Active Traffic Management System

ODOT Intelligent Transportation Systems

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SPEED
50

WEST FORK
DAIRY CREEK

SPEED LIMIT 70

TRUCKS 65

TRAVEL TIME TO:

405 VIA 26   20 MIN

185TH VIA 26   10 MIN
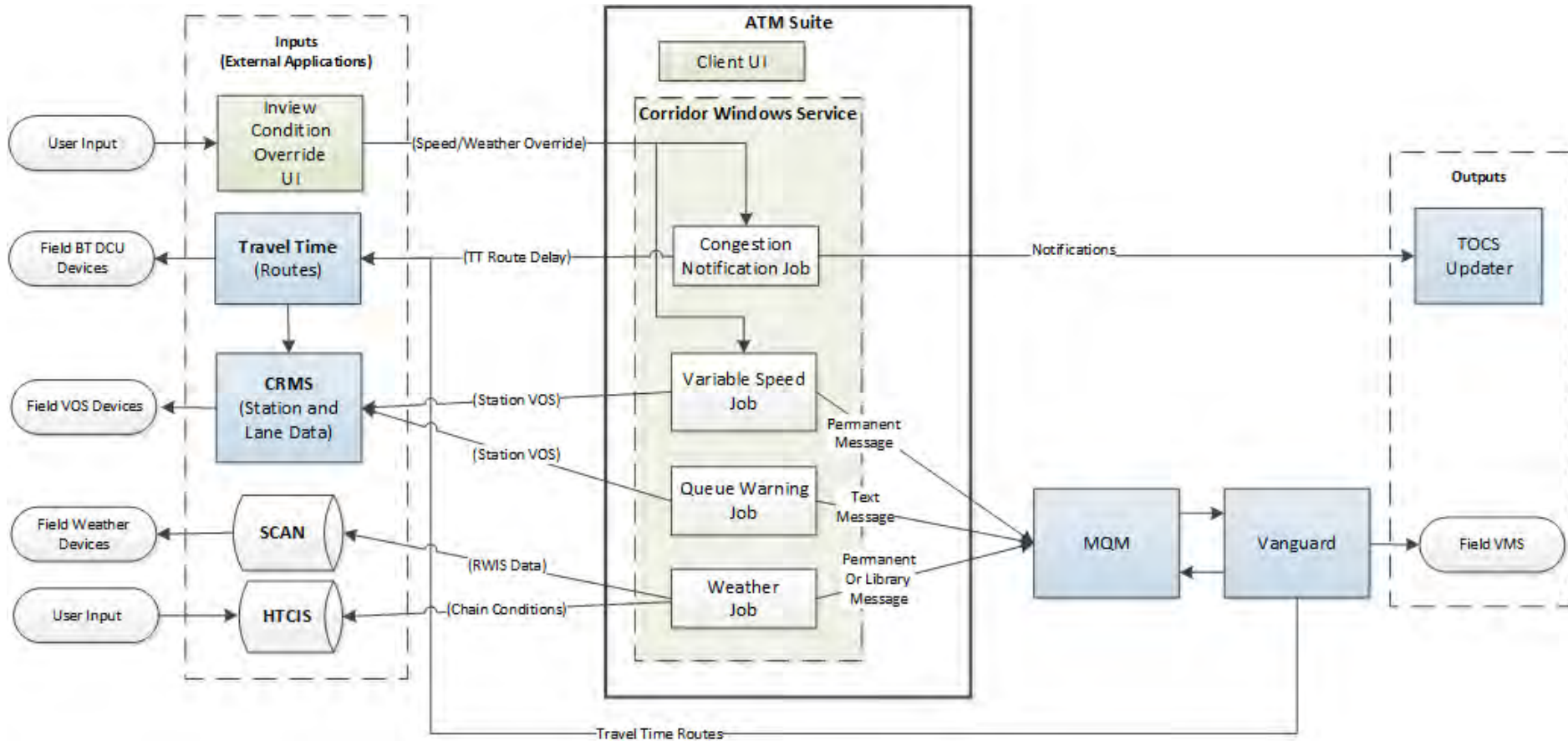
Architecture

Architecture Applications and Terminology

INVIEW: Web-based, permissions-controlled interface to the TOCS. INVIEW allows information updates to the public via our ATIS.

TOCS: Transportation Operations Center System manages roadside incidents and sends relevant information to the Oregon State Police.

ATIS: Advanced Traveler Information Systems is a group of applications that provide information to the public directly, like TripCheck and 511.

Travel Time: Calculates estimated travel times to key destinations for display on variable message signs.

CRMS: Central Ramp Meter System, formerly referred to as System Wide Adaptive Ramp Metering (SWARM), is a system to regulate the flow of vehicles onto a freeway in order to minimize congestion and improve overall mobility. SWARM is the algorithm that CRMS uses to calculate the traffic metering functionality. CRMS also collects VOS data for congestion messages and traffic analysis.

VOS: Vehicle volume, occupancy, and speed data measured by traffic sensors.

Architecture Applications and Terminology

SCAN: Collects road weather information system (RWIS) and weather warning system (WWS) data, including atmospheric and road surface conditions.

SCAN Web: User interface for viewing the data collected by SCAN.

HTCIS: Highway Travel Conditions Information System is a TripCheck database where road and weather reports are stored.

ATM Suite: Active Traffic Management user interface for configuring automated messages related to traffic congestion, severe weather conditions, and variable speed limits.

MQM: Message Queue Manager coordinates the automated messages between ODOT applications and Vanguard.

Vanguard: Sign control application that communicates directly to message signs via NTCIP 1203.

OR217: Active Traffic Management

OR217 Overview

1956 Aerial Photograph - Project sites 4, 5, and 6

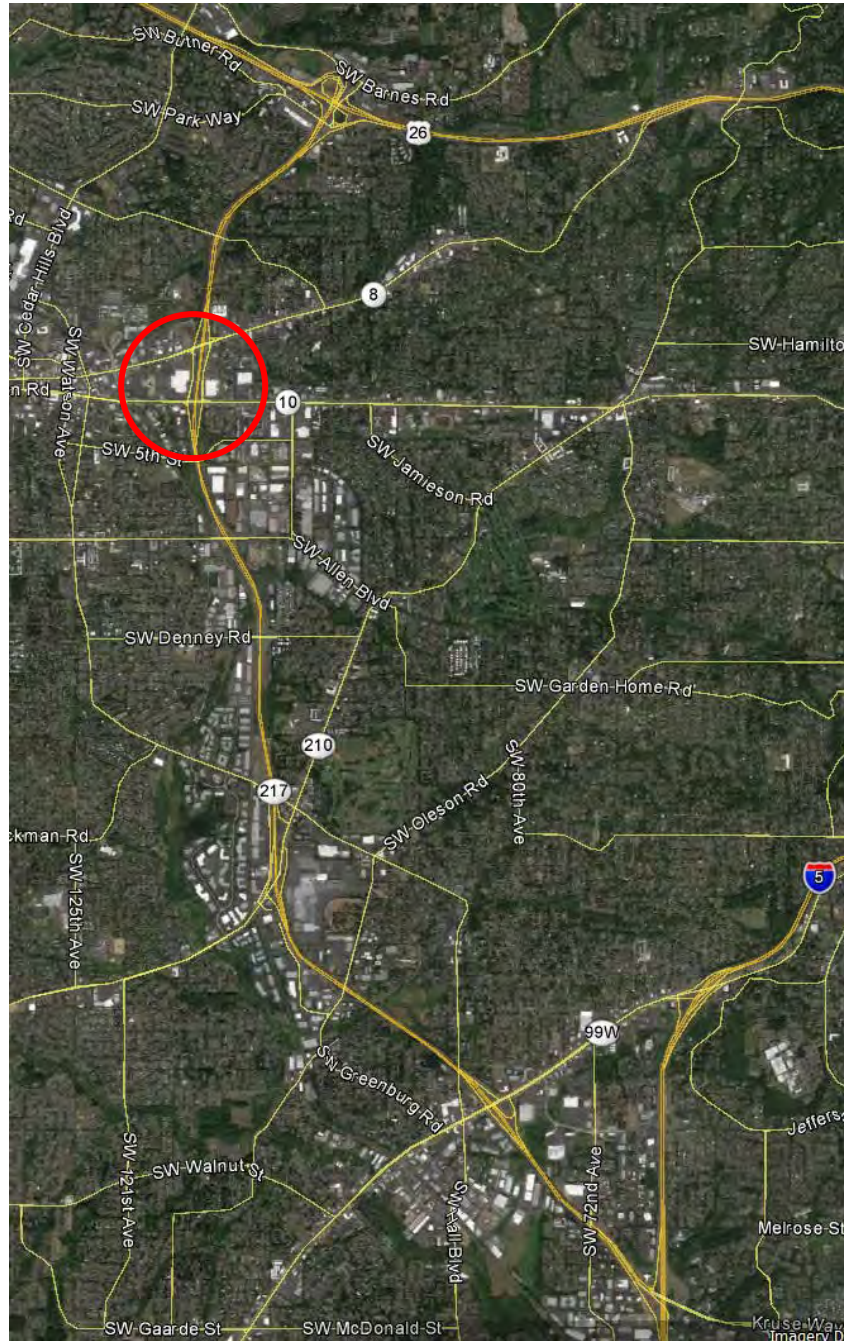1970 Aerial Photograph - Project sites 4, 5, and 6

1990 Aerial Photograph - Project sites 4, 5, and 6

2009 Aerial Photograph - Project sites 4, 5, and 6

OR-217 VAS Overview

- 7.5 mile highway connecting I-5 and US-26

- 2-3 lane freeway with 122,000 ADT

- Signs provide travel time, weather warning, and advisory speed limits

- Congestion and weather response

TRAVEL TIME TO
26 VIA 217 12 MIN
405 10 MIN

Figure 1

OR 217 Proposed & Existing ITS Devices

LEGEND
- Roadway Weather Sensor
- Bluetooth Sensor
- New Radar Traffic Sensor
- Existing Radar Traffic Sensor
- Site # - New Standalone Bluetooth Sensor Site
- Site # - New Variable Advisory Speed Signs (Pair)
- Site # - New Variable Message Sign (Type 1)
- Site # - New Variable Message Sign (Type 2)
- Site # - New Variable Message Sign (Type 4)
- Site # - New CCTV
- Shoulder Widening

OR-217 VAS Overview

- 28 variable advisory speed signs
- 6 mainline VMS
- 6 arterial VMS
- 4 road weather information systems
- 5 radar traffic sensors
- 12 Bluetooth travel time sensors
- 20 mainline dual-loop stations

Figure **1**

OR 217 Proposed & Existing ITS Devices
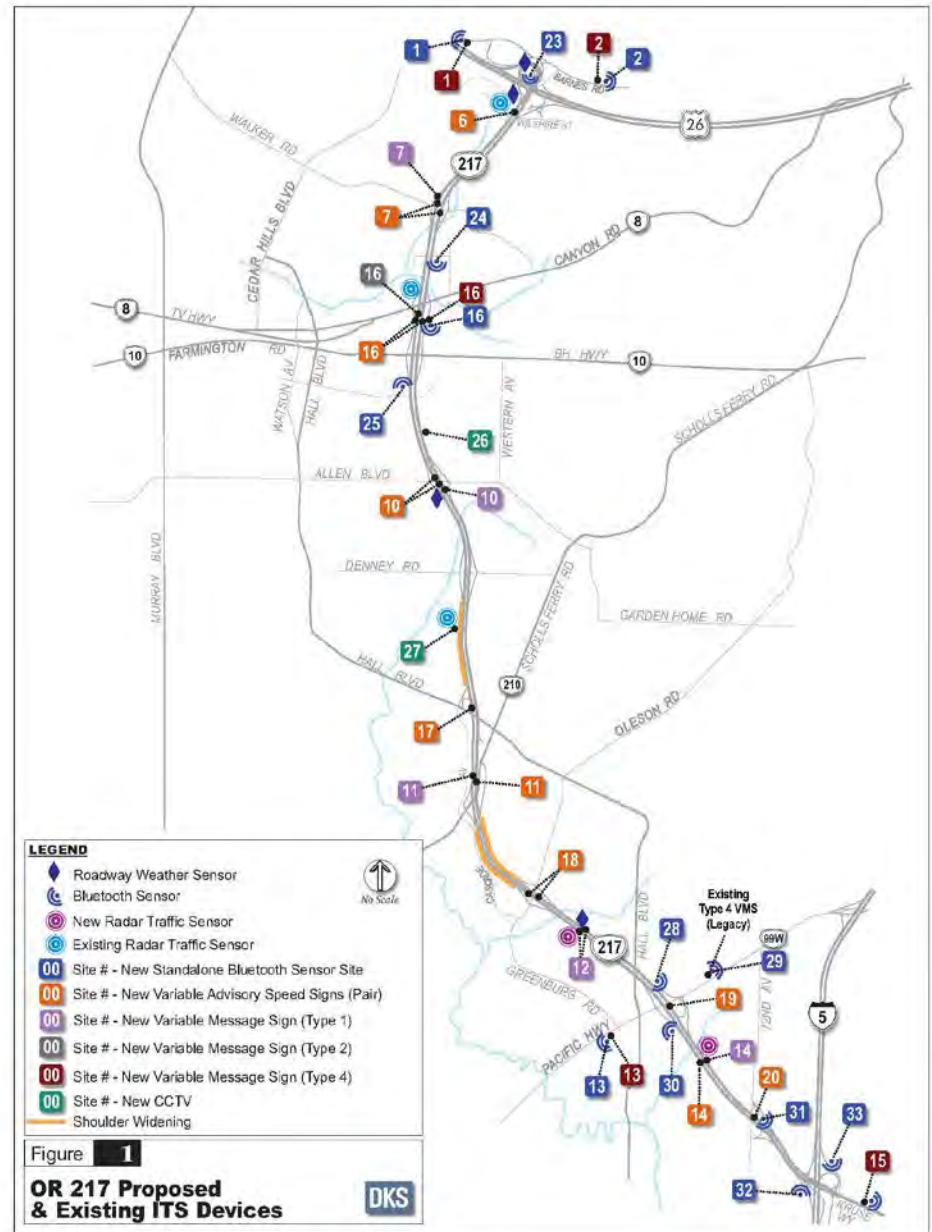
ATM Operation Overview

- Congestion and weather responsive systems operate simultaneously with slower speed conditions taking priority
- Variable speed signs post advisory speeds for congestion or weather responses
- VMS post travel time during free flow conditions, and post warnings during congestion or weather responses

Travel Time

Weather Warning

Congestion Warning

Travel Time

Queue Warning

Congestion Responsive Variable Speed

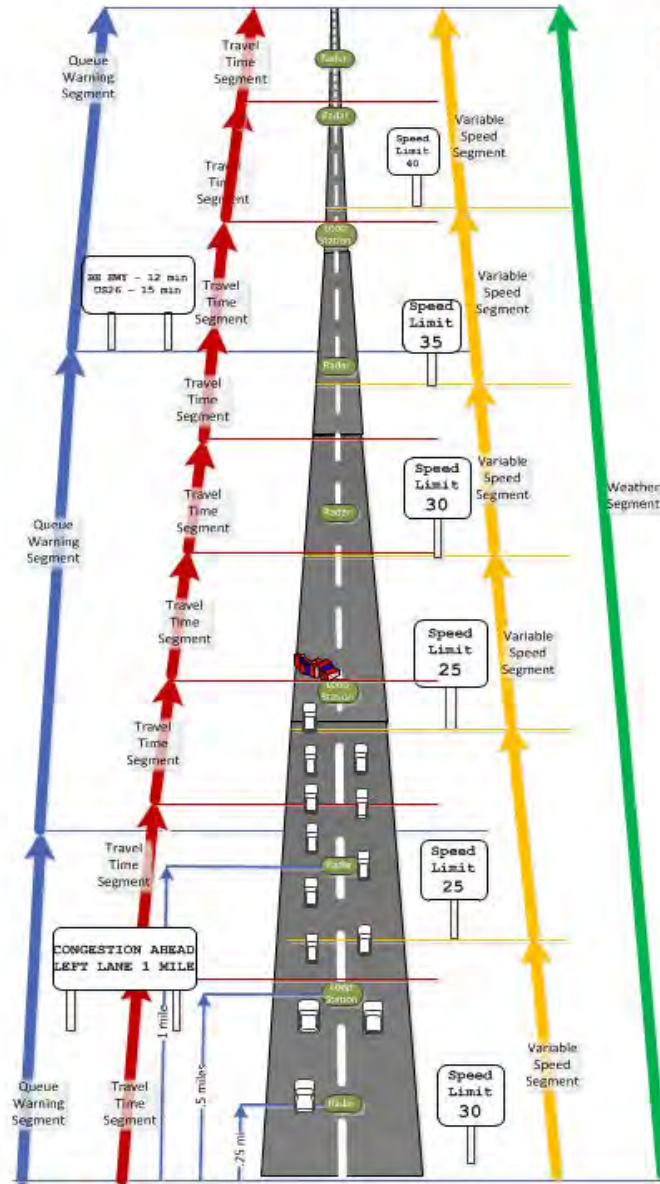## Weather Responsive Variable Speed and Weather Warning
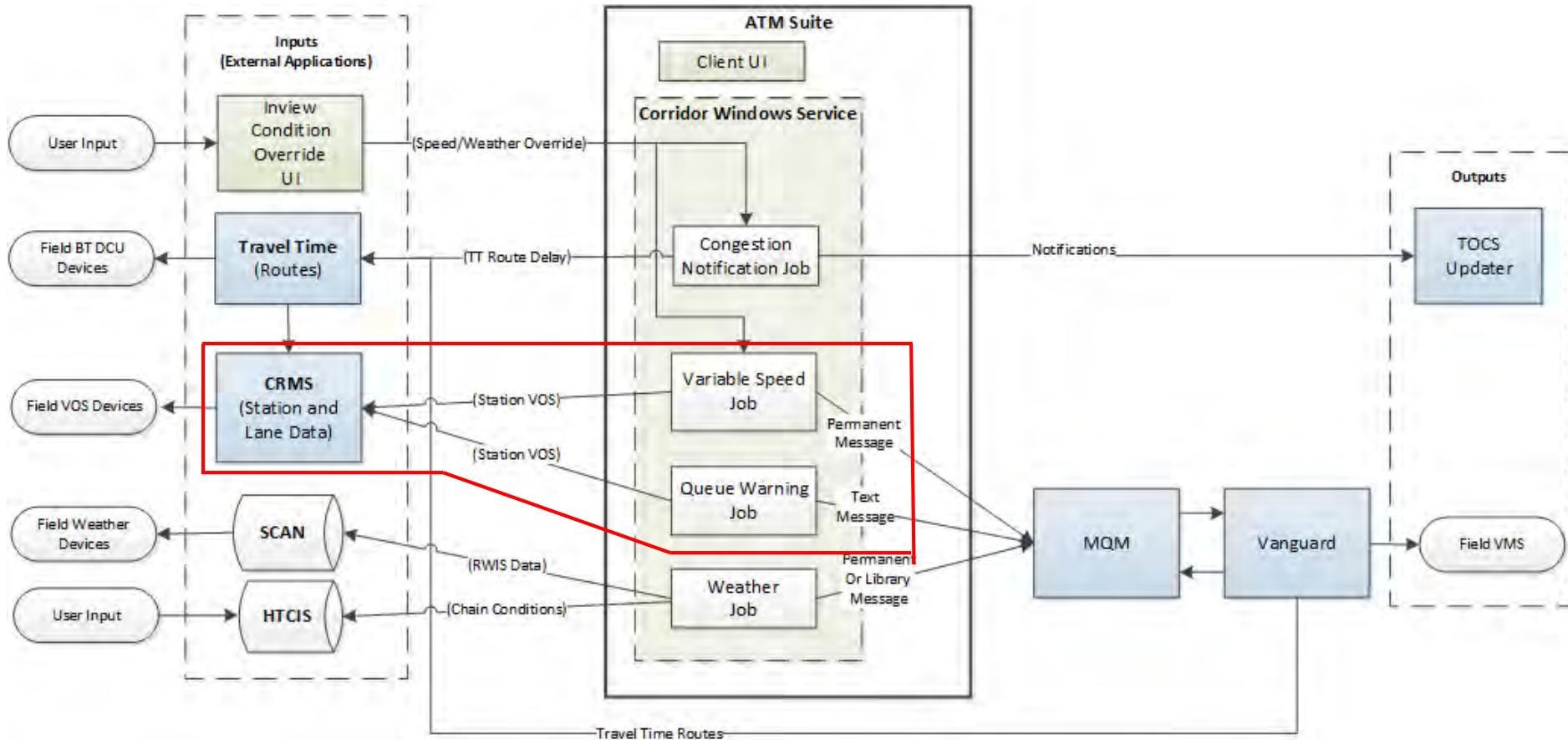
Curve Warning

Central Ramp-Metering System (CRMS)

ATM Segments

Congestion Response
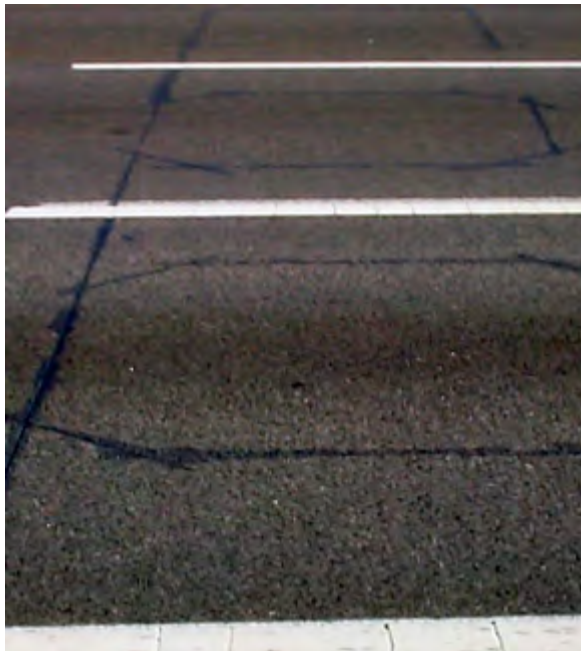

ATM Information Flow Diagram

Congestion Response – Inputs: Sensors

- Congestion is determined by the following sensors:
  o Wavetronix Radars
  o Inductive Loops

- Data Provided per Lane:
  o Volume
  o Occupancy
  o Speed

Congestion Response – Inputs: CRMS

Station 113: Wilsonville Rd (2R396) to NB I-5

☐ Freeze

Last Update: Mon Mar 12 11:00:29 PDT 2018

Enabled Lanes: ☑ Lane 1   ☑ Lane 2   ☑ Lane 3   [Send]

20 Second Data

	Status	Vol	Occ	Speed
Lane 1	OK	12.0	10.5%	75.37
Lane 2	OK	8.0	8.5%	73.26
Lane 3	OK	3.0	7.0%	69.97
Station	100.0%	23.0	8.7%	73.93

1 Minute Data

	Status	Vol	Occ	Speed
Lane 1	100.0%	26.0	8.2%	71.04
Lane 2	100.0%	20.0	10.2%	69.41
Lane 3	100.0%	18.0	9.8%	66.88
Station	100.0%	64.0	9.4%	69.52

5 Minute Data

	Status	Vol	Occ	Speed
Lane 1	100.0%	100.0	6.5%	72.64
Lane 2	100.0%	102.0	10.9%	69.18
Lane 3	100.0%	87.0	11.3%	63.22
Station	100.0%	289.0	9.5%	68.38

15 Minute Data

	Status	Vol	Occ	Speed
Lane 1	100.0%	312.0	6.7%	72.78
Lane 2	100.0%	320.0	11.3%	68.49
Lane 3	100.0%	272.0	11.4%	62.65
Station	100.0%	904.0	9.8%	68.05

1 Hour Data

	Status	Vol	Occ	Speed
Lane 1	100.0%	1317.0	7.3%	71.64
Lane 2	100.0%	1315.0	11.7%	67.28
Lane 3	100.0%	1105.0	11.4%	61.64
Station	100.0%	3737.0	10.1%	67.01

24 Hour Data

	Status	Vol	Occ	Speed
Lane 1	76.6%	26058.0	6.2%	58.12
Lane 2	95.2%	25285.0	8.1%	62.05
Lane 3	100.0%	20478.0	8.3%	57.64
Station	90.6%	72331.0	7.7%	64.05

Structure - Jurisdiction

ATM Jurisdiction

Create New Jurisdiction

Id	Name	Enabled				
1	Portland	☑	Details	Corridors	Delete	Notification
2	Region 2	☑	Details	Corridors	Delete	Notification
3	Region 5	☑	Details	Corridors	Delete	Notification

Details

Jurisdiction Settings and Status

Name: Portland
Description:
Enabled: ☑

Variable Speed Settings

Adjust Time Period and Volume Settings
Adjust Variable Speeds to Weather Settings
Adjust Variable Speeds to Weather Settings per Lane

Upward Minimum Time Lapse:	1 min
Downward Minimum Time Lapse:	1 min
Minimum Duration:	1 min
Repost Frequency:	1 min
Percent Occupancy Threshold:	90 %
Default Step Speed:	10 mph
Advisory Message Duration:	3 min
Regulatory Message Duration:	15 min
Insufficient Volume Action:	Last Calculated

Weather Settings

Weather Message Display Duration:	5 min
Weather Data Expiry Time	15 min
Severity Time Lapse	2 min
Failures Per Weather Site	7

Queue Warning Settings

Number of Polls:	2
Ratio of Good Polls:	0.5
Ratio of Good Lanes:	0.35
Congestion Threshold:	30 mph
Freeflow Threshold:	40 mph
Lane to Lane Speed Threshold:	30 mph
Message Duration:	2 min
Upstream Station Failure Threshold:	2 stations
Message Minimum Time Lapse:	40 seconds

Structure - Corridor

Portland

Add Corridor

Corridor	Weather		QW		Variable Speed	
OR217 SB	Weather Enabled:	☑	Queue Warning Enabled:	☑	Variable Speed Type:	Advisory
Enabled: ☑			Freeflow Threshold:	45	Variable Speed Enabled:	☑
			Congestion Threshold:	25	Congestion Responsive:	☑
			Lane to Lane Threshold:	40	Weather Responsive:	☑
					Min Speed:	25
					Max Speed:	55
					Truck Max Speed:	
					VS Congestion Notifications:	☐
					VS Weather Notifications:	☐

Status | Edit | Segments | Delete

Corridor	Weather		QW		Variable Speed	
OR217 NB	Weather Enabled:	☑	Queue Warning Enabled:	☑	Variable Speed Type:	Advisory
Enabled: ☑			Freeflow Threshold:	45	Variable Speed Enabled:	☑
			Congestion Threshold:	25	Congestion Responsive:	☑
			Lane to Lane Threshold:	40	Weather Responsive:	☑
					Min Speed:	25
					Max Speed:	55
					Truck Max Speed:	
					VS Congestion Notifications:	☐
					VS Weather Notifications:	☑

Status | Edit | Segments | Delete

Structure – Corridor Status

Status - OR217 SB

Jurisdiction: Portland
Jurisdiction Status: Enabled | Corridor Status: Enabled

Variable Speed Status

Status: Enabled | Congestion Responsive: Enabled | Weather Responsive: Enabled

Input Data	Segment	Sign(s)	Source	Proposed Speed	Variable Speed	Weather	Last Calculated	Enabled
☑	SW Wilshire Rd MP0.25	OR217 MP0.25 SB (SW Wilshire St) RIGHT VAS, OR217 MP0.25 SB (SW Wilshire St) LEFT VAS	Downstream	50	55		3/12/2018 2:35:31 PM	☑
☑	SW Walker Rd MP0.76	OR217 MP0.91 SB (SW Walker Rd) LEFT VAS, OR217 MP0.91 SB (SW Walker Rd) RIGHT VAS	Downstream	40	60		3/12/2018 2:35:31 PM	☑
☑	SW Canyon Blvd MP1.58	OR217 MP1.58 SB (SW Canyon Rd) RIGHT VAS, OR217 MP1.58 SB (SW Canyon Rd) LEFT VAS	VS	30	30		3/12/2018 2:35:31 PM	☑
☑	SW Allen Blvd MP2.48	OR217 MP2.48 SB (SW Allen Blvd) LEFT VAS, OR217 MP2.48 SB (SW Allen Blvd) RIGHT VAS	VS	30	30		3/12/2018 2:35:31 PM	☑
☑	SW Hall Blvd MP3.83	OR217 MP3.83 SB (SW Hall Blvd) RIGHT VAS, OR217 MP3.83 SB (SW Hall Blvd) LEFT VAS	Default	55	55		3/12/2018 2:35:31 PM	☑

Structure - Segment

Corridor Overview - OR217 SB

Variable Speed Segments
Add

Segment	Default Speed	Step Speed	Sign	Stations	Upstream Segments	Enabled	
SW Wilshire Rd MP0.25	55	10	OR217 MP0.25 SB (SW Wilshire St) RIGHT VAS, OR217 MP0.25 SB (SW Wilshire St) LEFT VAS	Wilshire (2R350) to SB OR 217		☑	Edit | Delete
SW Walker Rd MP0.76	55	10	OR217 MP0.91 SB (SW Walker Rd) LEFT VAS, OR217 MP0.91 SB (SW Walker Rd) RIGHT VAS	Walker (2R346) to SB OR 217	SW Wilshire Rd MP0.25	☑	Edit | Delete
SW Canyon Blvd MP1.58	55	10	OR217 MP1.58 SB (SW Canyon Rd) RIGHT VAS, OR217 MP1.58 SB (SW Canyon Rd) LEFT VAS	B-H Hwy (2R345) to SB OR 217, Canyon (2DS062) @ SB OR 217 MP1.5	SW Walker Rd MP0.76	☑	Edit | Delete
SW Allen Blvd MP2.48	55	10	OR217 MP2.48 SB (SW Allen Blvd) LEFT VAS, OR217 MP2.48 SB (SW Allen Blvd) RIGHT VAS	Allen (2R341) to SB OR 217, Denney (2R343) to SB OR 217	SW Canyon Blvd MP1.58	☑	Edit | Delete

Queue Warning Operation

Queue Warning Operation

Queue Warning Settings

Number of Polls:	2
Ratio of Good Polls:	0.5
Ratio of Good Lanes:	0.35
Congestion Threshold:	30 mph	*(deprecated)*
Freeflow Threshold:	40 mph	*(deprecated)*
Lane to Lane Speed Threshold:	30 mph	*(deprecated)*
Message Duration:	2 min
Upstream Station Failure Threshold:	2 stations
Message Minimum Time Lapse:	40 seconds

Queue Warning Parameter	Default Value	Impact of Changing Value
Number of Polls	2	Number of 20 second data used by the Queue Warning calculations.
Ratio of Good Polls	0.5	Percentage of polls within an acceptable range
Ratio of Good Lanes	0.35	Percentage of number of lanes with acceptable data
Lane Congested Threshold	45	Speed where system will determine traffic is congested
Lane Freeflow Threshold	60	Speed where system will determine traffic is in free flow.
Lane to Lane Speed Threshold	10	Speed difference between lanes in the same segment
Message Duration	10	Default number of minutes a Queue Warning message will display on the sign
Upstream Station Failure Threshold	2	Number of upstream station reporting no data before the station is ignored.
Message Minimum Time Lapse	30	Minimum time a message must stay up when we are removing the message due to there no longer being a congested station

Queue Warning Operation

Edit Queue Warning Segment

Segment Name

MP1.58 SW C

Enabled

☑

Default Speed

55   MPH

Signs

OR217 MP1.58 SB (South of Canyon Rd) ▾

Station List

Selected	Name	Id	Upstream	Distance
☐	5th (2R394) to SB I-405	27	☐	0
☐	72nd (2R347) to SB OR 217	3	☐	0
☐	99W (2R307) to NB I-5	47	☐	0
☐	Alberta (2R015) to SB I-5	48	☐	0
☐	Allen (2R340) to NB OR 217	15	☐	0
☑	Allen (2R341) to SB OR 217	4	☐	0.97
☐	Baker Valley I-84 MP279.30 EB	89	☐	0

Queue Warning Operation

Lane Pattern Editor

Lane Patterns are Saved? Saved
Sign Type 96 x 400 Full Color
Message Template CONGESTION AHEAD[nl]{mi}[nl]{pattern}

Select All Patterns ☑

LANE4 STATE	LANE3 STATE	LANE2 STATE	LANE1 STATE	2 LANE PATTERN MESSAGE	3 LANE PATTERN MESSAGE	4 LANE PATTERN MESSAGE	SELECTED
☐	☐	☐	☐				☑
☐	☐	☐	☑	RIGHT LANE	RIGHT LANE	RIGHT LANE	☑
☐	☐	☑	☐	LEFT LANE	CENTER LANE	RIGHT CENTER LANE	☑
☐	☐	☑	☑		RIGHT 2 LANES	RIGHT 2 LANES	☑
☐	☑	☐	☐		LEFT LANE	LEFT CENTER LANE	☑
☐	☑	☐	☑				☑
☐	☑	☑	☐		LEFT 2 LANES	CENTER 2 LANES	☑
☐	☑	☑	☑			RIGHT 3 LANES	☑
☑	☐	☐	☐			LEFT LANE	☑
☑	☐	☐	☑				☑
☑	☐	☑	☐				☑
☑	☐	☑	☑				☑
☑	☑	☐	☐			LEFT 2 LANES	☑
☑	☑	☐	☑				☑
☑	☑	☑	☐			LEFT 3 LANES	☑
☑	☑	☑	☑				☑

Save

Queue Warning Operation

Edit Message Template

Message Template Type
Lane Congestion ▾

Enabled
☑

Speed Segment Type
- Not Applicable - ▾

Sign Type
96 x 400 Full Color ▾

Message Type
Changeable ▾

Message or Library Identifier
Only applies to library and permanent message types.

[   ]

Changeable Message (NTCIP Format)
Only applies to the changeable messsage type.

Use "{pattern}" to insert a lane blockage pattern into the message for queue warning (e.g. "RIGHT LANE").

Use "{mi}" to insert a distance measurement into the message for queue warning (e.g. "1.5 MI").

	Page 1:	Page 2:	Page 3:
Line 1:	CONGESTION AHEAD		
Line 2:	{mi}		
Line 3:	{pattern}		

Save

Back to List

Variable Advisory Speed Operation

Variable Advisory Speed Operation

Variable Speed Settings

Adjust Time Period and Volume Settings
Adjust Variable Speeds to Weather Settings
Adjust Variable Speeds to Weather Settings per Lane

Upward Minimum Time Lapse:	1 min
Downward Minimum Time Lapse:	1 min
Minimum Duration:	1 min
Repost Frequency:	1 min
Percent Occupancy Threshold:	90 %
Default Step Speed:	10 mph
Advisory Message Duration:	3 min
Regulatory Message Duration:	15 min
Insufficient Volume Action:	Last Calculated

Variable Speed Settings	Default Value	Impact of Changing Value
Percent Occupancy Threshold	90	This threshold indicates the percentage of traffic needed for stopped traffic scenario to be considered.
Default Step Speed	10	The speed difference when system is slowing traffic
Upward Minimum Time Lapse	2	The time interval for changing a sign if speed is moving upward or higher
Repost Frequency	2	The number of minutes before the system will repost a current message
Advisory Message Duration	5	The number of minutes a message will remain displayed on the sign for a corridor's speed type of 'Advisory'
Regulatory Message Duration	20	The number of minutes a message will remain displayed on the sign for a corridor's speed type of 'Regulatory'
Minimum Duration	5	The number of minutes a Variable Speed message will display on the sign

Variable Advisory Speed Operation

Edit Segment

Name

SW Walker R(

Enabled

☑

Default Speed

55   MPH

Step Speed

10   MPH

Signs

OR 217 MP2.48 SB (RIGHT - SW Allen Blvd)
OR217 MP0.91 SB (SW Walker Rd) LEFT VAS
OR217 MP0.91 SB (SW Walker Rd) RIGHT VAS
P1-2B-05 (Milwaukie)

Stations

US26 @ OR47 WB
Victory (2R006) to NB I-5
Walker (2R339) to NB OR 217
Walker (2R346) to SB OR 217
WB Ell: Cl: (2R214) t NB I-5

Upstream Segments

SW Canyon Blvd MP1.58
SW Greenburg Rd MP4.96
SW Hall Blvd MP3.83
SW Wilshire Rd MP0.25

Save

Back to List

Variable Advisory Speed Operation

Edit Message Template

Message Template Type

Variable Speed ▾

Enabled

☑

Speed Segment Type

Advisory ▾

Sign Type

64 x 64 Full Color ▾

Message Type

Permanent ▾

Variable Speed Type

Only applies if the signs of that type are used for a variable speed segment.

Fixed Speed ▾

Variable Speed

Only applies if the signs of that type are used for a variable speed segment.

25

Message or Library Identifier

Only applies to library and permanent message types.

3

Changeable Message (NTCIP Format)

Only applies to the changeable messsage type.

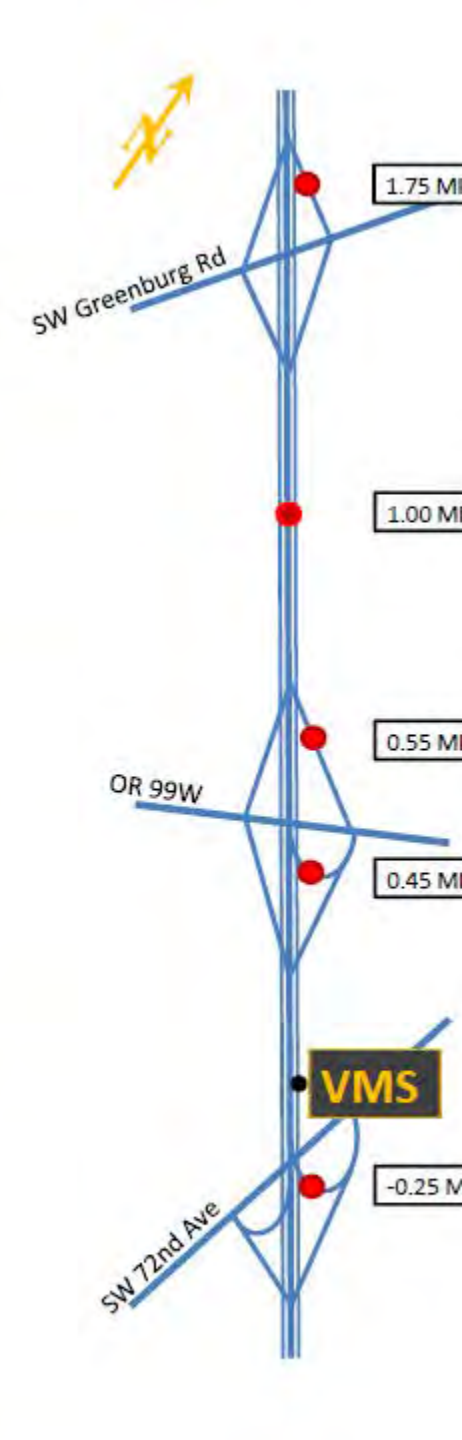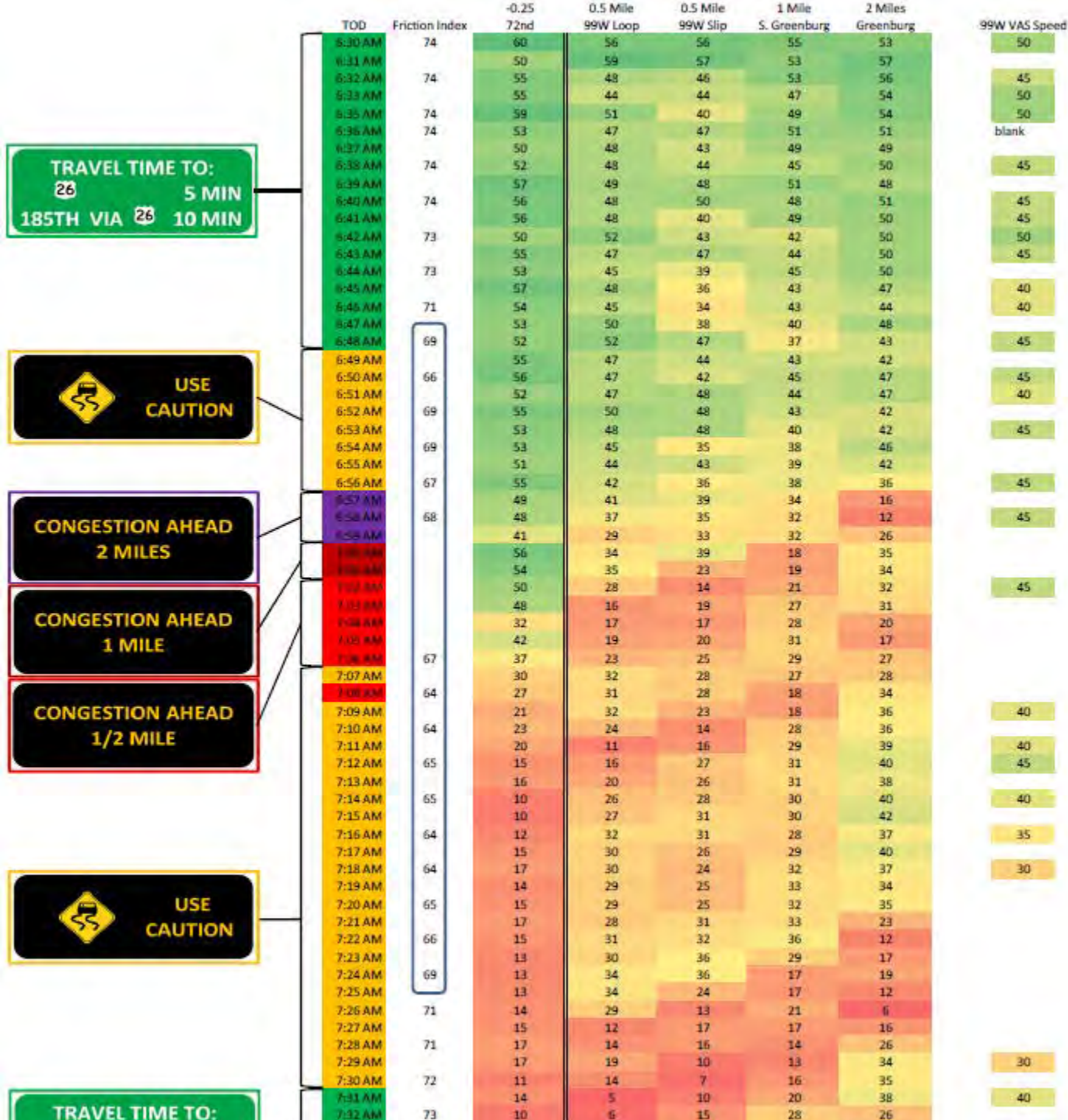Use "{pattern}" to insert a lane blockage pattern into the message for queue warning (e.g. "RIGHT LANE").

Use "{mi}" to insert a distance measurement into the message for queue warning (e.g. "1.5 MI").
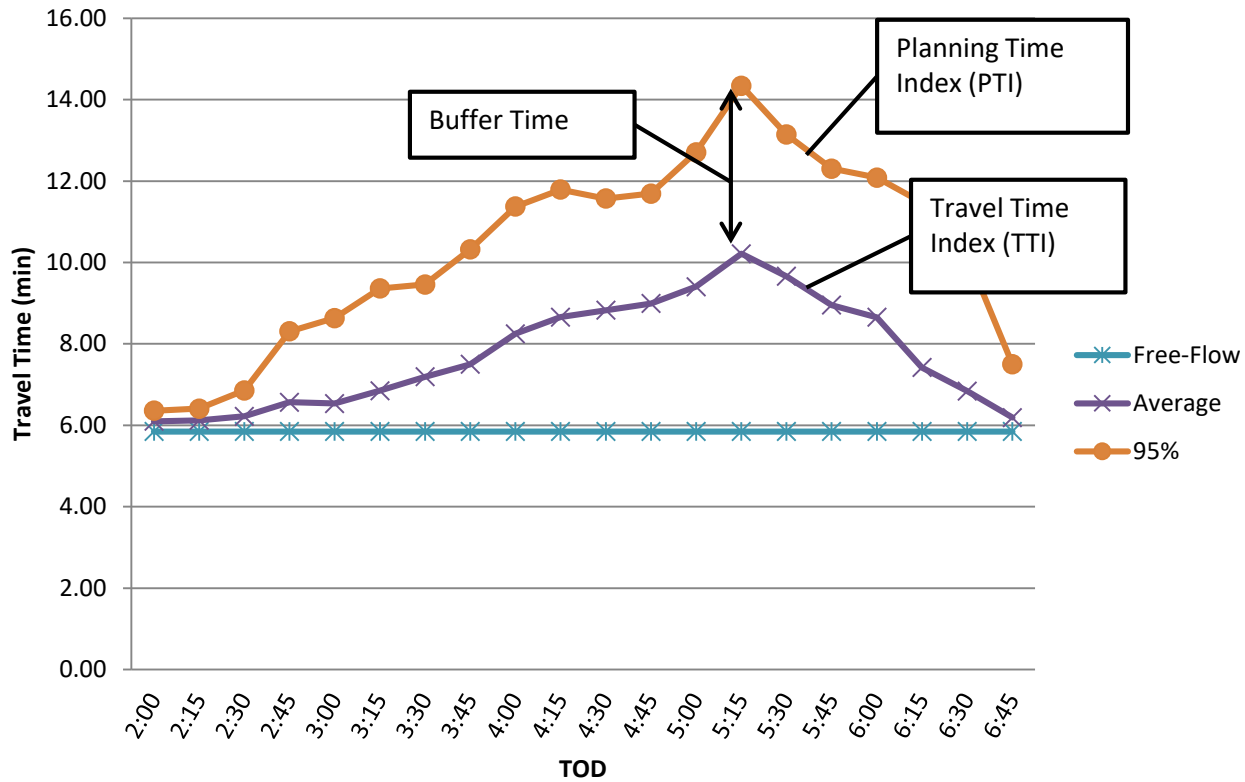
	Page 1:	Page 2:	Page 3:
Line 1:			
Line 2:			
Line 3:			

Save

Back to List

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TOD	Friction Index	-0.25 72nd	0.5 Mile 99W Loop	0.5 Mile 99W Slip	1 Mile S. Greenburg	2 Miles Greenburg	99W VAS Speed
6:30 AM	74	60	56	56	55	53	50
6:31 AM		50	59	57	53	57	
6:32 AM	74	55	48	46	53	56	45
6:33 AM		55	44	44	47	54	50
6:35 AM	74	59	51	40	49	54	50
6:36 AM	74	53	47	47	51	51	blank
6:37 AM		50	48	43	49	49	
6:38 AM	74	52	48	44	45	50	45
6:39 AM		57	49	48	51	48	
6:40 AM	74	56	48	50	48	51	45
6:41 AM		56	48	40	49	50	45
6:42 AM	73	50	52	43	42	50	50
6:43 AM		55	47	47	44	50	45
6:44 AM	73	53	45	39	45	50	
6:45 AM		57	48	36	43	47	40
6:46 AM	71	54	45	34	43	44	40
6:47 AM		53	50	38	40	48	
6:48 AM	69	52	52	47	37	43	45
6:49 AM		55	47	44	43	42	
6:50 AM	66	56	47	42	45	47	45
6:51 AM		52	47	48	44	47	40
6:52 AM	69	55	50	48	43	42	
6:53 AM		53	48	48	40	42	45
6:54 AM	69	53	45	35	38	46	
6:55 AM		51	44	43	39	42	
6:56 AM	67	55	42	36	38	36	45
6:57 AM		49	41	39	34	16	
6:58 AM	68	48	37	35	32	12	45
6:59 AM		41	29	33	32	26	
7:00 AM		56	34	39	18	35	
7:01 AM		54	35	23	19	34	
7:02 AM		50	28	14	21	32	45
7:03 AM		48	16	19	27	31	
7:04 AM		32	17	17	28	20	
7:05 AM		42	19	20	31	17	
7:06 AM	67	37	23	25	29	27	
7:07 AM		30	32	28	27	28	
7:08 AM	64	27	31	28	18	34	
7:09 AM		21	32	23	18	36	40
7:10 AM	64	23	24	14	28	36	
7:11 AM		20	11	16	29	39	40
7:12 AM	65	15	16	27	31	40	45
7:13 AM		16	20	26	31	38	
7:14 AM	65	10	26	28	30	40	40
7:15 AM		10	27	31	30	42	
7:16 AM	64	12	32	31	28	37	35
7:17 AM		15	30	26	29	40	
7:18 AM	64	17	30	24	32	37	30
7:19 AM		14	29	25	33	34	
7:20 AM	65	15	29	25	32	35	
7:21 AM		17	28	31	33	23	
7:22 AM	66	15	31	32	36	12	
7:23 AM		13	30	36	29	17	
7:24 AM	69	13	34	36	17	19	
7:25 AM		13	34	24	17	12	
7:26 AM	71	14	29	13	21	6	
7:27 AM		15	12	17	17	16	
7:28 AM	71	17	14	16	14	26	
7:29 AM		17	19	10	13	34	30
7:30 AM	72	11	14	7	16	35	
7:31 AM	73	14	5	10	20	38	40
7:32 AM	73	10	6	15	28	26	

Sign panels (left column, top to bottom):

TRAVEL TIME TO:
26   5 MIN
185TH VIA 26   10 MIN

USE CAUTION

CONGESTION AHEAD
2 MILES

CONGESTION AHEAD
1 MILE

CONGESTION AHEAD
1/2 MILE

USE CAUTION

TRAVEL TIME TO:

Map labels (right side):

SW Greenburg Rd — 1.75 MI
— 1.00 MI
OR 99W — 0.55 MI
— 0.45 MI
VMS
SW 72nd Ave — -0.25 MI

Reliability Measures Relationship example

	VPLPH	AVG TT (min)	95th TT (min)	Buffer Index	Total Crashes
SB AM Peak	0.89%	-2.20%	-7.10%	-6.30%	-10.76%
SB PM Peak	4.13%	-8.20%	-14.10%	-14.10%	-10.76%
NB AM Peak	5.78%	0.30%	-5.50%	-11.60%	-10.76%
NB PM Peak	9.34%	10.30%	6.60%	0.00%	-10.76%
Total Combined:	5.03%	0.04%	-5.02%	-9.78%	-10.76%

%Change: VPLPH, Reliability, Total Crashes

ATM Enhancements

TT:	Tripcheck Data
	Failover Routes
	BlueMac Integration
	Travel Delay

CRMS:	CLS Data (SS125)
	Forced Bottlenecks
	Multi Ramps/Mainline Station

ATM:	Freeflow Threshold
	Sign Groups
	Dual Max Speeds
	Minimum Occupancy
	Sign Specific Messaging
	Notifications
	Failure Conditions
	Speed and Weather Messages

ATM Changes

Message Queue Manager

Signs   Queues   Statuses   Groups   Settings

Queue Groups

Current Groups

[New Group] [Delete Group] [Add Sign] [Remove Sign]

- ⊟ Group
  - OR217 MP0.91 NB (SW Walker Rd) RIGHT VAS
  - OR217 MP0.91 NB (SW Walker Rd) LEFT VAS
- ⊟ Group
  - OR217 MP0.91 SB (SW Walker Rd) LEFT VAS
  - OR217 MP0.91 SB (SW Walker Rd) RIGHT VAS
- ⊟ Group
  - OR217 MP0.25 SB (SW Wilshire St) RIGHT VAS
  - OR217 MP0.25 SB (SW Wilshire St) LEFT VAS
- ⊟ Group
  - OR217 MP5.71 NB (OR99W) RIGHT VAS

Ungrouped Signs

Search By Sign Name:

Delta Hwy MP1.8 NB (Eugene)
I-205 MP11.65 NB (Gladstone)
I-205 MP11.66 SB (Strawberry Ln)
I-205 MP14.58 NB (Sunnyside Rd) TTR
I-205 MP20.21 NB (Stark)
I-205 MP24.5 SB (Airport Way)
I-405 MP0.86 SB (4th Ave) VAS
I-405 MP1.07 SB (Broadway) VAS
I-405 MP1.47 SB (12th Ave/Montgomery) VAS
I-5 MP13 SB (Crowson Rd)
I-5 MP16.7 SB (Mt Ave)
I-5 MP170 SB (Cottage Grove)
I-5 MP186 NB (Dillard Rd)
I-5 MP190 SB (McVay - S. Eugene)
I-5 MP201.7 SB (Coburg)
I-5 MP214 NB (Lake Creek)
I-5 MP236.8 NB (N Albany)
I-5 MP25.45 NB (Phoenix)
I-5 MP252.51 SB (Kuebler - Salem)
I-5 MP261.9 NB (Perkins Rd)
I-5 MP280.7 SB (Arndt Rd)
I-5 MP285.3 NB (Wilsonville)
I-5 MP287.42 NB (Norwood Rd) TTR
I-5 MP290.65 SB (Carman)
I-5 MP291 NB (Carman)
I-5 MP298.38 SB (Terwilliger)
I-5 MP298.48 NB (Iowa)
I-5 MP299.36 SB (Hood Ave) VAS
I-5 MP299.48 NB (Gaines St) TTR
I-5 MP299.83/I-405 MP0.21 SB (Ross Island Br) VAS

[Save Groups]
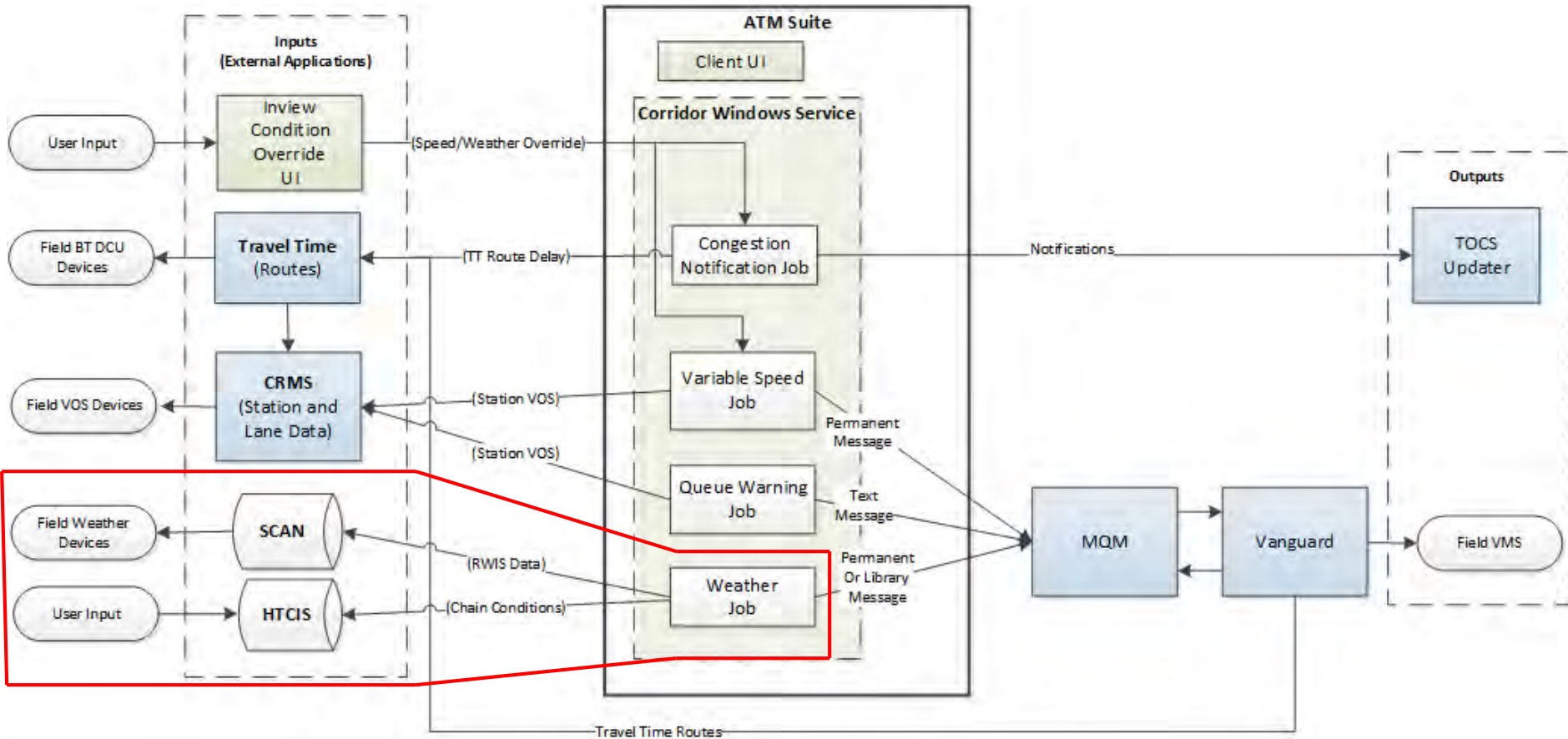
Weather Response

Weather Response – Inputs: Sensors

- Weather information is measured by the following sensors:
  - DSC/DST-111 Pavement Sensors
  - Anemometer
  - Air Temp/Relative Humidity Sensor
- Sensor Data:
  - Surface condition
  - Surface temperature
  - Grip Factor
  - Visibility
  - Air Temperature
  - Relative Humidity
  - Wind Speed

Weather Response – Inputs: SCAN

SCAN Web ssi®

Region 1 (68000)
Site Summary Page
(Selected surface sensor may change based on conditions)

Current Time: 03/12/2018 11:42 PDT

Status	Sfc	Sub	Air	RH	Dew	BaroPs	Precip	Intens	Rate	Vis	SpdAvg	DirAvg	
Other	Arlie Mitchell Rd (US 26 MP 44.0) - US 26 Drive (68017.0)							03/12/2018 11:29 (PDT)					History
	-	-	58F	39%	34F	-	None	None	-	-	-	-	
Dry	Brightwood Weigh Station (US 26 MP 36.5) - EB HWY 26 Drive (68010.0)							03/12/2018 11:30 (PDT)					History
	73.4F	-	62F	37%	36F	-	None	None	-	-	7 mph	N	
Dry	Canemah (OR 99E MP 14) - OR 99E Northbound (68012.0)							03/12/2018 11:40 (PDT)					History
	75.6F	-	65F	38%	39F	-	None	None	0.0 iph	105 ft	5 mph	N	
-	Cascade Locks (I-84 MP 44.55) (68014)							03/12/2018 11:30 (PDT)					History
	-	-	55F	43%	34F	-	Other	Other	-	-	7 mph	E	
Dry	Cherryville Rd (US 26 MP 31.0) - US 26 Drive (68016.0)							03/12/2018 11:30 (PDT)					History
	-	-	61F	-	-	-	None	None	-	-	-	-	
Dry	Firwood Rd (US 26 MP 27.04) - US 26 Drive (68015.0)							03/12/2018 11:30 (PDT)					History
	77.5F	-	62F	-	-	-	None	None	-	-	-	-	
Dry	Fremont Bridge West (I-405 MP 3.14) - WB St. Helens Exit (68005.1)							11/08/2017 16:10 (PST)					History
	23.1F	-	43F	45%	23F	-	None	-	-	-	14 mph	SE	
Wet	Frog Lake (US 26 MP 62.0) - US 26 NB Drive (68019.0)							03/12/2018 11:30 (PDT)					History
	61.2F	-	48F	52%	31F	-	None	None	-	-	-	-	
-	Glen Jackson Bridge North Channel (I-205 MP 26.4) (68003)							03/12/2018 10:08 (PDT)					History
	-	-	-	-	-	-	Other	Other	-	-	-	-	
Dry	Glen Jackson Bridge South Channel (I-205 MP 25) - SB South Channel (68002.0)							03/12/2018 10:30 (PDT)					History
	71.1F	-	-	-	-	-	Other	Other	-	-	16 mph	E	
Status	Sfc	Sub	Air	RH	Dew	BaroPs	Precip	Intens	Rate	Vis	SpdAvg	DirAvg	
Other	Government Camp (US-26 MP 54.2) - Drive Lane (68013.0)							03/12/2018 11:30 (PDT)					History
	-	-	47F	49%	29F	-	None	None	-	-	Calm	N	

Weather Response – Inputs: HTCIS

Find Station

Station:

[   ] [−]

[Display for Edit]   [No Report]

Station

SANTIAM JCT (415, SJ, Hwy 162)

Route: ORE22   **Highway:** NORTH SANTIAM   **Milepoints:** 73 - 81.81

District: 3   **Req Rpt Lvl:** 1 - Mountain Pass Mandatory

Conditions

Unit:	[ ]
Current Temp:	46
Weather Cond:	4 - Ground Fog ∨
Road Cond:	2 - Spots of Ice ∨
New Snow:	0
Roadside Snow:	40
Chain Rest:	C - Chains Required. Traction tires allowed in place of chains on vehicles under ∨
Milepoint From:	[ ] **To:** [ ]
Carrier Rest:	1 - Visibility of less than 500 feet. Oversized loads drive by your permit. ∨
Set Expiration:	3/12/2018 3:48 PM
Comments:	TEST

[Start Over]   [Post]

Entered:	03/09/18 1:30 P	Adam Bradford
Reviewed:	03/09/18 1:30 P	Adam Bradford
Expiration:	03/09/18 9:29 P	Adam Bradford

Weather Response – Inputs: Chain Conditions

SNOW ZONE
CARRY CHAINS
OR
TRACTION TIRES
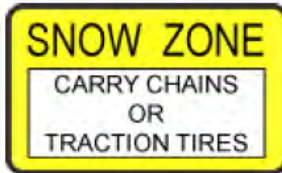
A: You must have chains or traction tires in or on your vehicle and they must be the right size for your vehicle and of sufficient number to comply with the Minimum Chain Requirements.

SNOW ZONE
CHAINS REQUIRED
ON VEHICLES TOWING
OR SINGLE DRIVE AXLE
OVER 10,000 GVW

B1: You must use chains if your vehicle is rated 10,000 pounds gross vehicle weight (GVW) or less and is towing. You must use chains on any single drive axle vehicle rated over 10,000 pounds GVW whether towing or not. Chains must also be used on the trailer or vehicle being towed as described under Minimum Chain Requirements.

SNOW ZONE
CHAINS REQUIRED
ON VEHICLES TOWING
OR OVER 10,000 GVW

B: You must use chains if your vehicle is towing or rated more than 10,000 pounds gross vehicle weight (GVW). Chains must also be used on a trailer or vehicle being towed as described under Minimum Chain Requirements.

SNOW ZONE
CHAINS REQUIRED
TRACTION TIRES
ALLOWED ON VEHICLES
UNDER 10,000 GVW

C: You must use chains if your vehicle is towing or is rated over 10,000 pounds GVW. Chains must also be used on a trailer or vehicle being towed as described under Minimum Chain Requirements. If your vehicle is rated 10,000 pounds GVW or less and is not towing you must use chains or traction tires.

D: Chain condition D is also known as a conditional closure. Conditional closures may occur on any state highway and may apply to specific vehicle types in response to specific road or weather conditions. For example, a road may be closed to low profile vehicles due to high water. As applied to snow zones, a conditional closure may be used when the defined chain restrictions are insufficient for the current conditions.

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Weather Response – ATM Configuration

Weather Sites

Add SCAN Sites | Add HTCIS Sites | UnRetire Weather Sites | ReSync Weather Sites

SCAN Sites

Weather Site Id	Weather Site Name
282013-0	Baker City (Rest Area) (I84 WB MP294.87) - A Lane
282013-1	Baker City (Rest Area) (I84 WB MP294.87) - B Lane
282011-0	Clover Creek (I84 WB MP279.30) - A Lane
282011-1	Clover Creek (I84 WB MP279.30) - B Lane
282012-0	Medical Springs (I84 WB MP298.02) - A Lane
282012-1	Medical Springs (I84 WB MP298.02) - B Lane
68026-0	OR217 Flyover (I-5 @ OR-217 MP 292.06) - OR217 Flyover (I-5 @ OR-217 MP 292.06)
68024-0	OR217 NB @ Allen Bvld (OR217 MP 2.51) - OR217 NB
68025-0	OR217 SB @ Greenburg Road (OR217 MP 5.43) - OR217 SB
285013-2	OR58 EB @ Salt Creek Tunnel MP55.95 - EB closest to entrance
285013-3	OR58 EB @ Salt Creek Tunnel MP55.95 - EB furthest to entrance
285013-0	OR58 EB @ Salt Creek Tunnel MP55.95 - WB RWIS tower center line
285013-1	OR58 EB @ Salt Creek Tunnel MP55.95 - WB RWIS tower fog line
68022-0	US26 EB to OR217 SB (US 26 MP 69.15) - US 26 EB / I-217 SB
68023-0	US26 WB to OR217 SB (US 26 MP 69.15) - US 26 WB / I-217 SB

HTCIS Sites

Weather Site Id	Weather Site Name	Enabled		
120	BAKER VALLEY (I-84 285-299.9)	☑	Edit	Delete
110	LADD CANYON WB (I-84 281-266)	☑	Edit	Delete
122	PLEASANT VALLEY EB (I-84 300-328)	☑	Edit	Delete

Enable / Disable Weather Station

Site Id: 282013-1
Site Name: Baker City (Rest Area) (I84 WB MP294.87) - B Lane

	Optional	Required	Not Present
Surface Condition	○	◉	○
Air Temperature	○	◉	○
Relative Humidity	○	◉	○
Wind Speed	○	○	◉
Grip Factor	◉	○	○
Surface Temperature	○	○	◉
Visibility	○	◉	○

Weather Response – ATM Configuration

ATM Signs

Add Signs | Manage Sign Types | UnRetire Signs | ReSync Signs

Vanguard Sign Id	Name	Type	Truck Sign	Truck Sign Blanks	Status
430	I-84 MP286.50 EB (North Powder) VSL	64 x 192 Full Color	No	No	Enabled
422	I-84 MP294.87 WB (Baker Rest Area) LEFT VSL	64 x 64 Full Color	No	No	Enabled
423	I-84 MP294.87 WB (Baker Rest Area) RIGHT VSL	64 x 64 Full Color	Yes	Yes	Enabled
421	I-84 MP295.43 WB (Baker Rest Area) VSL	64 x 192 Full Color	No	No	Enabled
417	I-84 MP295.65 EB (Baker Rest Area) VSL	64 x 192 Full Color	No	No	Enabled
415	I-84 MP298.02 WB (Medical Springs) LEFT VSL	64 x 64 Full Color	No	No	Enabled

Weather Response – ATM Configuration

Message Templates

Create New

Enabled	Message Template Type	Message Type	Variable Speed	Speed Segment Type	Id / Message Text	
Sign Type: 64 x 192 Full Color						
☑	Station Congestion	Changeable			CONGESTION[nl]AHEAD[nl]{mi}	Edit | Delete | Signs
☑	Lane Congestion	Changeable			CONGESTION[nl]AHEAD[nl]{mi}	Edit | Delete | **Lane Pattern** | Signs
☑	Weather	Changeable			ICE[nl]USE CAUTION	Edit | Delete | **Weather** | Signs
☑	Weather	Changeable			ICE[nl]USE CAUTION[nl]TURN ON LIGHTS	Edit | Delete | **Weather** | Signs
☑	Weather	Changeable			LOW VISIBILITY[nl]USE CAUTION[nl]TURN ON LIGHTS	Edit | Delete | **Weather** | Signs
☑	Weather	Changeable			SLIPPERY[nl]USE CAUTION	Edit | Delete | **Weather** | Signs
☑	Weather	Changeable			SLIPPERY[nl]USE CAUTION[nl]TURN ON LIGHTS	Edit | Delete | **Weather** | Signs
☑	Variable Speed	Permanent	Default Speed	Regulatory	3	Edit | Delete | Weather
☑	Variable Speed	Permanent	30	Regulatory	11	Edit | Delete | Weather
☑	Variable Speed	Permanent	30	Regulatory	20	Edit | Delete | **Weather**
☑	Variable Speed	Permanent	30	Regulatory	38	Edit | Delete | **Weather**

Weather Response – ATM Configuration

Weather Message Template Association

Message Type: Changeable
Changeable Message: ICE[nl]USE CAUTION[nl]TURN ON LIGHTS

Surface Condition	Grip Factor	Surface Temp.	Visibility	Air Temp.	Relative Humidity	Average Wind Speed	Gusting Wind Speed	Tire Chain Restriction	Severity	Failure Condition	Selected
DRY ICY N/A OTHER	High Low Mid N/A	High Low N/A	High Low Mid N/A	High Low N/A	High Low N/A	High Low N/A	High Low N/A	A B B1	0 1 2 3		
-	-	-	Low	-	-	-	-	A	12	☐	☑
-	-	-	Low	-	-	-	-	B	12	☐	☑
-	-	-	Low	-	-	-	-	B1	12	☐	☑
-	-	-	Low	-	-	-	-	C	12	☐	☑
-	-	-	Low	-	-	-	-	D	12	☐	☑
ICY	Low	-	Low	-	-	-	-		10	☐	☑
ICY	Low	Low	Low	-	-	-	-		10	☐	☑
DRY	Low	Low	Low	-	-	-	-		3	☐	☑

Weather Response – ATM Configuration

Weather Segments

Add

Segment	Enabled	Sign			Weather Stations			Variable Speed Segments		
WEATHER I-84 EB 277.47- 286.50 (Clover)	☑	I-84 MP279.30 EB (Clover Creek) RIGHT VSL I-84 MP284.65 EB (Wolf Creek) RIGHT VSL			BAKER VALLEY (I-84 285-299.9) Clover Creek (I84 WB MP279.30) - A Lane Clover Creek (I84 WB MP279.30) - B Lane			I-84 EB Clover (277.47- 286.50)		
	Grip Lower	Grip Upper	Surface Temp	Visibility Lower	Visibility Upper	Air Temp		Humidity	Avg. Wind	Gust Wind
	0.50	0.65	32	0.05	0.12	45		60	0	0

Weather Response - Messages

Weather Response - Applications

Systems that can use this ATM function:

- Curve Warning
- Wind Warning
- Ice Warning
- Low Visibility Warning
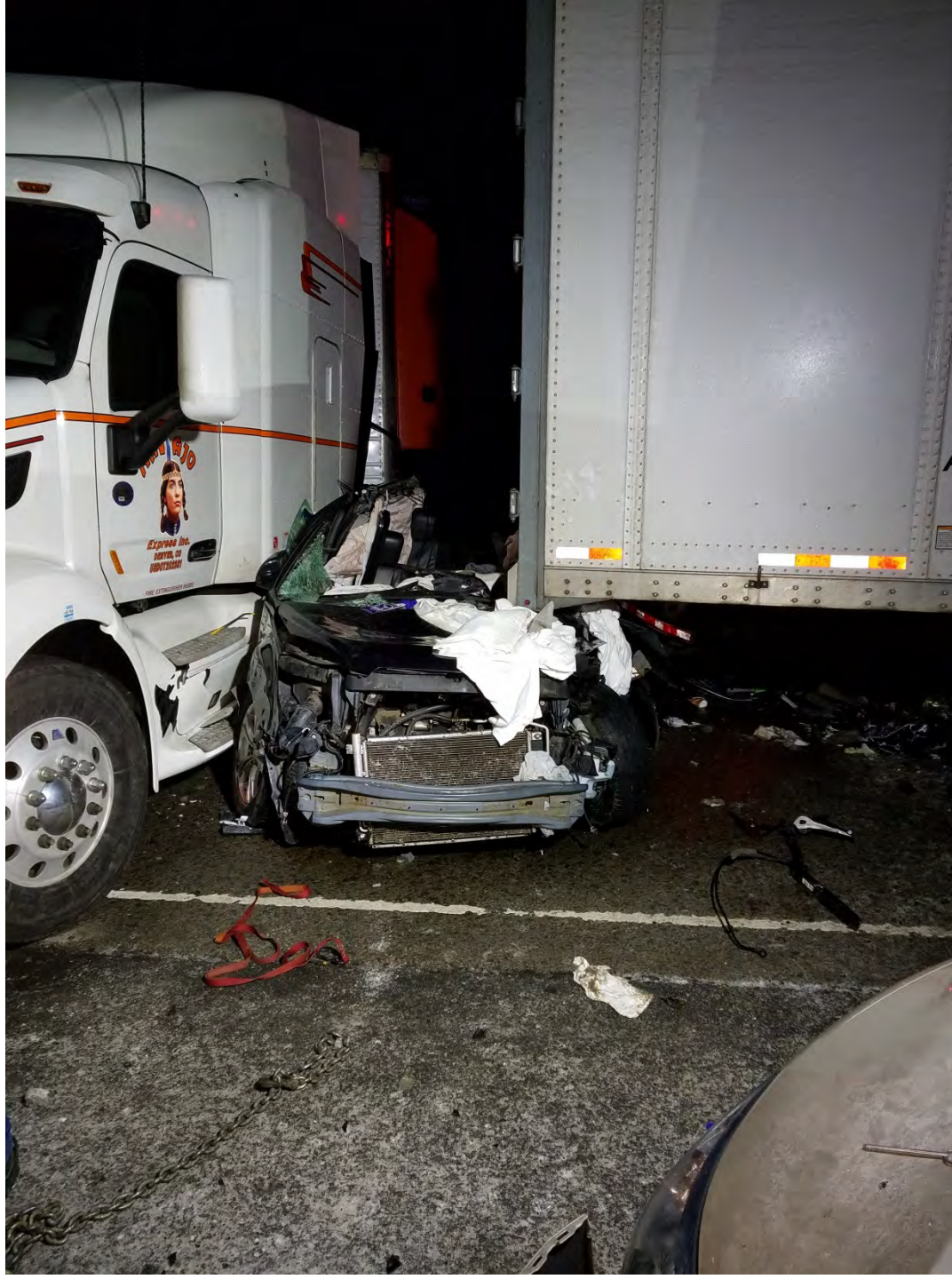
VSL Weather Response – Single Lane Measuring

**Weather to Speed Associations - Region 5**

Create New

Surface Condition	Grip Factor	Surface Temp.	Visibility	Air Temp.	Relative Humidity	Average Wind Speed	Gusting Wind Speed	Tire Chain Restriction	Speed Impact Type	Speed (MPH)	Enabled	
- DRY ICY OTHER	- High Low Mid	-	High Low Mid	- High Low	-	-	-	B B1 C	Fixed	30 35 45 55		
-	-	-	Mid	-	-	-	-	C	Fixed	30	☑	Edit | Delete
-	-	-	Mid	-	-	-	-	D	Fixed	30	☑	Edit | Delete
DRY	Low	-	Low	Low	-	-	-		Fixed	30	☑	Edit | Delete
DRY	Low	-	High	Low	-	-	-		Fixed	45	☑	Edit | Delete
DRY	Low	-	Mid	Low	-	-	-		Fixed	30	☑	Edit | Delete
DRY	Low	-	Low	High	-	-	-		Fixed	30	☑	Edit | Delete
DRY	Low	-	High	High	-	-	-		Fixed	45	☑	Edit | Delete
ICY	Mid	-	High	Low	-	-	-		Fixed	55	☑	Edit | Delete
ICY	Mid	-	Mid	Low	-	-	-		Fixed	45	☑	Edit | Delete
ICY	Mid	-	Low	High	-	-	-		Fixed	30	☑	Edit | Delete
ICY	Mid	-	High	High	-	-	-		Fixed	55	☑	Edit | Delete
ICY	Mid	-	Mid	High	-	-	-		Fixed	45	☑	Edit | Delete
OTHER	-	-	Low	Low	-	-	-		Fixed	30	☑	Edit | Delete
OTHER	-	-	High	Low	-	-	-		Fixed	45	☑	Edit | Delete

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VSL Weather Response – Failure Conditions

Weather Conditions

Create New | Create Defaults

Surface Condition	Grip Factor	Surface Temp.	Visibility	Air Temp.	Relative Humidity	Average Wind Speed	Gusting Wind Speed	Tire Chain Restriction	Severity	Failure Condition	
DRY / ICY / N/A / OTHER	High / Low / Mid / N/A	High / Low / N/A	High / Low / Mid / N/A	High / Low / N/A	High / Low / N/A	High / Low / N/A	High / Low / N/A	A / B / B1	0 / 1 / 2 / 3		
ICY	Low	High	-	-	-	-	-		0	☑	Edit | Delete
ICY	Low	High	Low	-	-	-	-		0	☑	Edit | Delete
ICY	Low	High	High	-	-	-	-		0	☑	Edit | Delete
ICY	High	High	-	-	-	-	-		0	☑	Edit | Delete
ICY	High	High	Low	-	-	-	-		0	☑	Edit | Delete
ICY	High	High	High	-	-	-	-		0	☑	Edit | Delete

VSL Weather Response – Message Sharing

Message Templates

Create New

Enabled	Message Template Type	Message Type	Variable Speed	Speed Segment Type	Id / Message Text			
Sign Type: 64 x 192 Full Color								
☑	Variable Speed	Permanent	30	Regulatory	11	Edit	Delete	Weather
☑	Variable Speed	Permanent	30	Regulatory	20	Edit	Delete	**Weather**
☑	Variable Speed	Permanent	30	Regulatory	38	Edit	Delete	**Weather**
☑	Variable Speed	Permanent	30	Regulatory	47	Edit	Delete	**Weather**
☑	Variable Speed	Permanent	35	Regulatory	10	Edit	Delete	Weather
☑	Variable Speed	Permanent	40	Regulatory	9	Edit	Delete	Weather
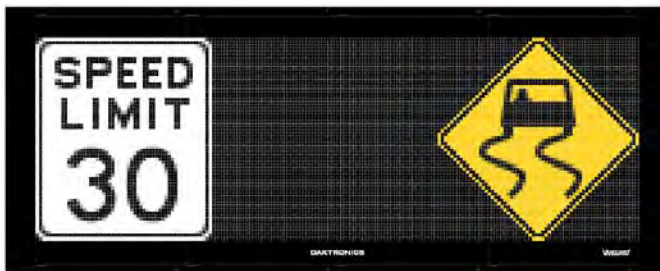
VSL Weather Response – Lessons Learned

Issue: Pavement sensors experience loss of signal during low visibility conditions and report "Other" for grip factor and visibility.

Resolution: Adding more automated weather conditions table to include "Other" condition and the second pavement sensor.

Adding IR emitters for low light visibility.

VSL Weather Response – Lessons Learned

Issue: Snow covers only one lane causing a difference of pavement friction from one lane to the next.

55 mph
Grip Rt Lane = 0.82
Grip Lt Lane = <0.75

Resolution: Adding pavement sensors to monitor both lanes. Sensors are being relocated to detect weather more representative of the corridor.

VSL Weather Response – Double Lane Measuring

Variable Speeds to Weather Settings per Lane Overview for Region 5

Download Template   Upload Template

Surface Condition A	Surface Condition B	Grip A	Grip B	Visibility	Air Temp.	Speed Type	Speed (MPH)
ICY	ICY	Low	Low	Low	Low	Fixed	30
ICY	ICY	Low	Low	Low	High	Fixed	30
ICY	ICY	Low	Low	Mid	Low	Fixed	30
ICY	ICY	Low	Low	Mid	High	Fixed	30
ICY	ICY	Low	Low	High	Low	Fixed	45
ICY	ICY	Low	Low	High	High	Fixed	45
ICY	ICY	Low	Mid	Low	Low	Fixed	30
ICY	ICY	Low	Mid	Low	High	Fixed	30
ICY	ICY	Low	Mid	Mid	Low	Fixed	45
ICY	ICY	Low	Mid	Mid	High	Fixed	45
ICY	ICY	Low	Mid	High	Low	Fixed	55
ICY	ICY	Low	Mid	High	High	Fixed	55
ICY	ICY	Low	High	Low	Low	Fixed	30
ICY	ICY	Low	High	Low	High	Fixed	30
ICY	ICY	Low	High	Mid	Low	Fixed	45
ICY	ICY	Low	High	Mid	High	Fixed	45
ICY	ICY	Low	High	High	Low	Fixed	55
ICY	ICY	Low	High	High	High	Fixed	55
ICY	ICY	Mid	Low	Low	Low	Fixed	30
ICY	ICY	Mid	Low	Low	High	Fixed	30
ICY	ICY	Mid	Low	Mid	Low	Fixed	30
ICY	ICY	Mid	Low	Mid	High	Fixed	30

VSL Weather Response – Modifications

- Table entries for pavement sensing:
  - Single Lane: 90 entries
  - Double Lane: 864 entries (189 entries will result in failure conditions).
- Humidity has been added to validate visibility readings.
- When "Other" condition is measured in low visibility, grip factor and surface temperature do not measure.

OR-217 Congestion vs. Weather Responses

- 89% of speed reductions were due to congestion and 11% were due to weather

- Highest weather activations were during Winter months in the 1st and 4th quarter

- Weather based speed reductions occurred mainly during off-peak hours (6:00PM to 6:00AM)

- Table quantities are the combination of all 28 variable speed signs

	2015				2016				Total	
System	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Activations	Percent
Congestion	258,540	288,975	332,514	399,649	338,566	359,056	353,452	431,618	2,762,370	89%
Weather	59,695	4,789	5,358	97,573	54,639	0	1,910	122,053	346,017	11%

OR-217 Congestion vs. Weather Responses
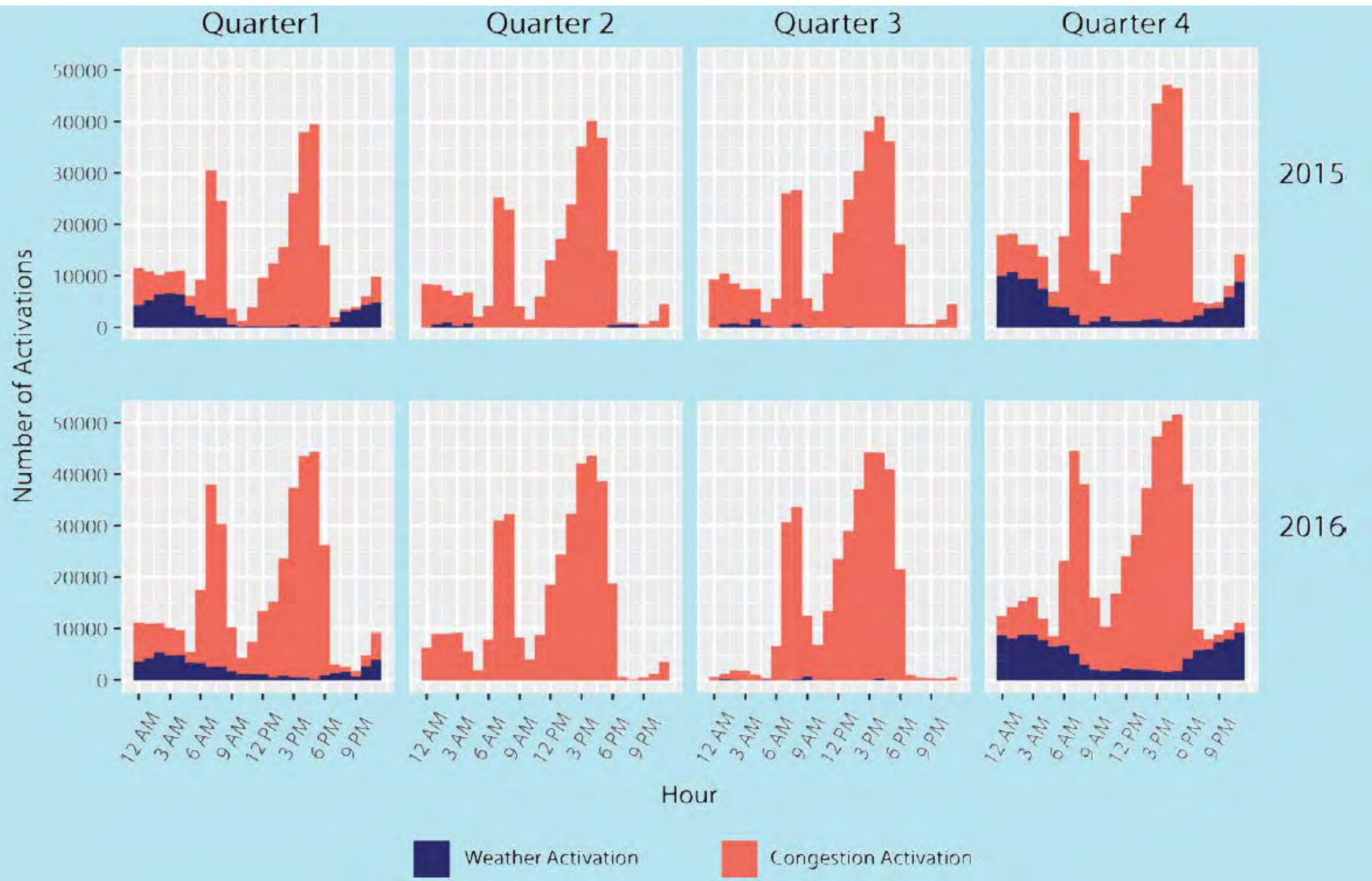
OR-217 VSL Driver Compliance

- There are 6 advisory speed limit options for congestion response and 2 for weather response in accordance with OAR 734-020-0019

- The difference between measured and posted advisory speeds are lower for weather based speed reductions

Activation Source	Advisory Speed	Obs. Speed, Avg	Difference between Observed & Advisory Speed, mph	Difference, %	Overall difference by system, mph	Number of Obs.
Congestion	25	25.0	0.0	0%		1,304,666
Congestion	30	34.2	4.2	14%		424,447
Congestion	35	43.5	8.5	24%		804,813
Congestion	40	43.8	3.8	9%	1.5	473,935
Congestion	45	48.7	3.7	8%		702,660
Congestion	50	45.4	-4.6	-9%		1,244,624
Weather	35	36.4	1.4	4%	-2.5	20,915
Weather	45	42.4	-2.6	-6%		522,539

OR-217 ATM Safety Results

Travel Time

Travel Time
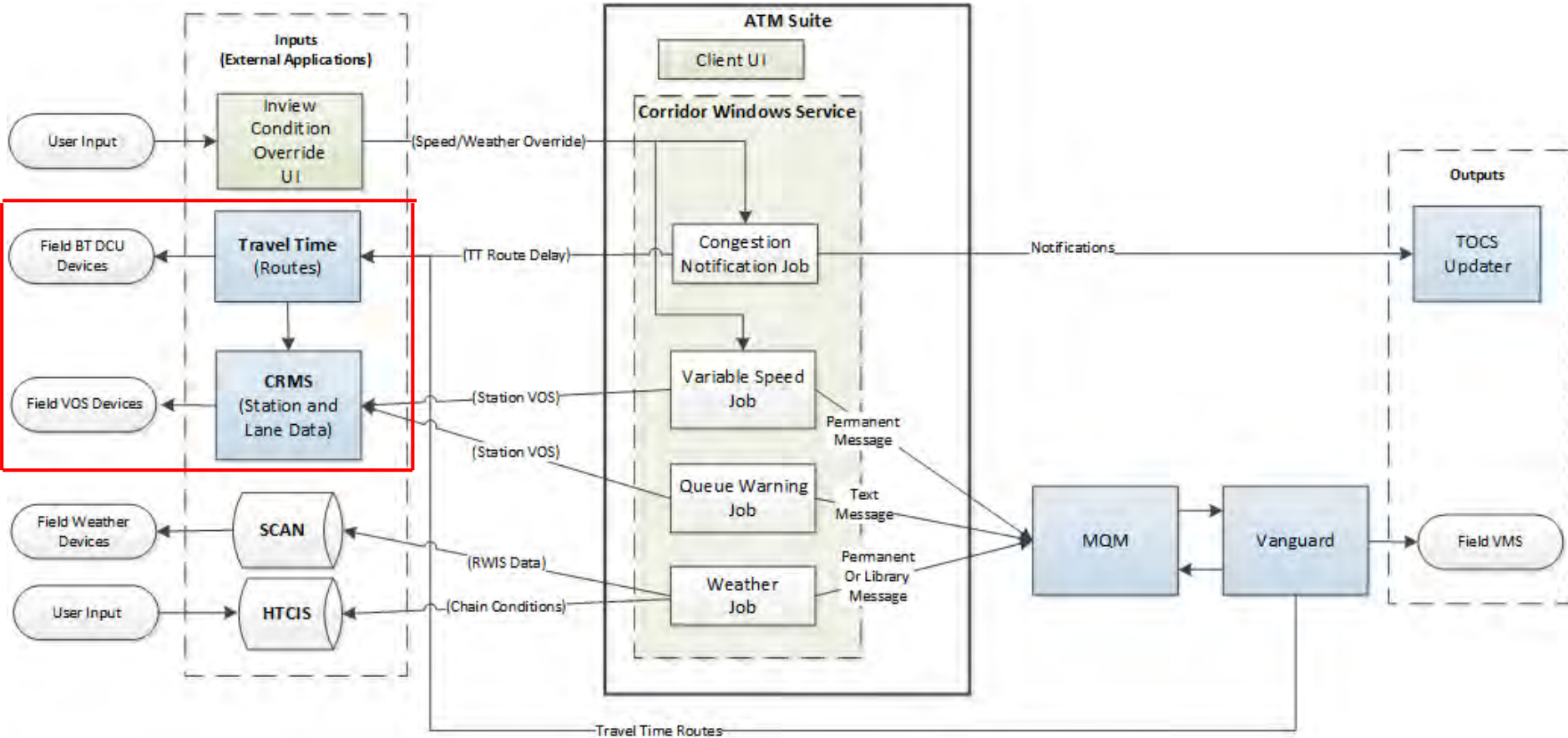
ATM Information Flow Diagram

Travel Time – Inputs: Sensors

- Vehicle speed is determined by the following sensors:
- o Wavetronix Radars
- o Inductive Loops
  - ➤ Vehicle Speeds are calculated to Time based on segment distance
- Travel Time collected through Bluetooth data collection units.
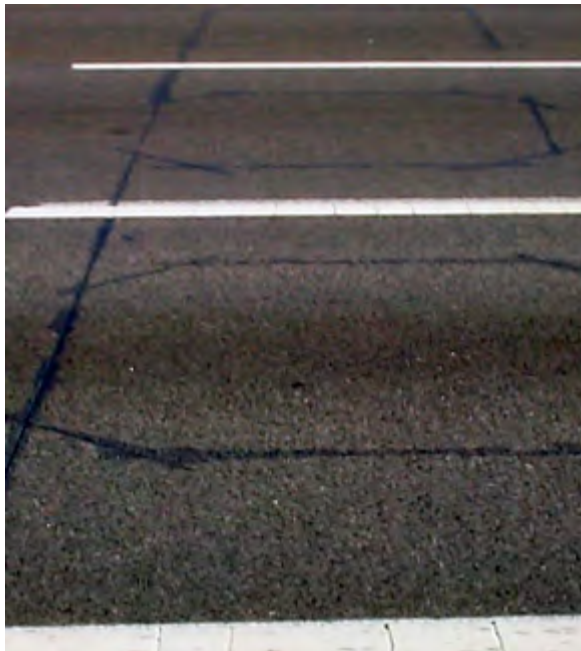
Travel Time

TRAVEL TIME ADMINISTRATION

‹ Home

‹ Configuration

Travel Time Monitoring - Home

Travel Time Corridors

	Project Name	Route Count	Active
⚠️	Beltline NW Exp to I-5	4	☑
⚠️	Bluetooth Trailers	2	☐
❌	Construction Zone	14	☐
⚠️	I205 NB	7	☑

Travel Time Routes

	Route Name	Latest Travel Time (min)	Last Calculated	Active
✅	Bi-State: I-205 NB at SunnysideTTR to I-205/I-5 via I-5	31	03/14/2018 11:29:09 AM	☑
⚠️	Bi-State: I-205 NB at SunnysideTTR to WA I-205/I-5 via I-205	25	03/14/2018 11:29:09 AM	☑
✅	I205 NB at Gladstone to I84	11	03/14/2018 11:29:09 AM	☑
✅	I205 NB at Gladstone to Powell	8	03/14/2018 11:29:09 AM	☑

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Travel Time

TRAVEL TIME ADMINISTRATION

‹ Home

‹ Configuration

Travel Time Monitoring - Configuration

Configuration
Application Parameters
External Agency
Data Collection Unit
Station
Segment
DCU Segment
Station Segment
BlueMAC Segment
Section
Section-Segment
Corridor
Route
Route-Section
Route Failure Groups
Route Failure Group Properties
TripCheck Route Origin
TripCheck Route Properties

Travel Time

TRAVEL TIME ADMINISTRATION

‹ Home
‹ Configuration

Edit entry from Data Collection Unit

Active	☑
Name	99W @ I-5
Note	test
Network Url	http://10.11.12.9
Latitude	45.44326
Longitude	-122.74279
Highway	99W
Mile Point	7.58
Roadway Info	1
Location Type	Intersection ▼
Dcu Owner	ODOT
Collect Old Data	☐
	☐ Push configuration to Dcu?

Update Cancel

Restart Dcu   View Error Log

TRAVEL TIME ADMINISTRATION

‹ Home
‹ Configuration

Edit entry from Station

Active	☑
Station Type	Dac ▼
Station Identifier	99
Name	N. Wilsonville (2DS051) @
Jurisdiction	1
Unimported Dac Inventory	[Not Set] ▼

Update Cancel

Travel Time

TRAVEL TIME ADMINISTRATION

‹ Home
‹ Configuration

Edit entry from Station Segment

Active	☑
Segment Name	I-5 NB S. of N. Wilsonville
Calculation Threshold Minutes	30
Calculation Period Minutes	2
Min Sample Count	3
Std Dev Sample Size	15
Std Dev Multiplier	1.96
Max Filter Seconds	3888
Min Filter Seconds	51
Use Std Dev Filter	☑
Distance (feet)	5702
Min Reporting Lanes Percent	0.5
Station	N. Wilsonville (2DS051) @ NB I-5 MP285.28 - Station@285.58 ▼

Update   Cancel

Travel Time

TRAVEL TIME ADMINISTRATION

‹ Home
‹ Configuration

Edit entry from Section

Active	☑
Section Name	111 - I5 NB at Wilsonville
Max Failed Segment Count	3

Update Cancel

TRAVEL TIME ADMINISTRATION

‹ Home
‹ Configuration

Edit entry from Section-Segment

Max Seconds History	600
Default Seconds	51
Sequence Number	2
Section	111 - I5 NB at Wilsonville to Norwood ▼
Segment	I-5 NB S. of N. Wilsonville ▼

Update Cancel

Travel Time

TRAVEL TIME ADMINISTRATION

‹ Home
‹ Configuration

Edit entry from Route

Active	☑
Route Name	I5 NB at Carman to I405
Minimum Travel Time	11
Maximum Travel Time	111
Minimum Message	11
Maximum Message	111
Publish Delay Time	☐
RouteFailureGroupRoutes	View Route Failure Group Properties
Corridor	I5 NB ▼

Update   Cancel

Travel Time

TRAVEL TIME ADMINISTRATION

... ‹ Home
  ‹ Configuration

Route-Section

Retired [False ▼]
Route [I5 NB at Wilsonville to OR217   ▼]
Section [All   ▼]

	Retired	Sequence Number	Route	Section
Edit Delete	☐	1	I5 NB at Wilsonville to OR217	111 - I5 NB at Wilsonville to Norwood
Edit Delete	☐	2	I5 NB at Wilsonville to OR217	112 - I5 NB at Nyberg to OR217
◢ ◀ Page [1] of 1 ▶ ▶◣				Results per page: [10 ▼]

+ Insert new item

Travel Time

TRAVEL TIME ADMINISTRATION

‹ Home

‹ Configuration

Route Failure Group Properties

Route	All ▼
Route Failure Groups	OR224 at SE 17th to OR224 at SE Johnson Rd - Failure Group ▼
Route Sequence Number	[_____] [Search]
Retired	False ▼
Active	All ▼

	Retired	Active	Route Sequence Number	Route Failure Groups	Route
Edit Delete	☐	☑	1	OR224 at SE 17th to OR224 at SE Johnson Rd - Failure Group	OR224 at SE 17th to OR224 at SE Johnson Rd
Edit Delete	☐	☑	2	OR224 at SE 17th to OR224 at SE Johnson Rd - Failure Group	OR224 at SE 17th to OR224 at SE Johnson Rd (Harrison Fail)
Edit Delete	☐	☑	3	OR224 at SE 17th to OR224 at SE Johnson Rd - Failure Group	OR224 at SE 17th to OR224 at SE Johnson Rd (Lake Fail)
Edit Delete	☐	☑	4	OR224 at SE 17th to OR224 at SE Johnson Rd - Failure Group	OR224 at SE 17th to OR224 at SE Johnson Rd (Harrison, Lake Fail)

|◀ ◀ Page 1 of 1 ▶ ▶| Results per page: 10 ▼

\+ Insert new item

Travel Time

User Override

User Override

User Override

Reason for Override	Speed	Command Priority	Duration (Default)
(70 MPH) Black Ice / Packed Snow	45	Recommended	30 min
(70 MPH) Black Ice / Packed Snow - Escalated	30	Recommended	30 min
(70 MPH) Condition B / B1 - Chain Requirement in Effect	45	Recommended	30 min
(70 MPH) Condition C - Chain Requirement in Effect	35	Recommended	30 min
(70 MPH) High Winds	55	Recommended	30 min
(70 MPH) Ice / Packed Snow - Plus Low Visibility	30	Recommended	30 min
(70 MPH) Standing Water / Spots of Ice	55	Recommended	30 min
(70 MPH) Visibility Less Than 500 Feet	55	Recommended	30 min
Black Ice / Packed Snow	Posted Speed - 20	Recommended	30 min
Black Ice / Packed Snow - Escalated	Minimum Slow Speed	Recommended	30 min
Condition B / B1 - Chain Requirement in Effect	45	Recommended	30 min
Condition C - Chain Requirement in Effect	35	Recommended	30 min
High Winds	Posted Speed – 10	Recommended	30 min
Ice / Packed Snow - Plus Low Visibility	Minimum Slow Speed	Recommended	30 min
Standing Water / Spots of Ice	Posted Speed - 10	Recommended	30 min
Visibility Less Than 500 Feet	Posted Speed - 10	Recommended	30 min
System Failure - Faulty Data	Posted Speed (Max)	Recommended	48 hours

Baker Valley ATM Operations
November - April 2017 & 2018

Corridor	Override Count	Weather Reductions	% of Reductions as Overrides	Hours Reduced
2017				
I-84 EB (MP 277.47-306.40)	205	394	52%	1880
I-84 WB (MP 306.40-277.47)	207	369	56%	1904
2018				
I-84 EB (MP 277.47-306.40)	11	198	6%	506
I-84 WB (MP 306.40-277.47)	9	194	5%	514

ATM Notifications
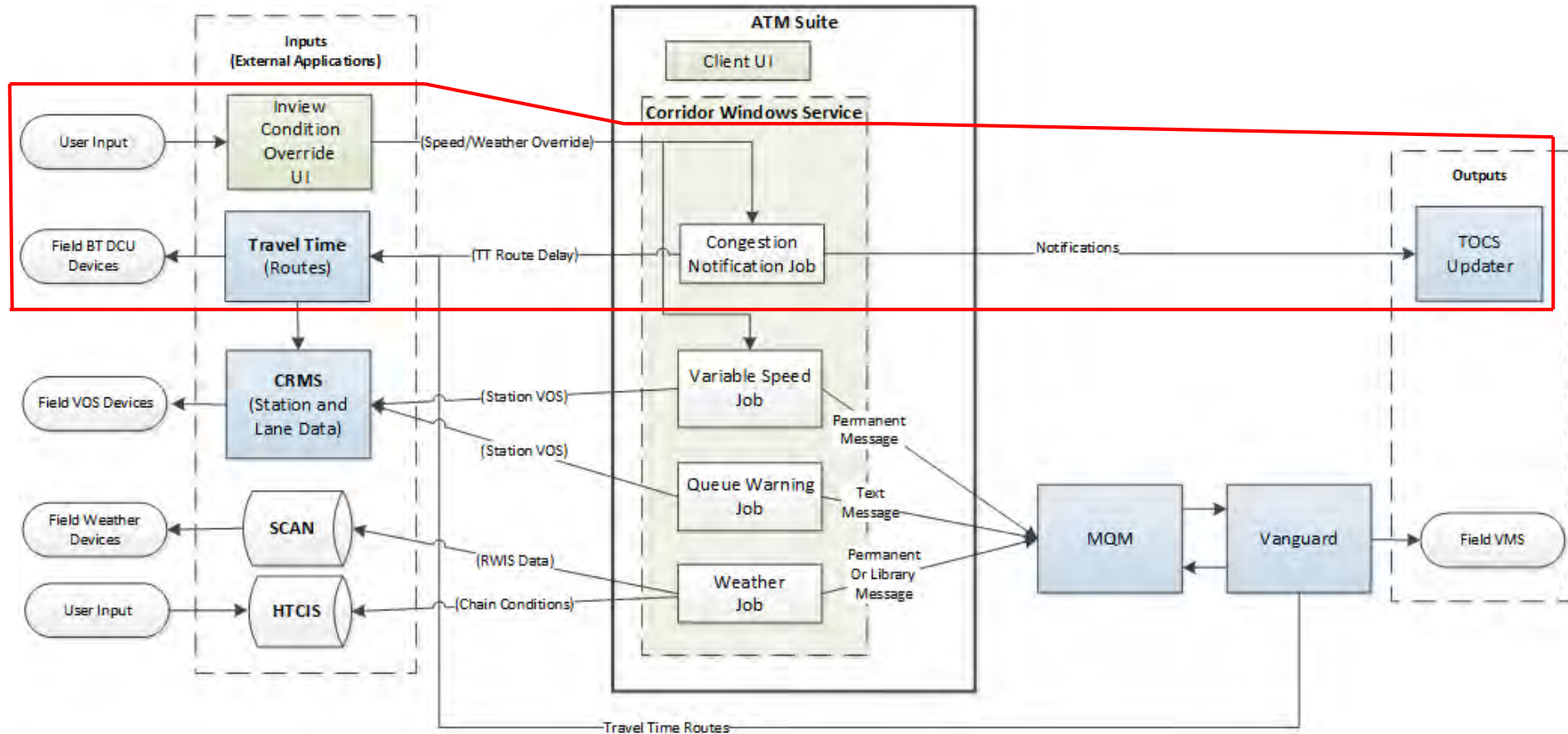
ATM Notifications

- Variable Speed Limit Changes
- Manual Overrides
- Travel Time Delay

_Segment: I-84 WB Medical (306.40-295.42)
Speed: 45 MPH
Source: Weather
Cond: OTHER, GF: High

_Segment: I-84 EB Clover (277.47-286.50)
Speed: 45 MPH
Source: Suggested Override
Reason: (70 MPH) Black Ice / Packed Snow

Law Enforcement Coordination

Variable Speed Reporter   Dashboard   Map   History   Help

Corridor: Baker Valley WB (306-278) ▾

Segment: I-84 WB Medical (306.40-295.42) ▾

I-84 WB Medical (306.40-295.42)

Corridor Type: Regulatory

Max Speed: 70

Refreshed At: 3/12/2018 15:16:36

Segment / Sign	Reason / Updated	Next Speed / Current Message
I-84 WB Medical (306.40-295.42)	**No Impact**	**70**
I-84 MP306.40 WB (Hwy 30) VSL	13:37	SPEED LIMIT 70 / TRUCKS 65
I-84 MP303.46 WB (Campbell) VSL	13:35	SPEED LIMIT 70 / TRUCKS 65
I-84 MP302.04 WB (Copperfield) VSL	13:35	SPEED LIMIT 70 / TRUCKS 65
I-84 MP298.02 WB (Medical Springs) VSL	13:37	SPEED LIMIT 70 / TRUCKS 65
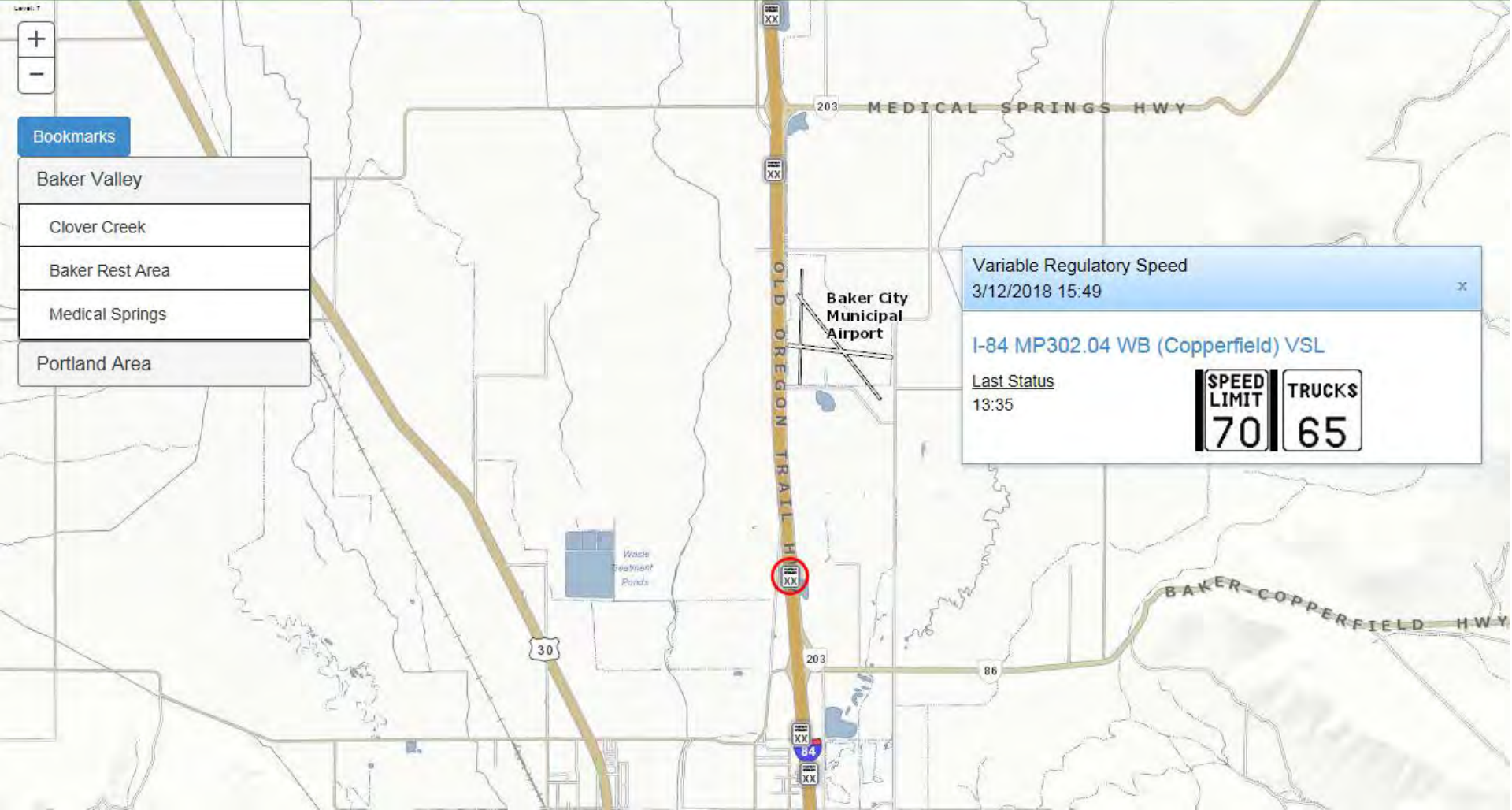
Law Enforcement Coordination

Law Enforcement Coordination

Variable Speed Reporter Dashboard Map History Help

Corridor: Baker Valley WB (306-278) ⌄

Segment: I-84 WB Medical (306.40-295.42) ⌄

Timespan needs to be 12 hours or less.

Begin Date: 03/12/18 14:15

End Date: 3/12/18 15:15

Download Report

(Last 5 Years; Data that is older than 90 Days will take several minutes to download.)

Sorted by Sign | Sorted by Time

Quick Sign Log

(Last 90 Days Only)

I-84 MP306.40 WB (Hwy 30) VSL ⌄

Show Log

Time	Posted Speed
03/12/2018 14:17	70
03/12/2018 14:23	70

Law Enforcement Coordination - CAD Integration

ATM Sign Message Output

ATM Output – MQM

Message Queue Manager

Dashboard

This screen shows the top entry of all active sign queues. An "Entries" value of 0 denotes the queue had a message sometime today.

Filters

☐ Hide Empty Queues

Search By Sign Name: [   ] (Use the character '|' to separate string tokens to include in search.)
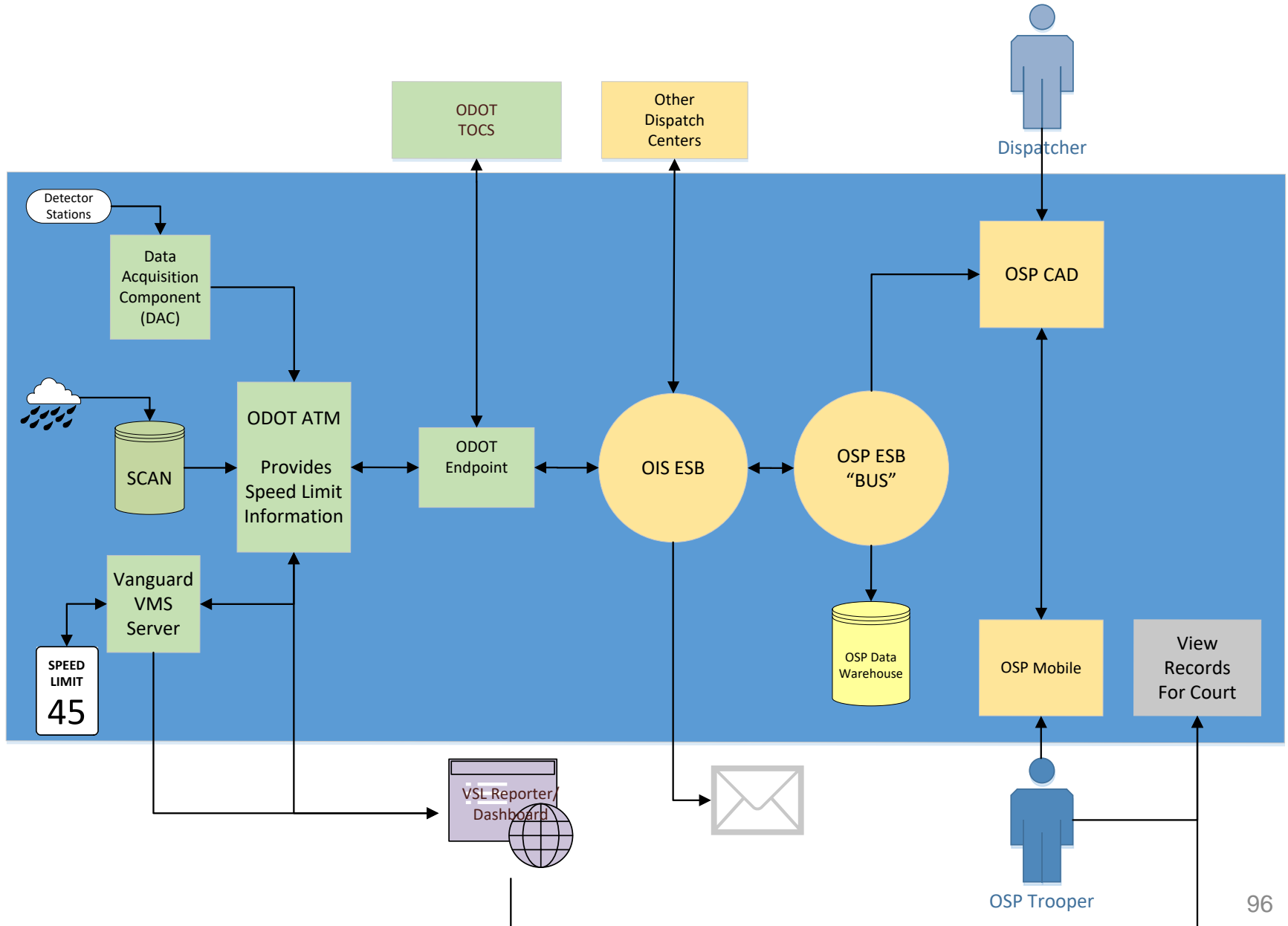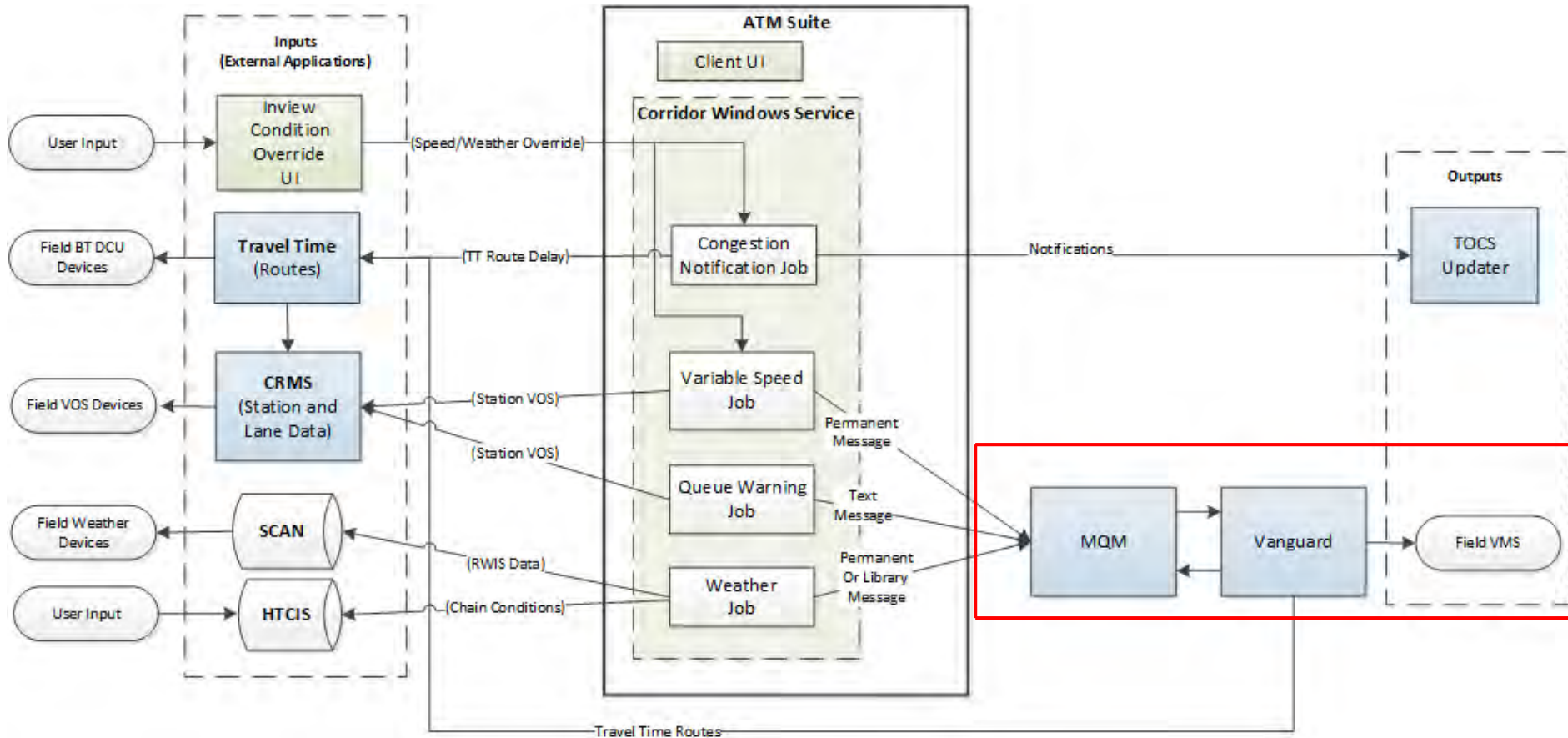
Refreshed At: 3/12/2018 3:45:54 PM

Sign	ID	Entries	Process	Priority	Expiration	Message Details	Last Status
I-205 MP11.65 NB (Gladstone)	232	1	Travel Time	7	03/12/2018 15:47:50	Library ID = 2023	TRAVEL TIME TO: POWELL BLVD 13 MIN 17 MIN
I-205 MP11.66 SB (Strawberry Ln)	7	1	Travel Time	7	03/12/2018 15:50:42	Library ID = 2021	TRAVEL TIME TO: 10TH ST 6 MIN I-5 12 MIN
I-205 MP14.58 NB (Sunnyside Rd) TTR	375	1	Travel Time	7	03/12/2018 15:48:35	Library ID = 2025	
I-205 MP20.21 NB (Stark)	231	1	Travel Time	7	03/12/2018 15:47:49	Library ID = 2022	TRAVEL TIME TO: AIRPORT WAY 6 MIN 5 VIA 84 11 MIN
I-205 MP24.5 SB (Airport Way)	9	1	Travel Time	7	03/12/2018 15:50:44	Library ID = 2027	TRAVEL TIME TO: I5 VIA I84 12MIN SUNNYSIDE 13MIN
I-405 MP0.86 SB (4th Ave) VAS	327	1	ATM.VAS	3	03/12/2018 15:47:34	Permanent Msg = 6	40 40
I-405 MP1.07 SB (Broadway) VAS	329	0					
I-405 MP1.47 SB (12th Ave/Montgomery) VAS	328	1	ATM.VAS	3	03/12/2018 15:48:34	Permanent Msg = 6	40 40
I-5 MP285.3 NB (Wilsonville)	17	1	Travel Time	7	03/12/2018 15:50:46	Library ID = 2028	TRAVEL TIME TO: OR217 10MIN 99E VIA I205 17MIN

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Home   Tools   Add-Ins

Play Message | Blank Display | Refresh Status | Display Control Panel | Quick Message | Play Schedule | Map View | List View | Group Selection | Hide Automated Displays | Display Monitor | Task Progress | Data Scope

Display Options   View   Monitoring

I-5 MP298.48 NB (Iowa): Run Message
Error: Reason Unknown.

List View   Header

Name	Number	Currently playing	Last update	Communication	Status errors	Software Control
Delta Hwy MP1.8 NB (Eugene)	267	ATM.QW	12:39 PM 3/12/2018	Online	🟢	Automated
I-205 MP11.65 NB (Gladstone)	226	I-205 NB at Gladstone	3:49 PM 3/12/2018	Online	🟢	Automated
I-205 MP11.66 SB (Strawberry Ln)	46	I-205 SB at Strawberry Ln	3:39 PM 3/12/2018	Online	🟢	Automated
I-205 MP14.58 NB (Sunnyside Rd) TTR	309	I-205 NB at Sunnyside TTR	3:50 PM 3/12/2018	Online	🟢	Automated
I-205 MP20.21 NB (Stark)	225	I-205 NB at Stark	3:49 PM 3/12/2018	Online	🟢	Automated
I-205 MP24.5 SB (Airport Way)	47	I-205 SB at Airport Way	3:49 PM 3/12/2018	Online	🟢	Automated
I-405 MP0.86 SB (4th Ave) VAS	268	Advisory Speed - 40	3:49 PM 3/12/2018	Online	🟢	Automated
I-405 MP1.07 SB (Broadway) VAS	270	Blank - 1	3:49 PM 3/12/2018	Online	🟢	Automated
I-405 MP1.47 SB (12th Ave/Montgomery) VAS	269	Advisory Speed - 35	3:50 PM 3/12/2018	Online	🟢	Automated
I-5 MP13 SB (Crowson Rd)	2	Blank - 1	11:02 AM 3/12/2018	Online	🟢	Vanguard Central
I-5 MP16.7 SB (Mt Ave)	3	Blank - 1	12:51 PM 3/9/2018	Online	🟡	Vanguard Central
I-5 MP170 SB (Cottage Grove)	8	Blank - 1	7:11 AM 3/8/2018	Online	🟢	Vanguard Central
I-5 MP186 NB (Dillard Rd)	9	Blank - 1	6:11 PM 3/11/2018	Online	🟢	Vanguard Central
I-5 MP190 SB (McVay - S. Eugene)	10	Blank - 1	6:11 PM 3/11/2018	Online	🟢	Vanguard Central
I-5 MP201.7 SB (Coburg)	11	Blank - 1	6:11 PM 3/11/2018	Online	🟡	Vanguard Central
I-5 MP214 NB (Lake Creek)	12	Blank - 1	6:12 PM 3/11/2018	Online	🟡	Vanguard Central
I-5 MP236.8 NB (N Albany)	13	Blank - 1	6:11 PM 3/11/2018	Online	🟢	Vanguard Central
I-5 MP25.45 NB (Phoenix)	4	Blank - 1	6:21 PM 3/7/2018	Online	🟢	Vanguard Central
I-5 MP252.51 SB (Kuebler - Salem)	297	Blank - 1	12:51 PM 3/12/2018	Online	🟢	Vanguard Central
I-5 MP261.9 NB (Perkins Rd)	14	Blank - 1	6:12 PM 3/11/2018	Online	🟡	Vanguard Central
I-5 MP280.7 SB (Arndt Rd)	15	Blank - 1	5:55 PM 2/22/2018	Online	🟢	Vanguard Central
I-5 MP285.3 NB (Wilsonville)	16	I-5 NB at Wilsonville	3:46 PM 3/12/2018	Online	🟢	Automated
I-5 MP287.42 NB (Norwood Rd) TTR	307	I-5 NB at Norwood TTR	3:50 PM 3/12/2018	Online	🟡	Automated
I-5 MP290.65 SB (Carman)	17	I-5 SB at Carman	3:32 PM 3/12/2018	Online	🟢	Automated
I-5 MP291 NB (Carman)	223	I-5 NB at Carman	3:50 PM 3/12/2018	Online	🟢	Automated
I-5 MP292.06 NB (OR217 NB ramp) LEFT CWS	73	Slow	3:39 PM 3/12/2018	Online	🟢	Automated
I-5 MP292.06 NB (OR217 NB ramp) RIGHT CWS	80	Slow	3:39 PM 3/12/2018	Online	🟢	Automated
I-5 MP298.38 SB (Terwilliger)	229	I-5 SB at Terwilliger	3:43 PM 3/12/2018	Online	🟢	Automated
I-5 MP298.48 NB (Iowa)	18	ATM.QW	3:46 PM 3/12/2018	Online	🟡	Automated
I-5 MP299.36 SB (Hood Ave) VAS	272	Advisory Speed- 45	3:50 PM 3/12/2018	Online	🟢	Automated
I-5 MP299.48 NB (Gaines St) TTR	308	I-5 NB at Gaines TTR	3:50 PM 3/12/2018	Online	🟢	Automated
I-5 MP299.83/I-405 MP0.21 SB (Ross Island Br) VAS	273	Advisory Speed - 45	3:50 PM 3/12/2018	Online	🟢	Automated
I-5 MP300.26 SB (Marquam Br) VAS	274	Blank - 1	7:46 AM 4/8/2016	Error	🟡	Automated
I-5 MP300.8 SB (SE Hawthorne) VAS	275	Blank - 1	3:14 PM 12/14/2017	Error	🟡	Automated
I-5 MP301.2 SB (Morrison Br) VAS	271	Blank - 1	2:05 PM 3/12/2018	Online	🟢	Automated
I-5 MP305.44 SB (Lombard)	228	I-5 SB at Lombard	3:49 PM 3/12/2018	Online	🟢	Automated
I-5 MP305.67 NB (Columbia)	19	I-5 NB at Columbia	3:49 PM 3/12/2018	Online	🟢	Automated
I-5 MP31.2 SB (Table Rock)	5	Blank - 1	6:01 AM 3/7/2018	Online	🟢	Vanguard Central
I-5 MP64 NB (Hugo)	6	Blank - 1	1:54 PM 3/11/2018	Online	🟢	Vanguard Central
I-5 MP793 NB (Bailey Hill-CA)	1	Blank - 1	5:54 PM 3/11/2018	Online	🟢	Vanguard Central
I-5 MP83 SB (Glendale)	7	Blank - 1	2:35 PM 3/9/2018	Online	🟢	Vanguard Central
I-82 MP10 WB (Westland)	20	Blank - 1	2:43 PM 2/22/2018	Online	🟡	Vanguard Central

Delta Hwy MP1.8 NB (Eugene)

Last update: 12:39 PM 3/12/2018
Communication: Online   Automated

CONGESTION
RIGHT LN 1 MILE
PREPARE TO SLOW

Running now: ATM.QW
Owner: MQM
End time: 12:44 PM 3/12/2018

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Thank you.

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