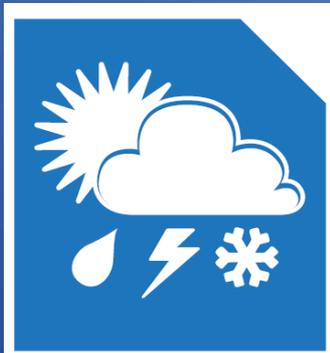


2014 Road Weather Management Stakeholder Meeting

August 13, 2014



Rob Clayton, P.E., PTOE
Utah Department of Transportation
Director, Traffic Management Division

Welcome to Utah!

- Home to 2,855,000 people
- Variety of climates
- 13 national parks bringing 8,981,000 visitors in 2013 and \$596,500,000 in economic benefit
- 26,000 acres of skiing and over 4 million ski visitors/season
- Ski resorts get 400+ inches snow per year
- Kings Peak (Uinta Mountains) elevation 13,528 feet!



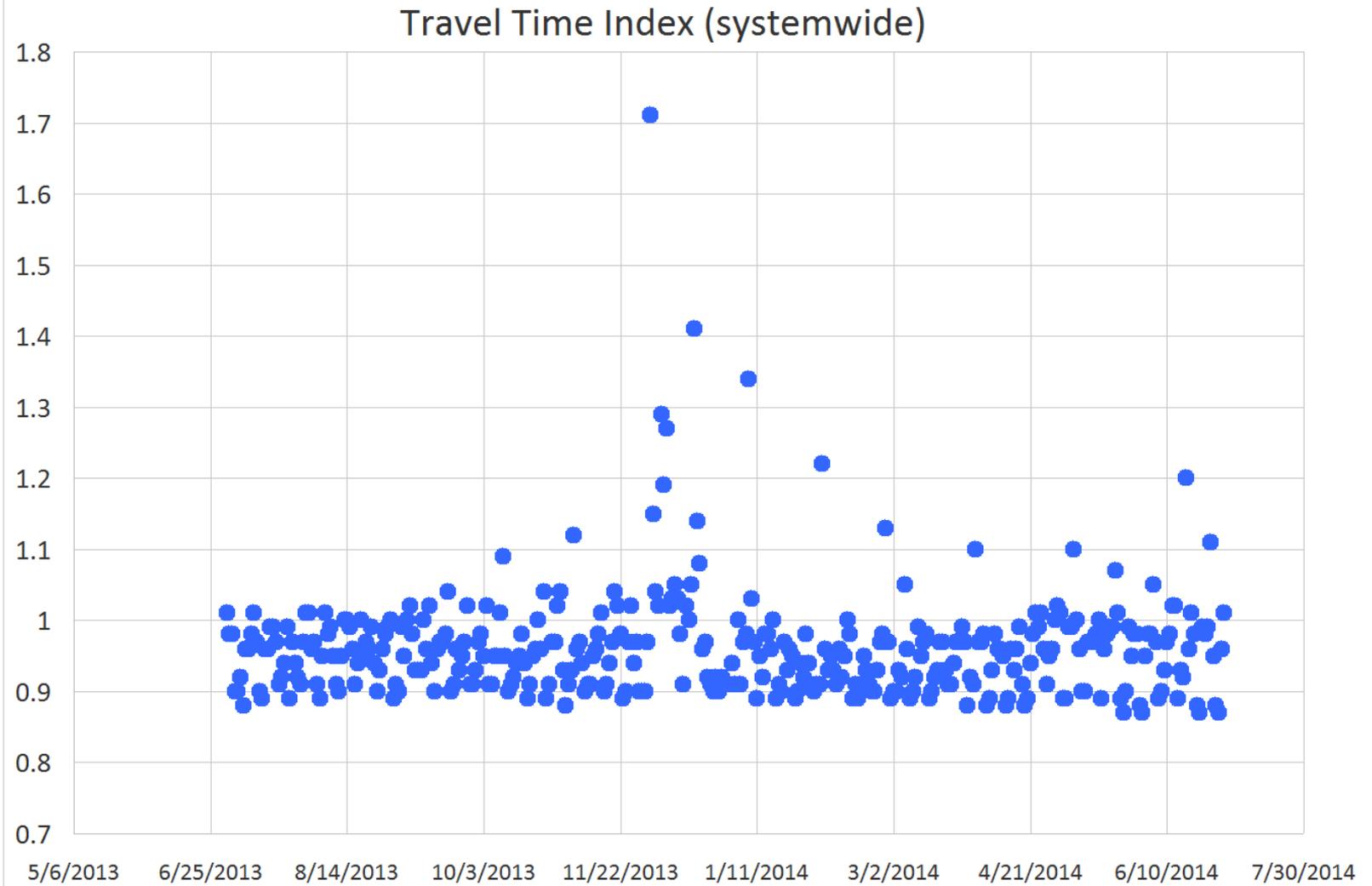
UDOT Road Weather Traffic Management

Common Utah weather challenges:

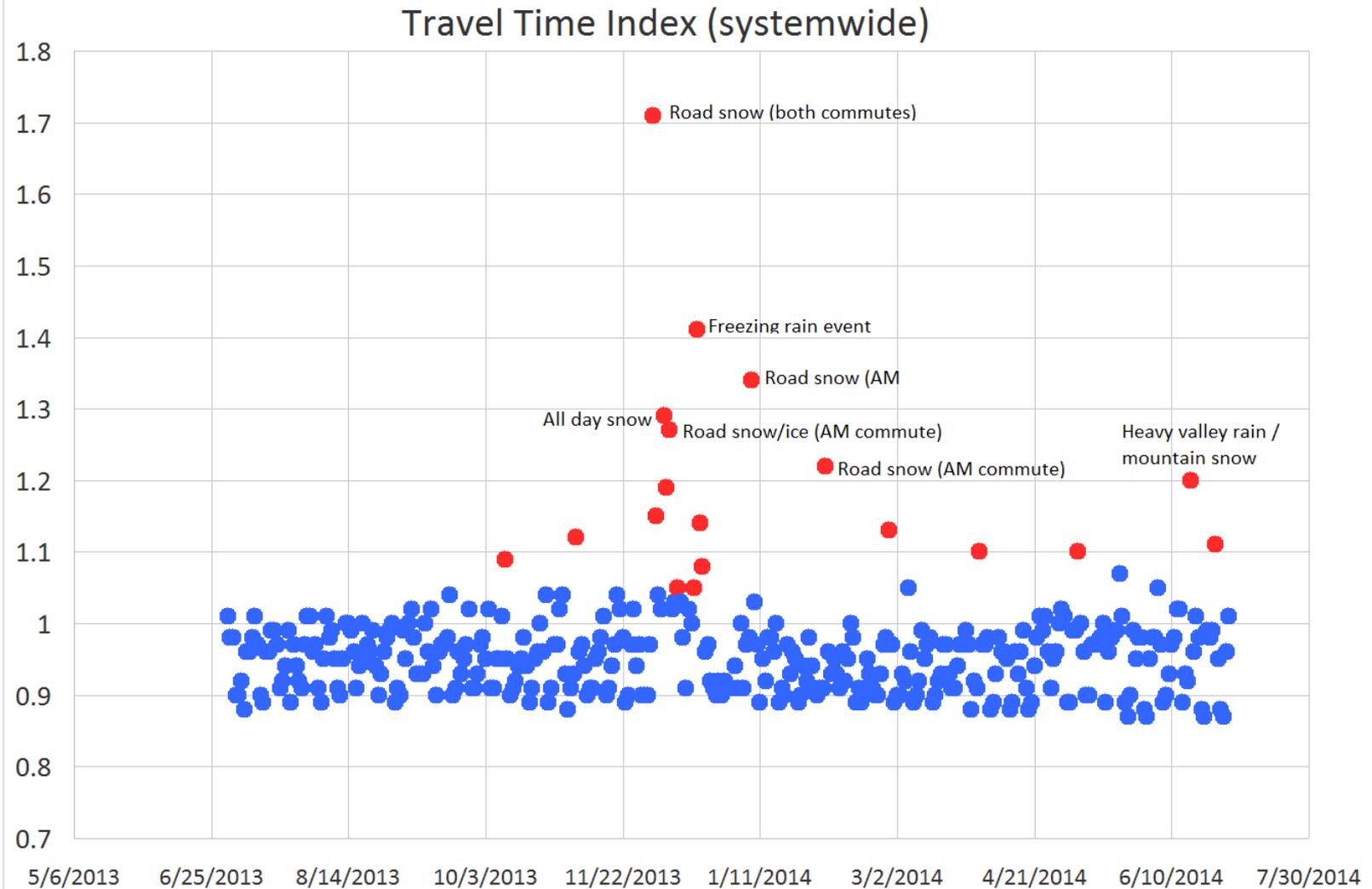
- Road snow & ice
- Avalanches
- High winds
- Wild fires
- Flooding
- Dust storms



Weather and Travel Time Reliability



Weather and Travel Time Reliability

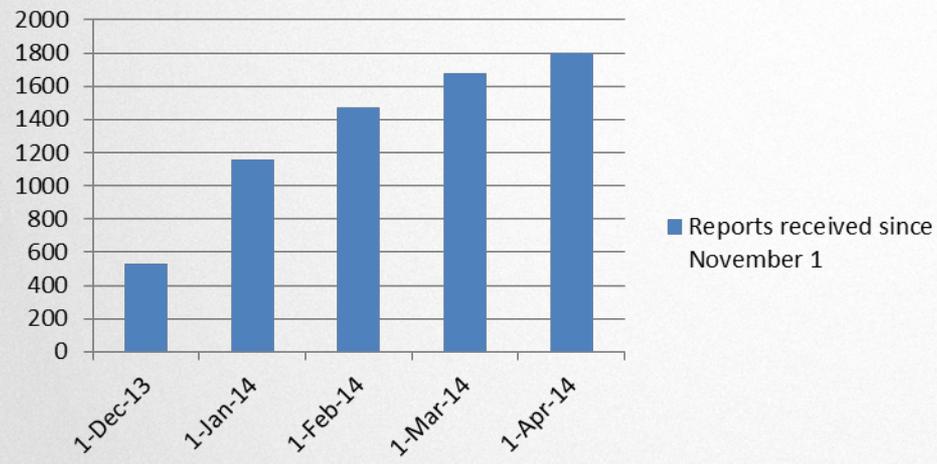




UDOT Citizen Reporter Program

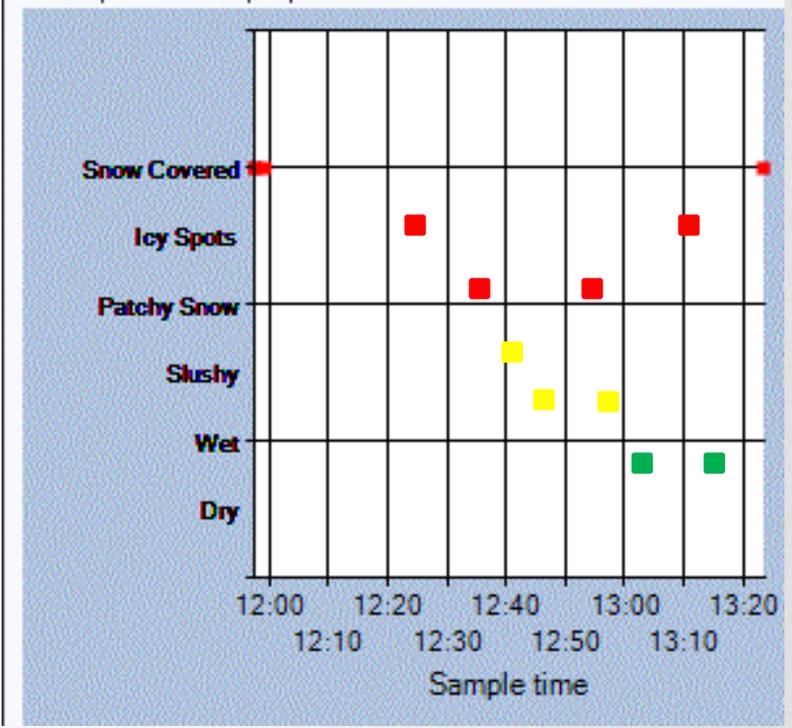
- Incoming reports 99.97% accurate
- 2013-2014 season: 475 reporters
- 125 of 145 reporting routes covered
- <http://udottraffic.utah.gov/CitizenReporting.aspx>

Reports received since November 1



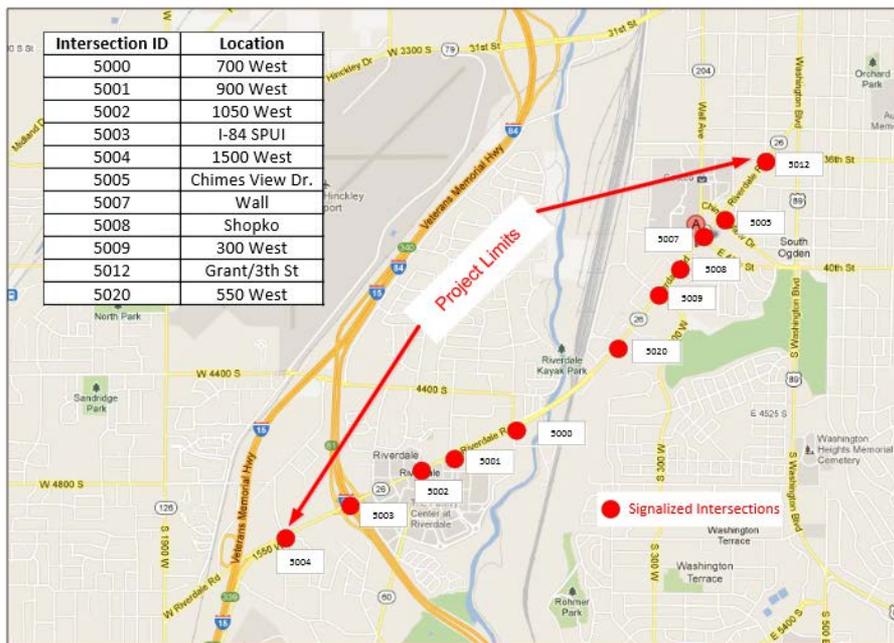
I-15 Orem to Provo

Road Surface : snow covered
 Weather : clear
 Restrictions : none
 Last Updated : 10/23/2013 3:08 PM



UDOT Weather Responsive Traffic Signals

- Goal: Making UDOT's traffic signal systems more responsive to changes in traffic demands and speeds due to weather
- <http://ntl.bts.gov/lib/51000/51100/51165/C42F9252.pdf>



Signal Performance Metrics



UDOT Signal Performance Metrics Dashboard

Charts Reports Log Action Taken Links FAQ

Signal Metrics

Selected Signal: No Signal Selected

Signals: Region: All Metric Type: All Filter: Signal Id Filter Clear Filter

Signal List

Map

Metric Settings

Metric Type

- Approach Delay
- Approach Volume
- Arrivals On Red
- Purdue Coordination Diagram
- Purdue Phase Termination
- Speed
- Split Monitor
- Turning Movement Counts

Time Y Axis Maximum: 150
Volume Y Axis Maximum: 2000
Volume Bin Size: 15
Dot Size: Small

Show Plan Statistics
 Show Volumes
[Export Data](#)
 Upload Current Data

Dates

Start Date: 7/31/2014 12:00 AM
End Date: 7/31/2014 11:59 PM
[Reset Date](#)

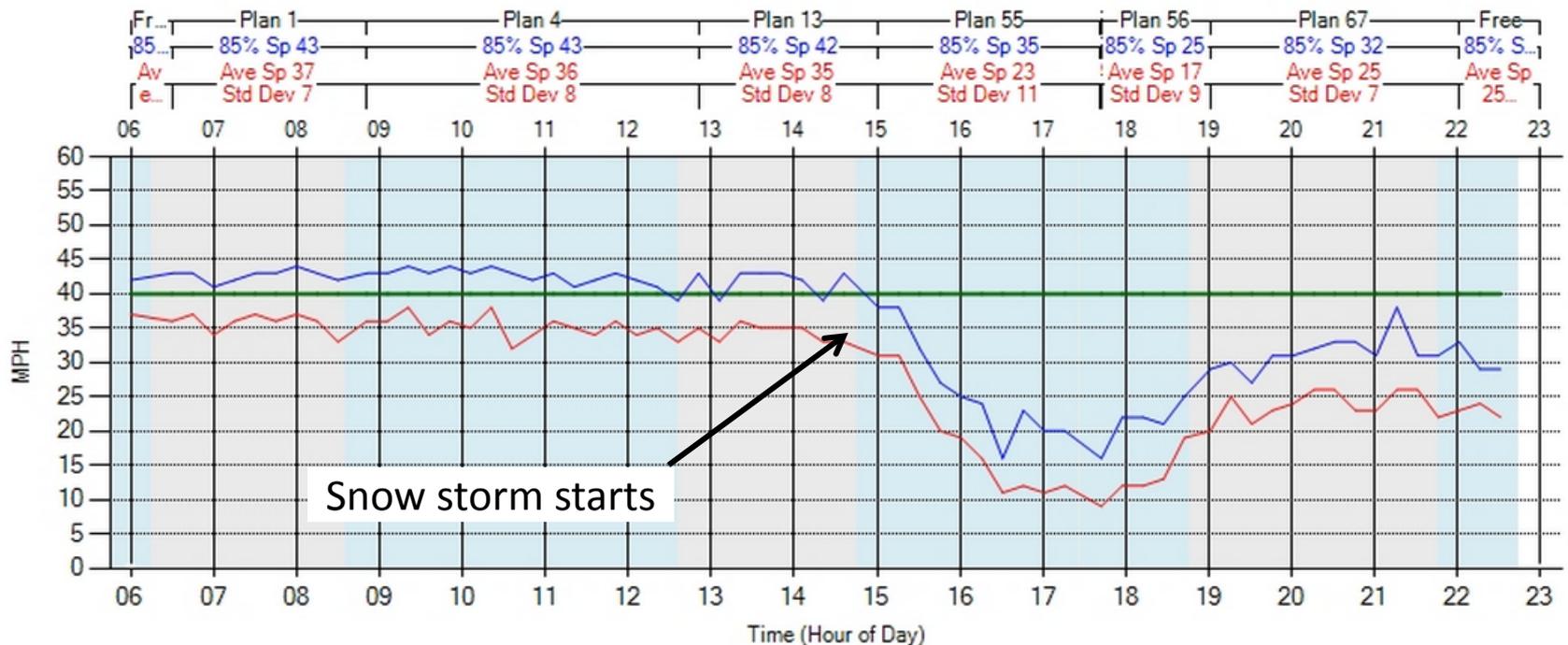
Sun	Mon	Tue	Wed	Thu	Fri	Sat
29	30	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	1	2
3	4	5	6	7	8	9



UDOT Weather Responsive Traffic Signals

Riverdale Rd Shopko Signal 5008 Phase 2 Northbound
Thursday, January 10, 2013 6:00 AM - Thursday, January 10, 2013 11:00 PM
Detector Distance from Stop Bar: 350 feet; Min Speed Filter: 5 MPH;
Time Filter: 15s after start of green to start of yellow
Speed Accuracy: +/- 5 MPH

— Posted Speed
— 85th Percentile Speed
— Average MPH



UDOT Winter Road Weather Index

- “WRWI” is a real-time measure of the severity of weather elements on a road surface
- Uses - Maintenance resource optimization, traffic congestion, variable speed limit, citizen reporting verification, Weather Responsive Traffic Management
- Tested 2013-2014, statewide use planned for the 2014-2015 winter season
- Data variables:
 - Road condition and “Grip” (or coefficient of friction)
 - Road temperature
 - Precipitation occurrence
 - Visibility (combined with precipitation occurrence to differentiate fog from snow)
 - Wet-bulb temperature (colder = drier snow)
 - Wind gust (≥ 20 mph)

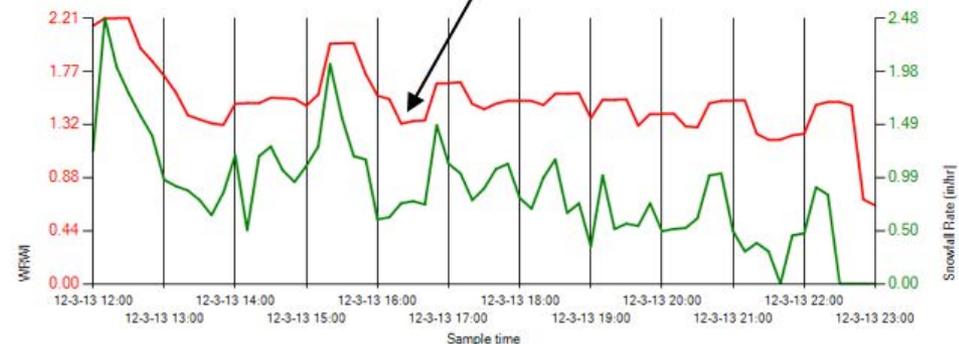
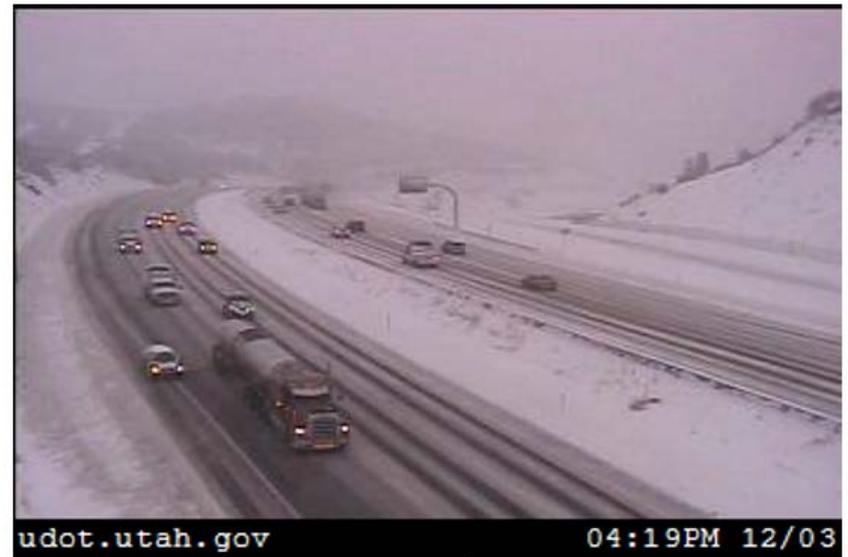
UDOT Winter Road Weather Index

Baseline WRWI = 1

WRWI > 1 means we are losing ground to weather impacts

- I-80 at Parley's Summit, December 3, 2014
- Recall earlier: systemwide TTI = 1.7
- WRWI was 1.3 or greater all day

I-80 @ Parley's Summit



UDOT Road Weather Traveler Information

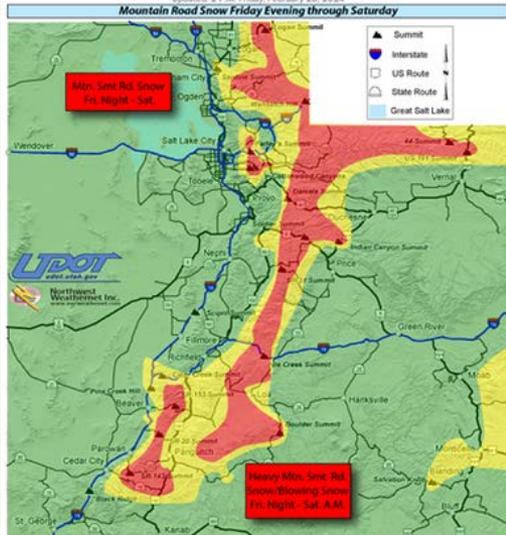
UDOT Utah DOT
February 28

Utah Road Weather Highlights
Friday Afternoon Through Saturday Evening

- All northern valley routes will run wet under any rain through the period.
- Standing water will be a threat on I-80 in lower Parley's Canyon (just east of the Salt L... See More

TRAVEL WEATHER HIGHLIGHTS

UDOT / NorthWest WeatherNet
Forecast Period: 3 P.M. Friday through 5 P.M. Saturday
Updated: 2 P.M. Friday, February 28, 2014
Mountain Road Snow Friday Evening through Saturday



Low Caution
Minimal to no weather-related travel concerns

Moderate Caution
Minor/intermittent weather-related travel concerns

High Caution
Impaired travel expected

Like Comment Share

2 3 Shares

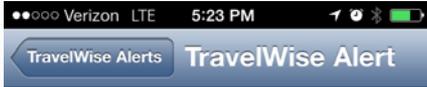


UDOT Traffic @UDOTTRAFFIC

11 Nov

WEATHER ALERT: Heavy road snow will continue to impact I-80 thru Parley's Cnyn this morning. udottraffic.utah.gov /CLALertViewer.... pic.twitter.com/CvhmfUfe

View photo



Freezing Rain

A winter storm will create slick roads across the northern half of Utah beginning Wednesday night and continuing into Thursday. The Thursday morning commute will be heavily impacted due to icy roads. Weather conditions will affect travel throughout the day on Thursday as the ice/rain turn to snow. Driving conditions in some areas may be hazardous.

The biggest impact areas include: The Wasatch Front, Tooele Valley, Cache Valley, lower mountain valleys such as Morgan and Heber, Delta and the West Desert and the Moab areas.

Motorists are advised to allow more time to reach destinations, consider cancelling unnecessary travel and increase following distances.

TRAVEL WEATHI

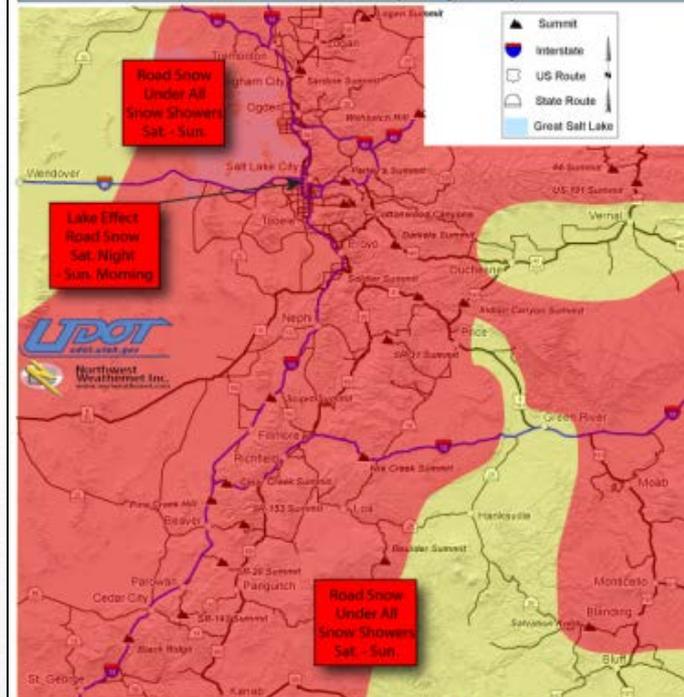
UDOT / NorthW

Forecast Period: 8 P.M. Wedne



TRAVEL WEATHER HIGHLIGHTS

UDOT / NorthWest WeatherNet
Forecast Period: 4 A.M. Saturday through 6 P.M. Sunday
Updated: 1:30 P.M. Friday, December 5, 2013
Statewide Road Snow Saturday through Sunday



Low Caution
Minimal to no weather-related travel concerns

Moderate Caution
Minor/intermittent weather-related travel concerns

High Caution
Impaired travel expected



Thank you!

