UDOT Automated Freeway Performance Metrics

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Automated Freeway Performance Measures

- Project Inception
 - Comparison of overall freeway performance
 - Objective data vs. anecdotal perception
 - Data driven decisions

UDOT's Freeway Detection System

Transuite
UDOT Traffic map, travel times, ramp meters

3,070 Detectors
94% Operational

Iteris PeMS (Performance Management System)
Data cleaning, historical data aggregation & analysis

Umbrella Traffic Performance Metrics Website

<http://udottraffic.utah.gov/performancemetrics/>

Freeway Performance Metrics Website

The screenshot displays the Utah DOT Freeway Performance Metrics website. The header features the Utah DOT logo with the tagline "Keeping Utah Moving" and the title "Freeway Performance Metrics". A navigation bar includes links for Traffic Metrics Home, Freeway Metrics Home, Links, FAQ, Travel Time, Speed Report (highlighted), Congestion Forecast, Mobility Cake, and Freeway Reliability.

The main content area contains several interactive elements:

- Start Date and End Date:** Two calendar widgets for January 2016. The Start Date calendar has the 11th selected, and the End Date calendar has the 18th selected.
- Time of Day:** A section with radio buttons for AM and PM, and a "Specific Time" input field.
- Day of Week:** A dropdown menu currently set to "Days".
- Corridor:** A dropdown menu with options: I-15, I-215, I-80, SR-201, US-189, and Legacy. A "Corridor Detail" button is located below the dropdown.
- Direction:** A dropdown menu.
- Mileposts:** Input fields for "Start Milepost" and "End Milepost", and a "Show Stations" button.
- Map:** A map of Utah showing major highways and cities. Labels include Battle Mountain, Soda Springs, Rock Springs, Salt Lake City, Provo, Anvada, Denver, Pagosa Springs, and Henderson. The map is credited to "© 2016 HERE © 2016 Microsoft Corporation".
- Speed Graph:** A section titled "Speed Graph" with a "RunReport" button and a "Speed Report" label.

The background of the website interface is a scenic image of a winding highway through a desert canyon.

<http://udottraffic.utah.gov/freewayperformancemetrics/>

Building Freeway Performance Measures

- Brainstorm –
 - What is needed
 - What are we trying to measure
 - What actions can we take from this metric
- Create a prototype
- Present to senior leadership
- Make adjustments
- Document process
- Allow inhouse software developers to use their creativity

Speed Report – Created with Adobe

Automated Speed Report

Mileposts

Start Milepost: 307.24

End Milepost: 277.71

Show Stations

Speed Graph

RunReport

Speed Report

Speed Report: I-15

Dates: 12/1/2015 - 12/31/2015 Time: 5:00 PM - 6:00 PM Days: Tuesday, Wednesday, Thursday
Direction: Southbound

Mobility Cake

- Show the delay that can be attributed to the incidents, construction, and weather.
- Show where the delay is occurring on a corridor.
- Make assumptions that can be easily understood - don't be a black box algorithm.
- Leverage existing databases and ITS infrastructure

Mobility Cake

Mileposts

Start Milepost: 307.24

End Milepost: 284

Show Stations

Mobility Graph

Run Report

Mobility Cake

Mobility Cake Report: I-15 SB

Dates: 12/1/2013 - 12/31/2013 Days: Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday

UDOT Automated Performance Metrics

1. Online

- Speed Report
- Travel Time

2. Staging

- Mobility Cake
- Traffic/Incident Time-Lapse
- Reliability

3. Future

- Delay
- Volume-Balance
- Ramp Meter Wait Time

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Questions?