefings



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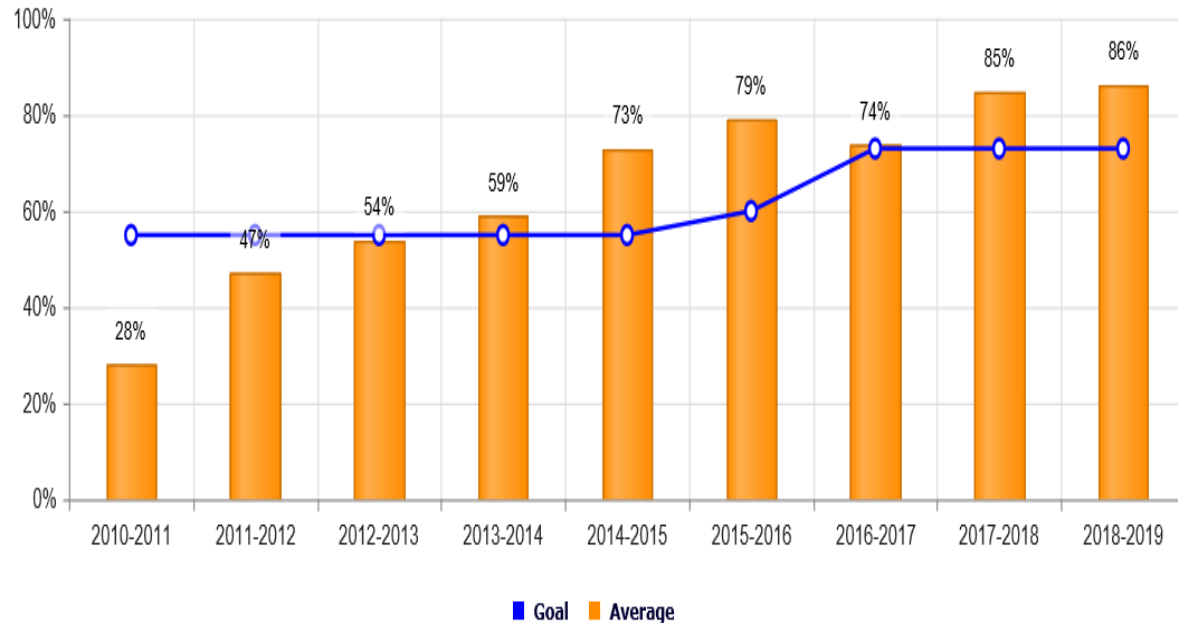
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Results from Partnership

Percent of Time Highways Clear of Snow/Ice During Winter Storms

Target: Maintain at least 73% unimpeded mobility during winter storms.



Began supporting IT
their operations



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Positive Trends Continue

- Weather-related accidents are decreasing in the area
- The amount of time grip level is “good” ≥ 0.60 is increasing
- From 2010-2014, 33% of all crashes in District 6 occurred from Idaho Falls north to Rexburg along Highway 20. From 2014 - 2016, that number fell to 15%
- Accident rate trends are decreasing

D4: decrease of 1.7 times

D5: decrease of 1.2 times

D6: decrease of 2.9 times



Began supporting ITD in their operations

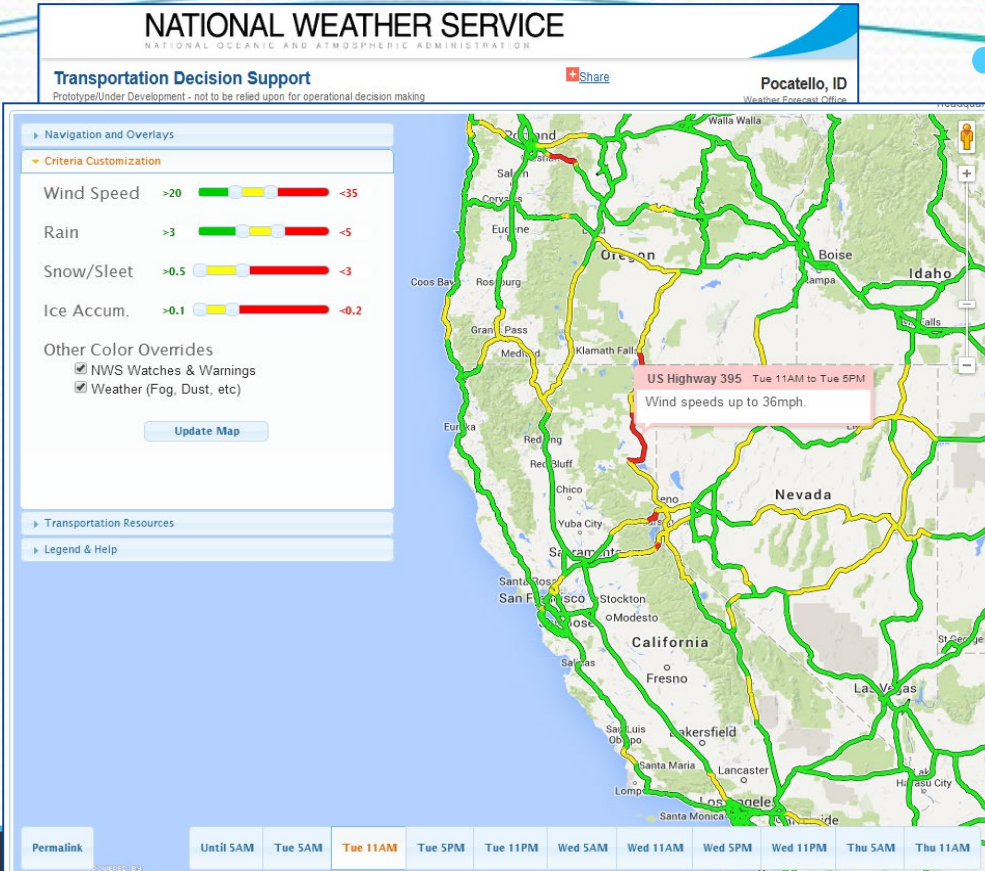
Growth with ITD winter performance measures & NWS live and recorded briefings



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Travel Decision Support - NWS



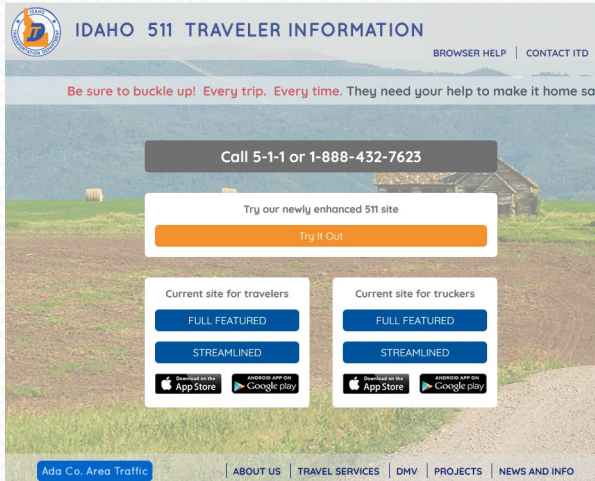
Segments Color Coded by Weather Hazard

Progress Roadway Disclosure

Customizable Threshold Criteria

For Decision Making

Travel Decision Support – ITD - 511

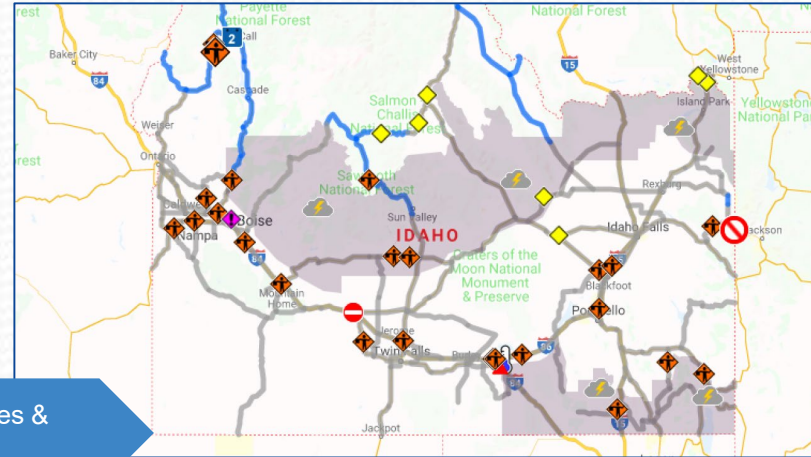


**NWS Warnings
incorporated into page**



RWIS Road Data

Vaisala Systems



Began supporting ITD in
their operations

Growth with ITD winter performance measures &
NWS live and recorded briefings



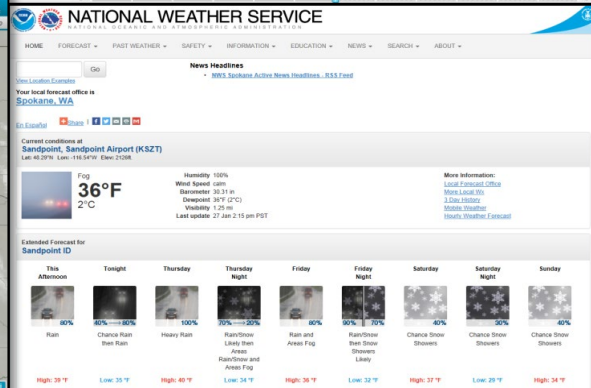
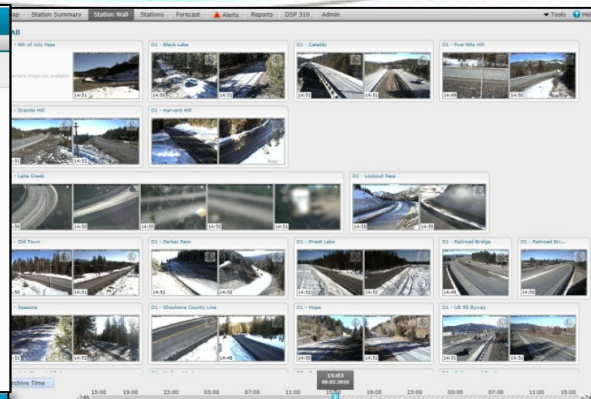
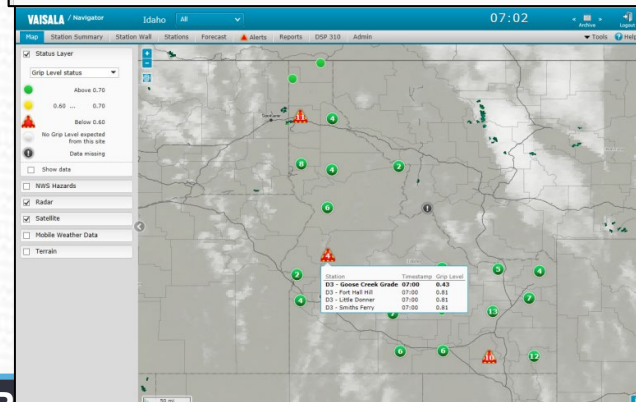
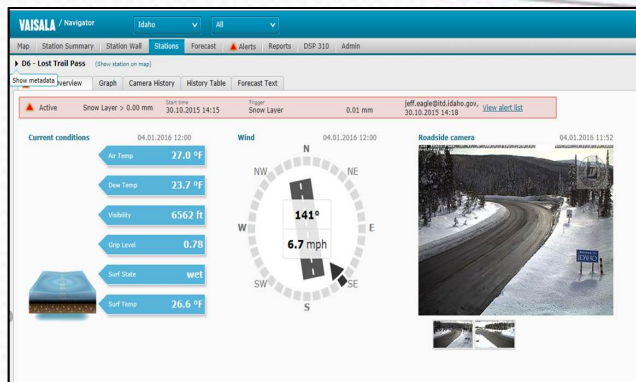
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Private Services – Vaisala Navigator

- Direct observation of roadway by operators
- Establish schedules
- Improves operations
- Continuous evaluation of winter operation Best Management Practices (BMPs)
- Customizable



Winter Operations System Integration



Decision Support – Building a Relationship

2003

Began supporting ITD
in their operations

2009

Growth with ITD winter performance
measures & NWS live and recorded briefings

2017

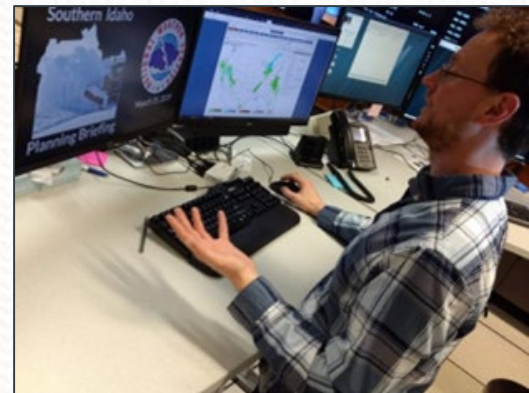
Pathfinder expanding
across Idaho

2017 – Initial meetings to develop concept – learning
from Utah Model

2018-19 – Development of joint live weather briefings
between NWS offices using common operating platform

- Pathfinder – demonstration efforts

2019 – Pathfinder goes “Live!” Calls initiated to
provide coordinated messaging effort prior to high
impact storms



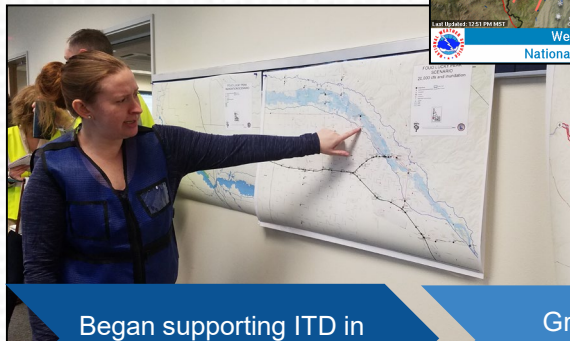
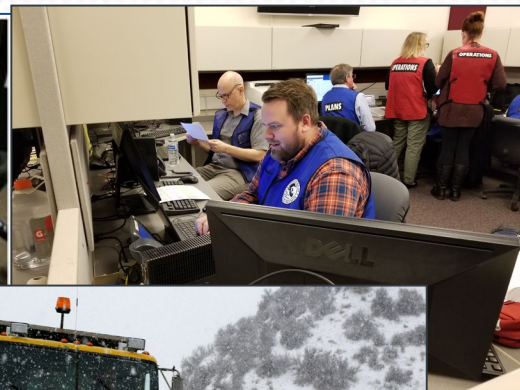
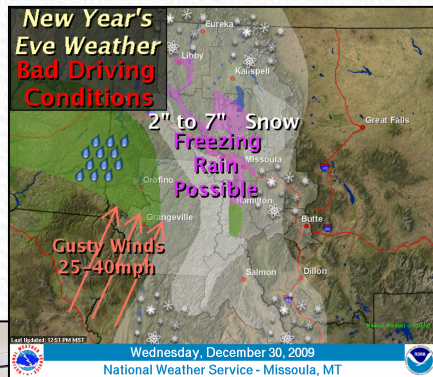
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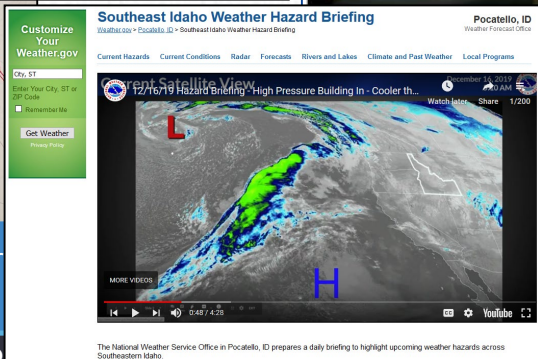
Briefing Evolution

Recorded and Live Briefings

Knowledge Beforehand –Leads to Better Decisions



Began supporting ITD in their operations



The National Weather Service Office in Pocatello, ID prepares a daily briefing to highlight upcoming weather hazards across Southeastern Idaho.



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Pathfinder – The Next Level of Collaboration

Building Common Safety Impacts Messaging

Travelers need to know:

Timing – Duration of weather event – when can I travel?

Location – Where are the greatest impacts expected

Impact – of weather on road conditions

Response – of traffic and road teams

Travelers – need to hear a **consistent message from multiple, *trusted sources***

Began supporting ITD in their operations

Growth with ITD winter performance measures & NWS live and recorded briefings

Pathfinder expanding across Idaho



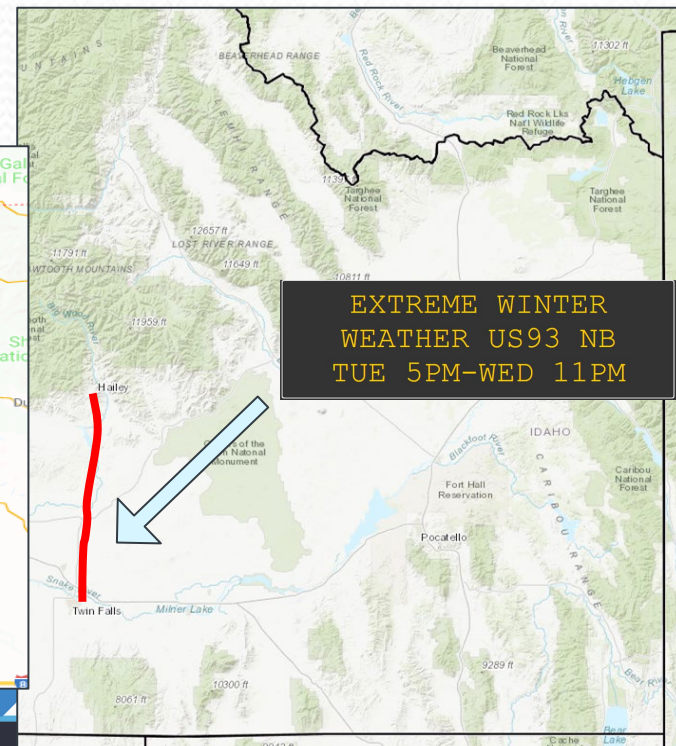
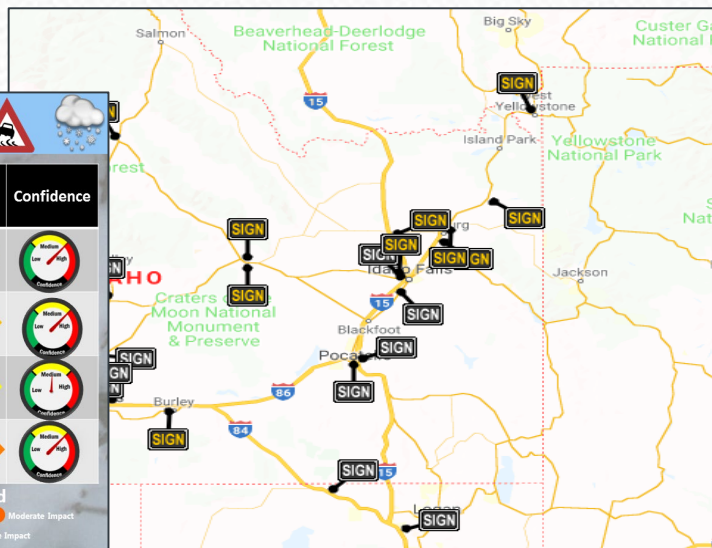
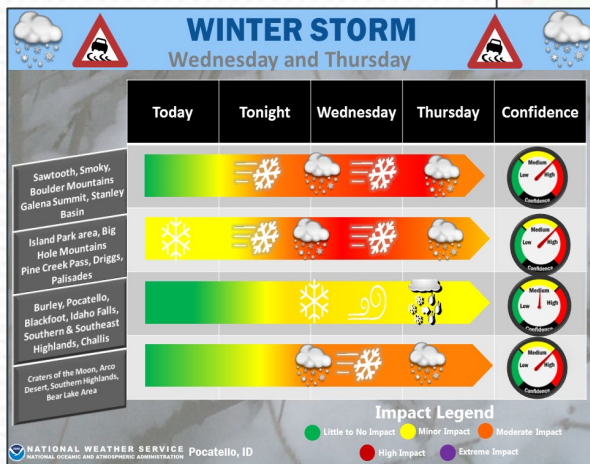
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Pathfinder – The Next Level of Collaboration

Results - knowledge beforehand –
Leads to better decisions for Travelers



**EXTREME WINTER
WEATHER US93 NB
TUE 5PM-WED 11PM**



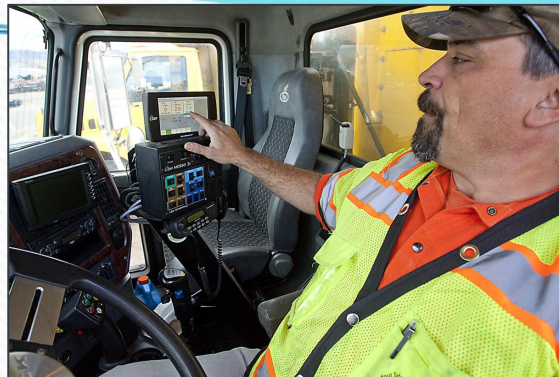
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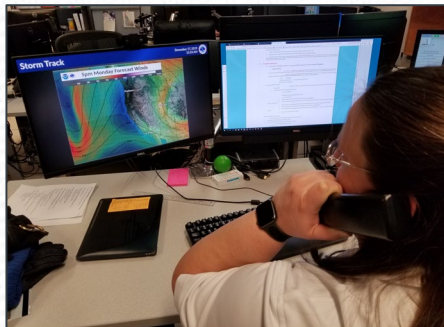


The Next Level of Collaboration

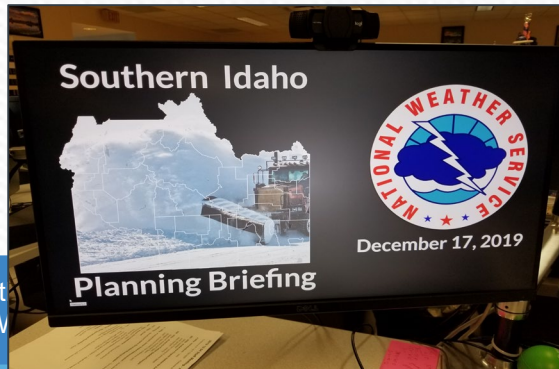
Joint Weather Briefings



Creates a Common Operating Picture



NWS Boise



NWS Pocatello

Began supporting ITD in their operations

Growth with NV

Pathfinder expanding across Idaho



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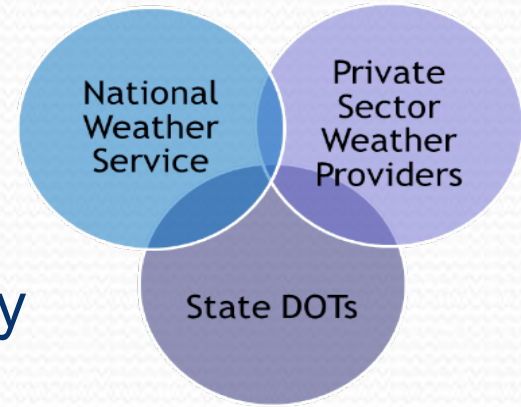
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Summary and Moving Forward

Joint Collaboration is leading to:

- Safer travel conditions
- Reduced winter accidents and fatalities
- Less accidents means less repair costs
- Taxpayer savings due to timely roadway applications and use of personnel



Questions?





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