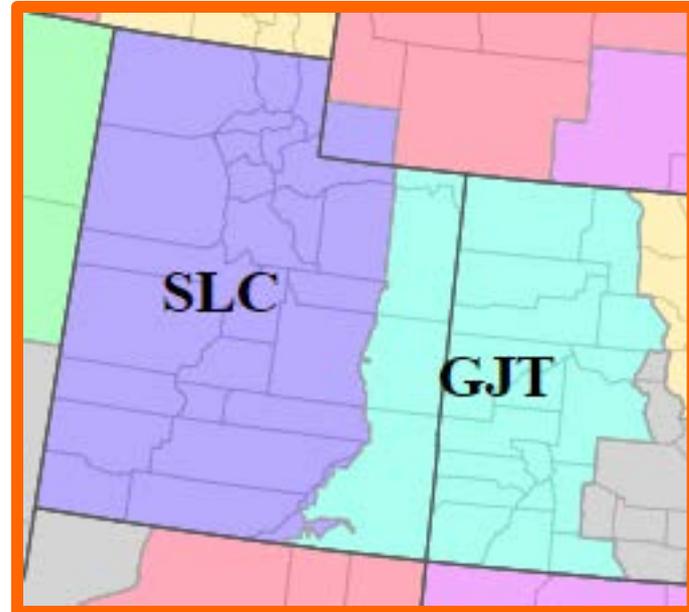




Scott Jensen
Arizona Dust Conference
March 5, 2019



- Overview of Pathfinder
 - Introduction
 - Brief History
- Field Instrumentation
 - RWIS Sites
 - Devices Used
- Blowing Dust/High Wind Example
 - Coordination
 - Products Issued
- Public Messaging and Outreach
 - Effective Messaging
 - Unified Message





**Federal
Government**



**State
Government**

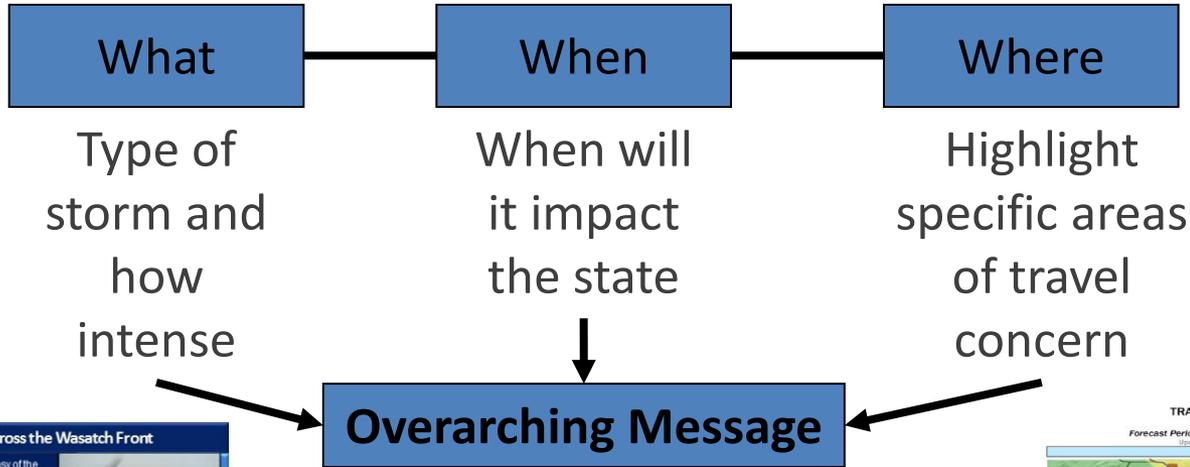


**Private
Sector**

■ What Is Pathfinder?

- Collaborative effort between NWS, state DOT's & DOT contractors
- Sharing road weather information & forecasts
- Creating a unified message to the public regarding transportation impacts

“Not how much snow will fall but how that snow will impact roads”



Overarching Message

Provide tools to influence safe traveling behavior

Heavy Snow for the Evening Commute Across the Wasatch Front

Heavy snow with snowfall rates of 1-2" per hour. Blowing and drifting snow creating hazardous driving conditions.

Camera Images Courtesy of the Utah Department of Transportation

Wendover, Alton, Provo, Vernal, Duchesne, Panguitch, Green River, Hanksville, Moab

500 pm

Winter Storm Warning Remains in Effect

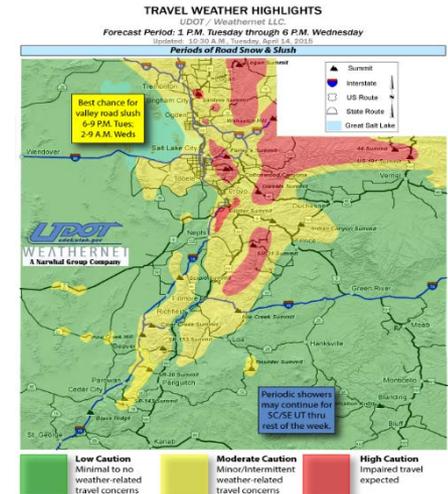
- Snowfall rates of 1-2" per hour early this evening will significantly impact the evening commute
- Snow will turn heavy through Utah county by around 600 pm

Road Impacts

- Cold road surfaces and high snowfall rates will allow for quick accumulation of snow on all road surfaces.
- Travel will be extreme slow due to the slick roads and heavy traffic due to the commute.

Intersection of State and Center Streets in Clearfield

I-215 West at I-80 near the Salt Lake City Intl. Airport

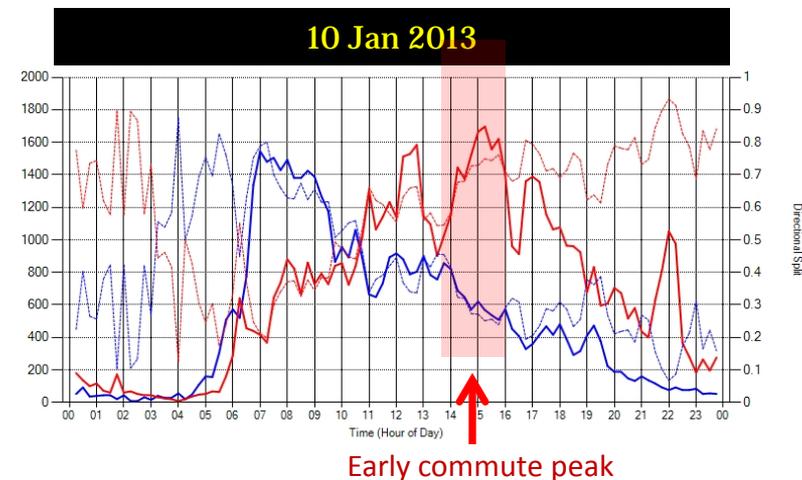
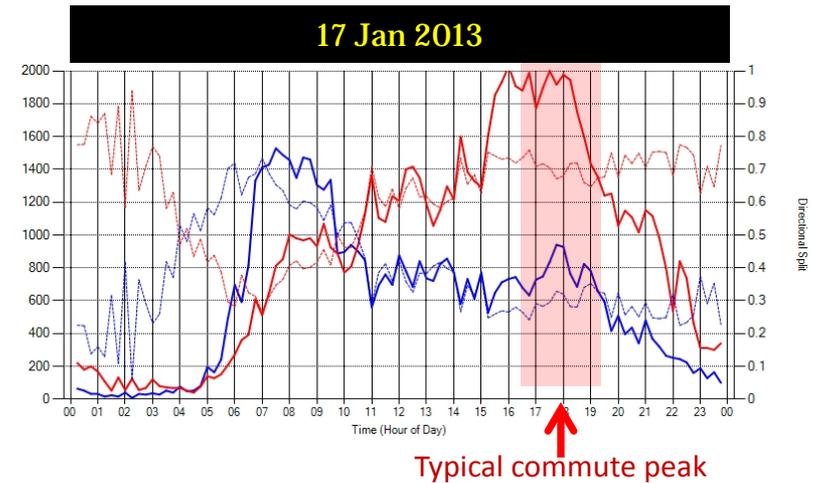


Event Coordination & Response

- Pre-storm briefings 1-3 days prior to event
 - Based on expected level of impact
- Direct communication regarding impacts with nearby NWS offices
- Disseminate internal and public information ahead of and throughout winter storms
- Benefits wide variety of groups

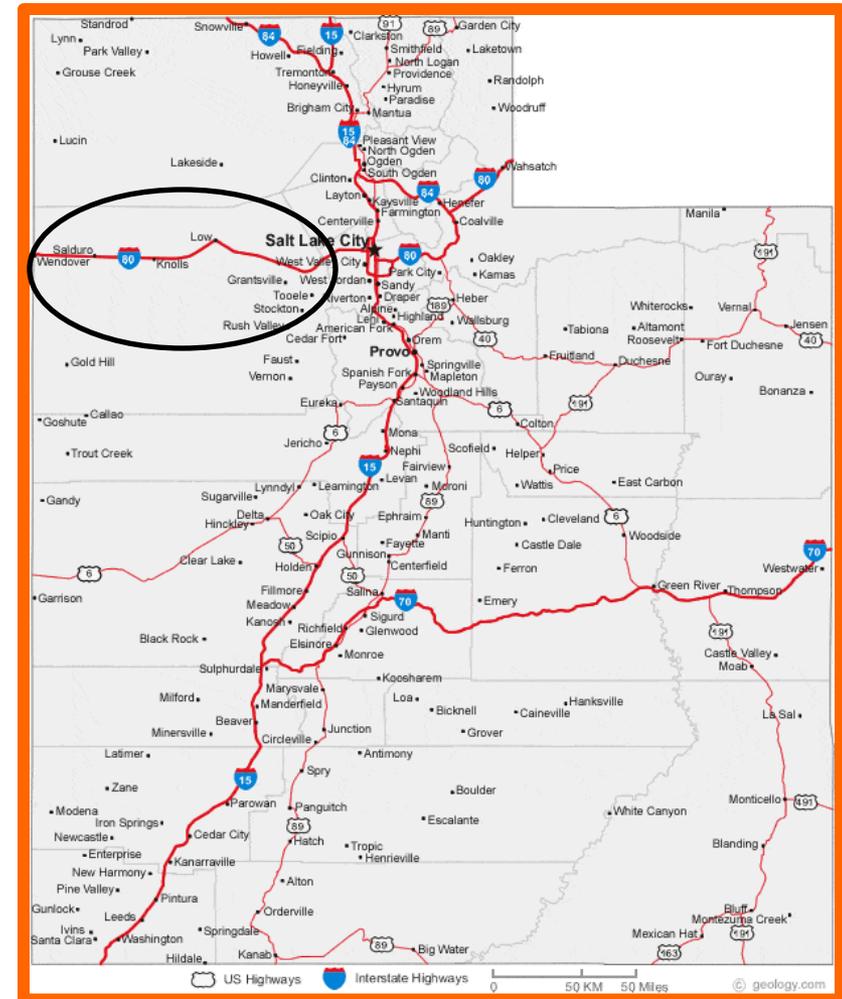


- What's the impact?
 - With a unified message and trusted channel to disseminate that information you can alter the public's behavior and travel plans
 - Peak commute time shifted two hours prior to typical
 - Not just limited to snow events can be used for variety of expected weather impacts



— Southbound — Northbound

- Largest trouble area is I-80 across Utah's western desert and Salt Flats
- Tends to be crosswind
- 10 permanent RWIS sites on I-80 between Salt Lake City and Nevada border
- Localized problem areas due to terrain influence
- Mesowest



RWIS/Field Instrumentation



Blowing Dust/High Wind Example

- Event occurred June 12, 2017
- A total of 8 semi-trucks blew over on I-80, interstate was closed temporarily to all traffic
- A situation not being sampled well by existing sensors
- Significantly reduced visibility at time of incidents

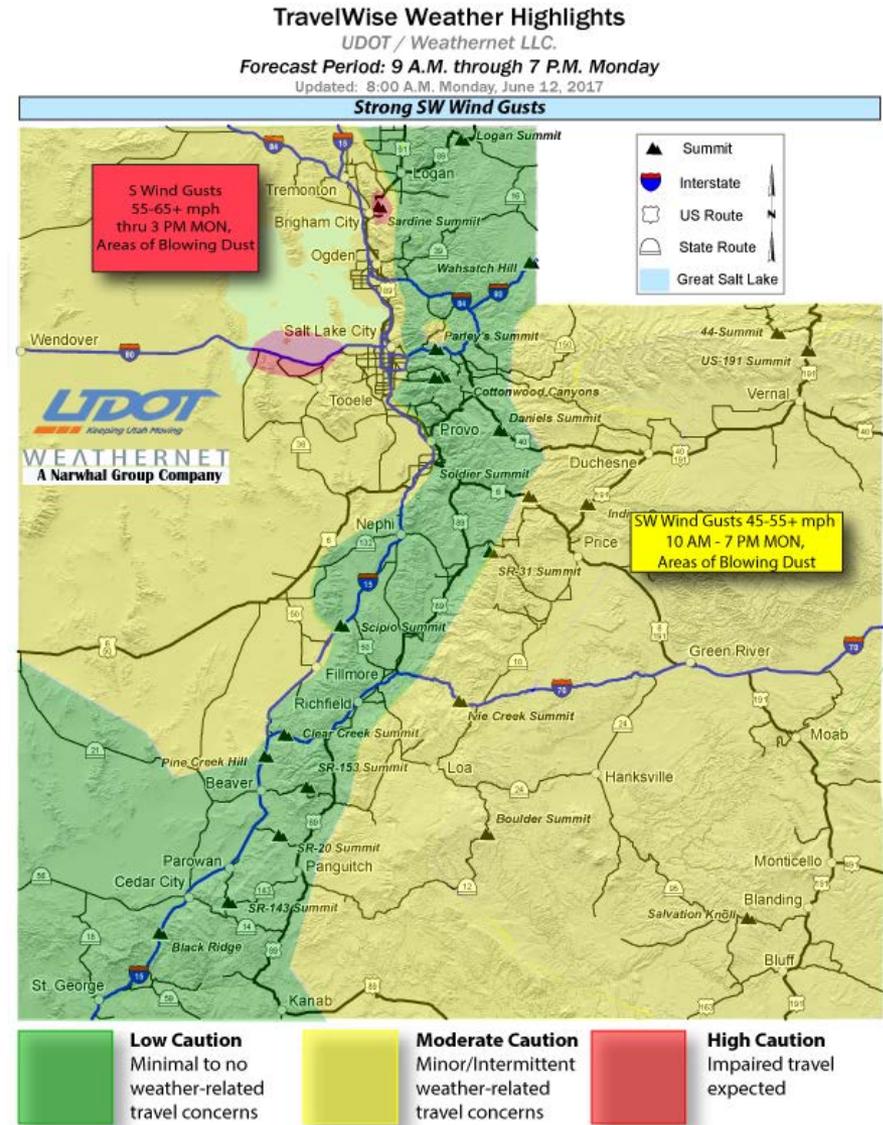


Blowing Dust/High Wind Example

338 AM MDT Mon Jun 12 2017... WIND ADVISORY IN EFFECT FROM 9 AM THIS MORNING TO 10 PM MDT THIS EVENING... The National Weather Service in Salt Lake City has issued a Wind Advisory...which is in effect from 9 AM this morning to 10 PM MDT this evening.

* **AFFECTED AREA...**The west central and southwest valleys of Utah, the Sanpete and Sevier valleys, the Great Salt lake Desert and Mountains, the Salt Lake and Tooele valleys. and the southern Wasatch Front.

* **WINDS...**Southerly winds 20 to 30 mph with gusts approaching 50 mph.



Blowing Dust/High Wind Example

(10:39 AM) nws-steve.rogowski: **Would us issuing a high wind warning help here?**

Can include stronger wording in it than a wind advisory. Thanks.

(10:41 AM) dot-scott.jensen: **Given the impacts we have seen so far** this morning I certainly don't think it could hurt from our perspective.

(10:42 AM) nws-steve.rogowski: OK, let me know what wording you want in there and **I'll take care of issuing a High Wind Warning for the west desert.**

(10:45 AM) dot-scott.jensen: **I would just be sure to mention strong cross winds affecting I-80, especially high profile vehicles of course.** Given the placement of the winds in the west desert there are not a lot of other routes we typically see impacts on.

(10:46 AM) nws-steve.rogowski: Perfect, thanks. Will be out in 5 minutes. We will tweet it too.

(10:47 AM) dot-scott.jensen: If it helps with justification for the warning we are now up to 7 blow-overs.

(10:47 AM) dot-scott.jensen: Appreciate the outreach!

(10:47 AM) nws-steve.rogowski: We appreciate the heads up on the blow overs

Blowing Dust/High Wind Example

1049 AM MDT Mon Jun 12 2017 ...**HIGH WIND WARNING** IN EFFECT UNTIL 10 PM MDT THIS EVENING... The National Weather Service in Salt Lake City has issued a High Wind Warning...which is in effect until 10 PM MDT this evening. The Wind Advisory is no longer in effect.

- AFFECTED AREA...**The West Desert including Interstate 80. * **WINDS...**Southwest winds 30 to 40 mph with gusts exceeding 60 mph at times.
- * **TIMING...**Strong southwest winds continuing through the afternoon and gradually diminishing this evening.
- * **IMPACTS...**Significant travel impacts are anticipated for high profile vehicles and those towing trailers, especially where crosswinds are enhanced on east-west routes including Interstate 80. Blowing dust will also create areas of reduced visibility this afternoon through early this evening. Wind sensitive operations will be impacted.
- For information on potential travel impacts visit...**
<http://udottraffic.utah.gov/roadweatherforecast.aspx>

- Focus on the “message”, not the meteorology
 - *“First, it should be understood that forecasts possess no intrinsic value. They acquire value through their ability to influence the decisions made by users of the forecasts” – Allan Murphy*
- Don’t instruct the public, give them tools and options to make the best decision themselves
- Detail road specific impacts
- Share plan of actions
 - UDOT (outreach, products, etc.)
 - NWS (suite of information services)
- Not every situation is the same, messaging can vary based on area affected, confidence, duration etc.

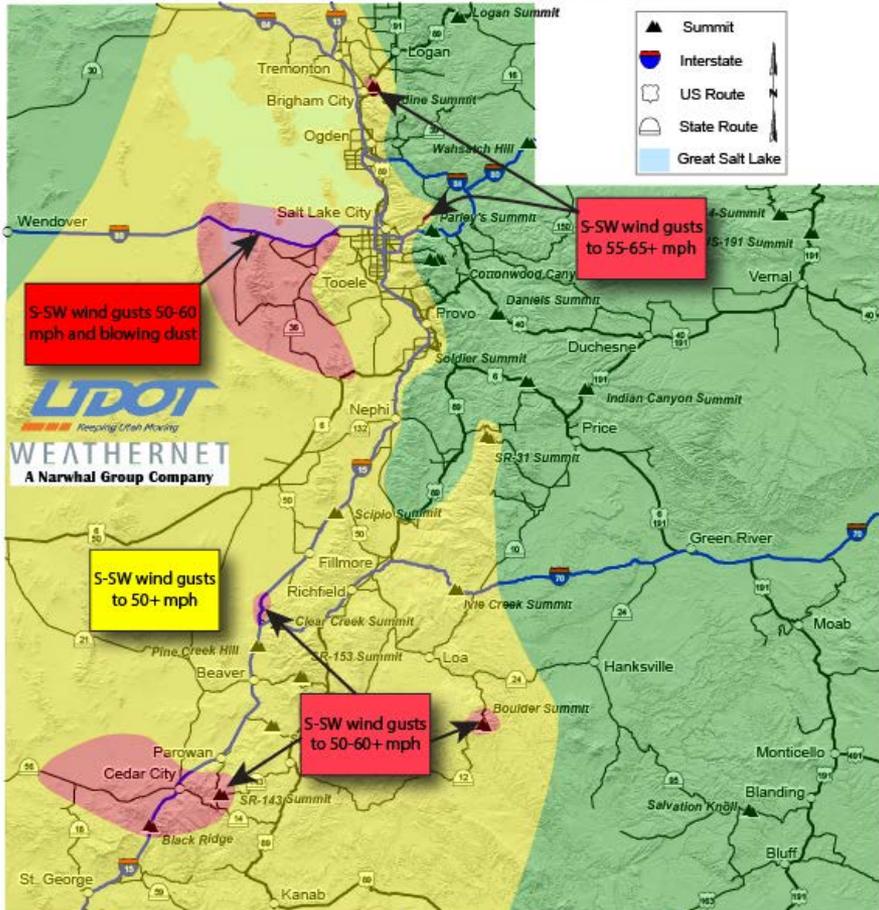
TravelWise Weather Highlights

UDOT / Weathernet LLC.

Forecast Period: 11:00 A.M. Friday through 11 P.M. Friday

Updated: 10:00 A.M., Thursday, May 19, 2016

S-SW Crosswind Gusts 45-65 mph and Blowing Dust



Low Caution
Minimal to no weather-related travel concerns

Moderate Caution
Minor/Intermittent weather-related travel concerns

High Caution
Impaired travel expected

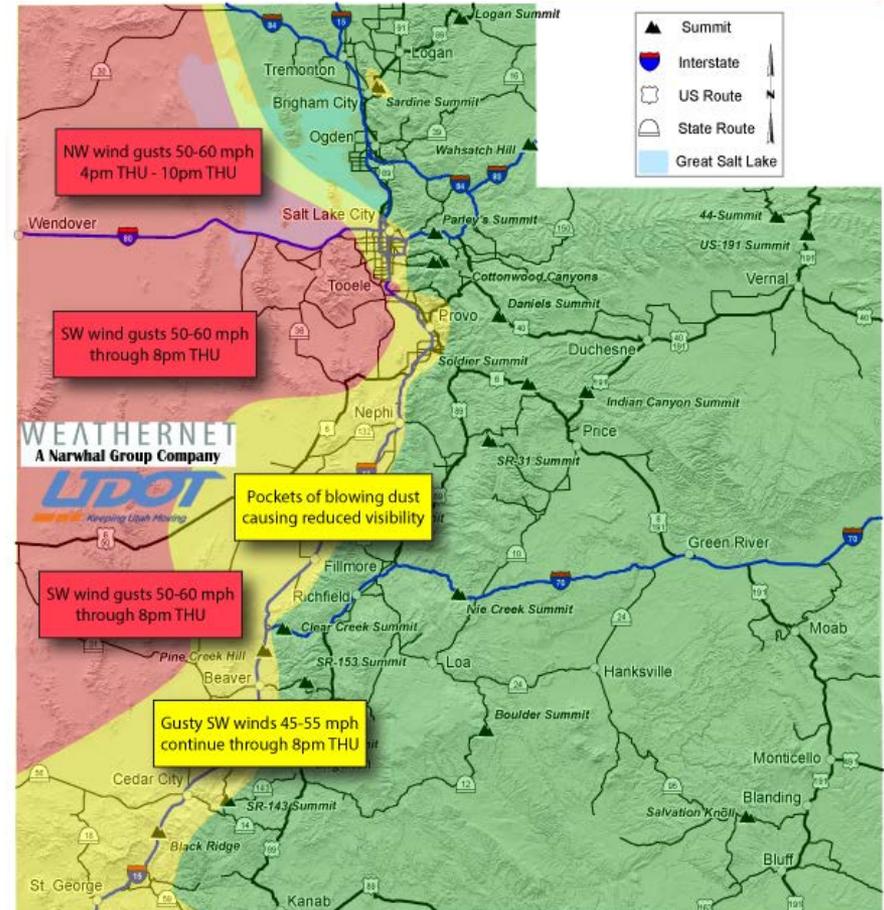
TravelWise Weather Highlights

UDOT / Weathernet LLC.

Forecast Period: Ongoing through 10 P.M. Thursday

Updated: 10:00 A.M., Thursday, April 13, 2017

Strong SW Winds followed by Strong NW Winds



Low Caution
Minimal to no weather-related travel concerns

Moderate Caution
Minor/Intermittent weather-related travel concerns

High Caution
Impaired travel expected

Messaging

- Be as specific as possible regarding impacts
- Help the public to make the best decision
- Give observations if possible
- Update information as it changes



Messaging



Contact Information

Scott Jensen

Salt Lake City, Utah Office

Operations Manager

scottj@nw-weather.net

(801) 887-3703

www.narwhalgroup.com

