

Western States Rural Transportation Consortium Meeting

June 16, 2015

Overview/Agenda

- Welcome / Introductions
- Western States Forum Preview
- WSRTC Pooled Fund updates/discussions
- Incubator updates
- General project discussion
- Website, LinkedIn Group
- Roundtable of recent/planned ITS activities
- Other discussions (as needed)

Western States Rural Transportation Technology Implementers Forum

Preview



Western States

Rural Transportation
Technology Implementers

Forum

Western States Rural Transportation Technology Implementers Forum

June 16-18, 2015

Yreka, California

Holiday Inn Express



Western States

Rural Transportation
Technology Implementers

Forum

Presentations/Demonstrations

Multnomah Falls Parking Management System

Dennis Mitchell, Doug Spencer, Oregon Department of Transportation

The Nevada Data Exchange (NDEX): An Internet Portal for Public and Strategic Partners to Publish Their Data and Subscribe to NDOT's Traveler Information

Israel Lopez, Nevada Department of Transportation

WYDOT Roadside WiFi and Tablet App

Mark Kelly, Wyoming Department of Transportation

Caltrans Advanced Variable Message Sign

David Wells, Caltrans Headquarters



Western States

Rural Transportation
Technology Implementers

Forum

Presentations/Demonstrations

UDOT Citizen Reporter Program

Corey Coulam, Lisa Miller, Utah Department of Transportation

Safety Chain Control System

Keith Koeppen, Caltrans District 2

TranSync Mobile Tool: Traffic Signal Management and Retiming Tool

Martha Styer, Hongchao Liu, Dali Wei, Caltrans Headquarters

Idaho Transportation Department Winter Performance Measures

Robert Koeberlein, Dennis Jensen, Idaho Transportation Department



Schedule of Events

Tuesday, June 16th

- 4:00 pm Registration
- 5:00 pm Reception (no-host)
- 6:30 pm Dinner, Networking

Wednesday, June 17th

- 8:00 am – 5:15 pm Technical Program
- 6:00 pm Social, Networking

Thursday, June 18th

- 8:00 am – 12:15 pm Technical Program



Discussion

- 10th Annual Western States Forum
- 41 Participants Registered:
 - By State:
 - CA (28)
 - ID (1)
 - MT (2)
 - NV (3)
 - OR (3)
 - UT (1)
 - WA (2)
 - WY (1)



Discussion

Caltrans Participants:

- D1 (1)
- D2 (8)
- D3 (1)
- D4 (4)
- D8 (1)
- D9 (1)
- D10 (3)
- HQ (6)
- DRISI (1)



Discussion

– Participants from Other Agencies:

- AHMCT UC Davis (1)
- Idaho Transportation Department (1)
- Nevada Department of Transportation (2)
- Oregon Department of Transportation (3)
- Trans-Intelligence, LLC (1)
- University of Nevada Reno (1)
- Utah Department of Transportation (1)
- Washington State DOT (2)
- Western Transportation Institute (2)
- Wyoming Department of Transportation (1)

www.westernstatesforum.org

WSRTC Pooled Fund update/discussion

WSRTC Meeting Coordination, Western States Forum Travel Support and Website Maintenance (Task Order 5)

- Start Date: 8/1/2014
- End Date: 6/30/2016
- Budget: \$91,000
- WSRTC Meeting Facilitation and Attendance:
 - NRITS 2015
 - Other meetings via teleconference as needed.
- Western States Forum Support
- Website Content and Maintenance
- Estimated \$74,000 remaining after May.

Rural Traveler Information (One Stop Shop) (Task Order 2)

- Start Date: 10/1/2011
- End Date: ~~9/30/2014~~ extended to 6/30/2016
- Budget: \$150,000
- Estimated approximately \$50,000 remaining after May 2015.

WSRTC Pooled Fund

- Interest in renewal of Pooled Fund after expiration (June 30, 2016)
- Other Items for Discussion

Incubator Project Updates

Data Quality for Aggregation and Dissemination of DOT Traveler Information: An Analysis of Existing System Best Practices

- Phone Interviews were conducted with the following state DOTs:
 - CA, ID, MT, NV, OR, UT, WA
- Contact was made with:
 - CO, WY
- Email was sent to:
 - AZ, NM
- All discussions have been positive and those interviewed have expressed great interest in the project.
- A presentation is planned for NRITS 2015 in August

Chain-up Delay Tracking with Bluetooth

- Bluetooth to be used for wait time estimation at chain-up area.
- Prospective Deployment Recommendations and Sources for Bluetooth Readers document finalized
- Subsequent work depends on deployment
- Additional technologies such as MVDS may be included

Evaluation of the Fredonyer Summit Icy Curve Warning System –Before and After Study of Long-Term Effectiveness

- David V. is wrapping this up
- All data has been collected
- Several more interviews need to be done

Fredonyer Pass Icy Curve Warning System

an update from
David Veneziano

Fredonyer ICWS

- Project objective: evaluate the longer-term operational, safety and maintenance aspects of the ICWS
- Status: Wrapping up interviews with CHP and Susanville Maintenance and finishing report
 - Draft will be sent for review and comment in the next few weeks, time permitting
- Preliminary results: indicate system appears to have maintained speed trends observed earlier and crashes have been reduced

Fredonyer ICWS

- Tasks:
 - Literature review update
 - Analysis of radar speed data
 - Analysis of crash data
 - Document maintenance/CHP experience and views

Fredonyer ICWS Crash Analysis

- Examine crash data and trends before and after the deployment of ICWS
- Used observational before-after study method employing the Empirical Bayes technique
 - Addresses concerns such as regression to the mean, changes in traffic flow, and other factors
 - Used 4.5 years of before data (January 1, 1998 – June 30, 2002) and 6.75 years of after data (July 1, 2008 – April 15, 2015)

Fredonyer ICWS Crash Analysis

- Results
 - Calculating the index of effectiveness (θ), ICWS reduced crashes by 15% during after period (annual)
 - Slightly different than original reduction of 18% computed using 1.5 years of post-deployment crash data
 - Given the longer after period used in this analysis, this result can be considered more reliable and a reflection of the true impact of the system
 - Assumption that changes in crashes attributed to presence of the ICWS, as no other geometric or safety improvements were made during the study period

Fredonyer ICWS Crash Analysis

- Observed crash rates by severity also improved

Study Period	Crash Rate (ice-related crashes per winter season)				
	Total	PDO	Injury	Fatality	Fatality + Injury (F+I)
Before	8.38	5.51	2.42	0.44	2.86
After	4.29	2.14	2.00	0.14	0.31

- Indicates that vehicles may be traveling slower = lower severity
- Based on these improvements, estimated safety benefit of \$1.03 million

Fredonyer ICWS Speed Analysis

- T-tests employed to determine statistical significance between speeds
- Speeds differences of 0 mph, 3 mph and 5 mph examined
- Speeds evaluated for system state (on/off), day/night and weather

Fredonyer ICWS Speed Analysis

- System state
 - Speeds were significantly lower at 0 mph, 3 mph and 5 mph when system was on
- Day/Night
 - Speeds were significantly lower at 0 mph and 3 mph when system was on during both day and night
 - Mixed significance at 5 mph, which may be indicative that speeds reductions are on a smaller order for some signs versus others

Fredonyer ICWS Speed Analysis

- Weather
 - Speeds were significantly lower at 0 mph and 3 mph when system was on during both day and night
 - Day - mean speeds fell between 1.03 mph and 10.73 mph
 - Night - mean speeds fell between 4.31 mph and 16.14 mph
 - At 5 mph, mixed results for significance were produced after October 2013
 - May be indicative that speeds are climbing as drivers are becoming complacent with the warning from the system
 - Also possible that less severe weather in recent years has influenced speeds trends

Fredonyer ICWS Speed Analysis

- Clear Cold Dry/Not Dry
 - Mean speeds statistically different at 0 mph during day and night when signs on
 - Most mean speeds statistically different at 3 mph during day and night when signs on
 - Only limited number of mean speed differences greater than 5 mph
 - Appears ICWS prompts approximately 3 mph speed reductions when icy roads are not necessarily expected

Fredonyer ICWS Conclusions

- Crashes – initial results indicate that crashes have been reduced by approximately 15%
 - More reliable result given the 6+ years of “after” crash data
- Speeds – system appears to reduce speeds by approximately 3 mph during clear, cold and not dry conditions
 - Results pertain to sites prior to entering curves (where radar units were located)
 - Greater reductions are possible/hypothesized as vehicles traverse curves

General project discussions

Spin-Off Projects – On-Going

- Professional Capacity Building (PCB) for Communication Systems
 - Phase 3 in progress
 - Telecom Wireless Fundamentals was delivered March 9-13, 2015
- Western States One Stop Shop for Rural Traveler Information
 - Phase 2 in Progress
 - 10/1/2011 - ~~9/30/2014~~ 6/30/2016
- WeatherShare
 - Phase 3 in Progress
 - 7/3/2012 – ~~6/29/2014~~ 12/31/2015

Spin-Off Projects – On-Going

- Integration of Aviation AWOS with RWIS
 - Phase 3 Initiated
 - 7/3/2012 – ~~6/29/2014~~ 12/31/2015
- WeatherShare Integration with QuickMap
 - Initiated
 - 3/17/2014 – 6/30/2017
- Automated Safety Warning Controller
 - Not contracted yet, will do so through WSRTC soon.
 - Summer 2015 - ???

Website, LinkedIn Group

Roundtable of Recent ITS Activities

Upcoming Steering Committee Meetings

Steering Comm. Mtg.

- Interest in meeting at upcoming National Rural ITS meeting?
 - Snowbird, Utah- August 9-12, 2015
- Other ideas/interest for later meeting dates?

Other Discussions

Items

- Next meeting
- Action items
- Other

Wrap-up