

Data Tools You Can Use: Resources for Traffic Speed, Volumes, and Crashes

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Data Analytics and Performance Reporting (DAPR) Team
Transportation Planning Analysis Unit (TPAU)

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TPAU: Transportation Planning Analysis Unit

DAPR: Data Analytics and Performance Reporting Program

DAPR Mission: provide guidance on data analytics and tools necessary to support statewide transportation analysis and system performance reporting.

Operational speed data analysis, outreach and support is a key part of this mission.

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- ❖ Shen Qu, Transportation System Analyst
- ❖ Becky Knudson, Senior Transportation Economist



REGION EXPLORER

Explore the relationships between bottlenecks and traffic events in real-time and in the past.

[Tutorial](#) [Help](#)



CONGESTION SCAN

Analyze the rise and fall of congested conditions on a stretch of road.

[Tutorial](#) [Help](#) [History](#)



PERFORMANCE CHARTS

Chart performance metrics over time.

[Tutorial](#) [Help](#) [History](#)



BOTTLENECK RANKING

Rank bottlenecks and discover which ones have the greatest impact.

[Tutorial](#) [Help](#) [History](#)



DASHBOARD

Create your own personal dashboards to monitor corridor performance in regions of interest.

[Tutorial](#) [Help](#)

Data-Driven Safety Analysis



RISKY BEHAVIORS



IMPAIRED DRIVING
UNBELTED OCCUPANTS
SPEEDING
DISTRACTED DRIVING

INFRASTRUCTURE



INTERSECTION
ROADWAY DEPARTURE

VULNERABLE USERS



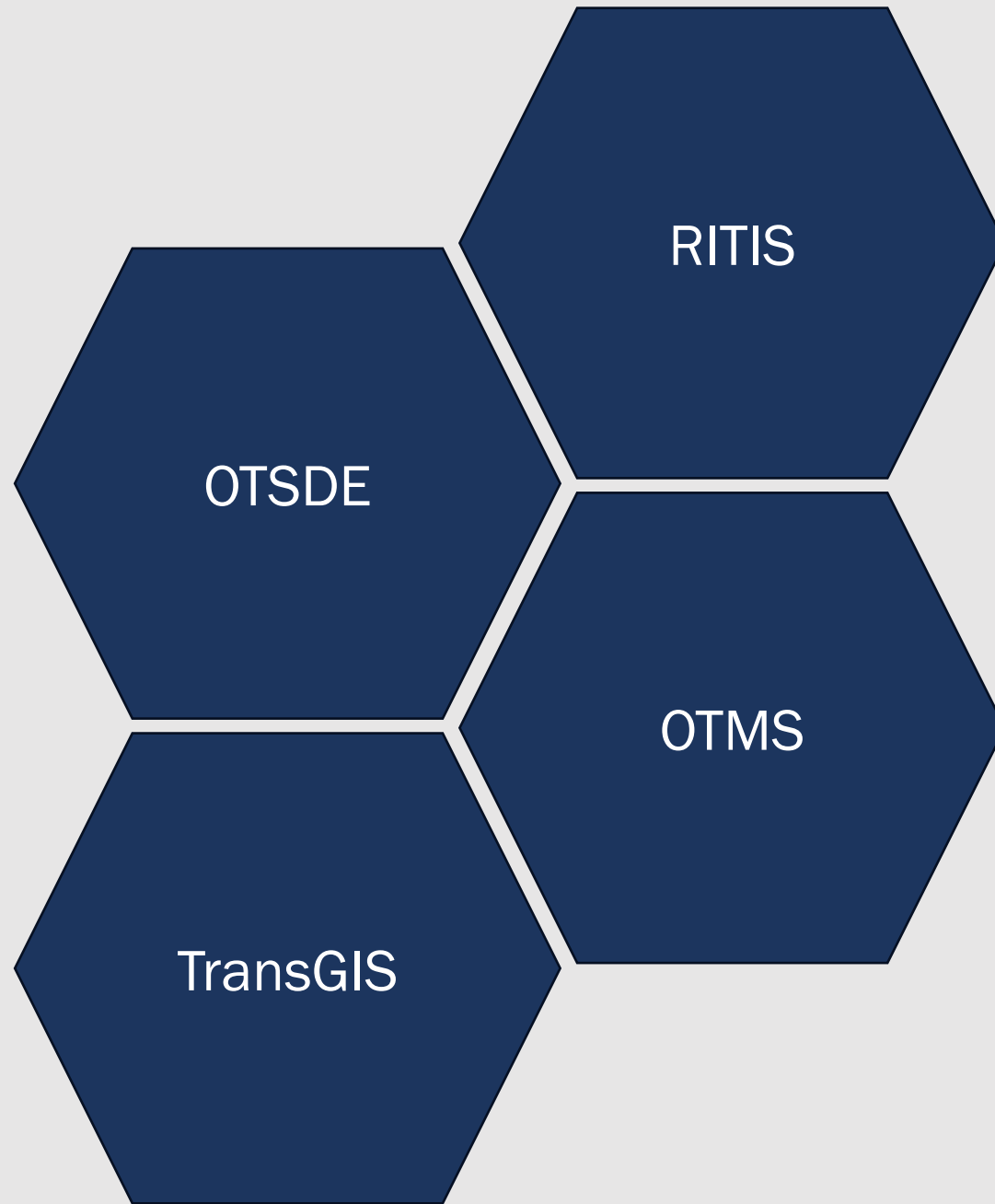
PEDESTRIANS
BICYCLISTS
MOTORCYCLISTS
AGING ROAD USERS

IMPROVED SYSTEMS



IMPROVED DATA
TRAINING AND EDUCATION
ENFORCEMENT
EMERGENCY MEDICAL SERVICES
COMMERCIAL VEHICLES

*See also active ODOT
Research: SPR 841
“Understanding
Pedestrian Crash Injury
and Social Equity
Disparities in Oregon*



FREE DATA!

Crash Data + tools for visualizing, filtering, and reporting crash data and more in context.

OTSDE
Oregon
Transportation
Safety Data Explorer

Easy to use platform for basic access to **Crash Data, Annual Average Daily Traffic, Posted Speed Limits**, and more.

TransGIS
Map-Based
Inventory Data

RITIS
Regional
Integrated
Transportation
Information
System

High Resolution Operating Speed Data + tools for analyzing continually collected real-time and historic data on nearly all roads

OTMS
Oregon Traffic
Monitoring
System

Annual Average Daily Traffic + hourly data, vehicle classification, vehicle speed, and historical trend information (availability varies by location).

TransGIS, OTSDE, and OTMS are all free to use with no login needed. RITIS is free for public agencies or consultants/researchers working for them.

<https://gis.odot.state.or.us/transGIS/>

TransGIS Map-Based Inventory Data

*Includes content from
the Crash Data System*

ODOT TransGIS

Layers | Basemaps | Legend

Traffic Flow (AADT)

Annual Avg Daily Traffic (AADT)

- 75001 +
- 50001 - 75000
- 30001 - 50000
- 20001 - 30000
- 15001 - 20000
- 10001 - 15000

Select from a layer category

- Structures
- Drainage
- Equipment - Highway
- Roadway
- Roadside
- Freight
- Rail
- Public Transportation
- Traffic Data
- Road Network
- Classifications
- Safety
- Projects & Needs for Scoping
- Planning and Climate Change Resilience
- Geology
- Maintenance and Facilities
- Environmental
- Boundaries

Active Layers

- Traffic Flow (AADT) [Opacity 100%]
- Download Shapefile
- Download CSV
- Zoom to Layer Extent
- Set Filter by Current Extent
- Clear Filter

Traffic Flow (AADT)

Apply as Sketch | Buffer Geometry | More

ODOT Highway Number	039
Highway Number Suffix	00
Roadway ID	1
Mileage Type	0
Overlap Mileage Code	0
Milepoint	22.96
Begin Milepoint	21.58
End Milepoint	23.04
Site Number	2242
Annual Avg Daily Traffic (AADT)	14565
AADT Range	10,001 - 15,000
Truck AADT	553
Truck Percent	3.8
Truck AADT Range	500 - 999
01-Motorcycle	0.1
02-Car	82.4
03-Light Truck	13.7

Maxar | Oregon Department of Transportation | Oregon Department of Transportation

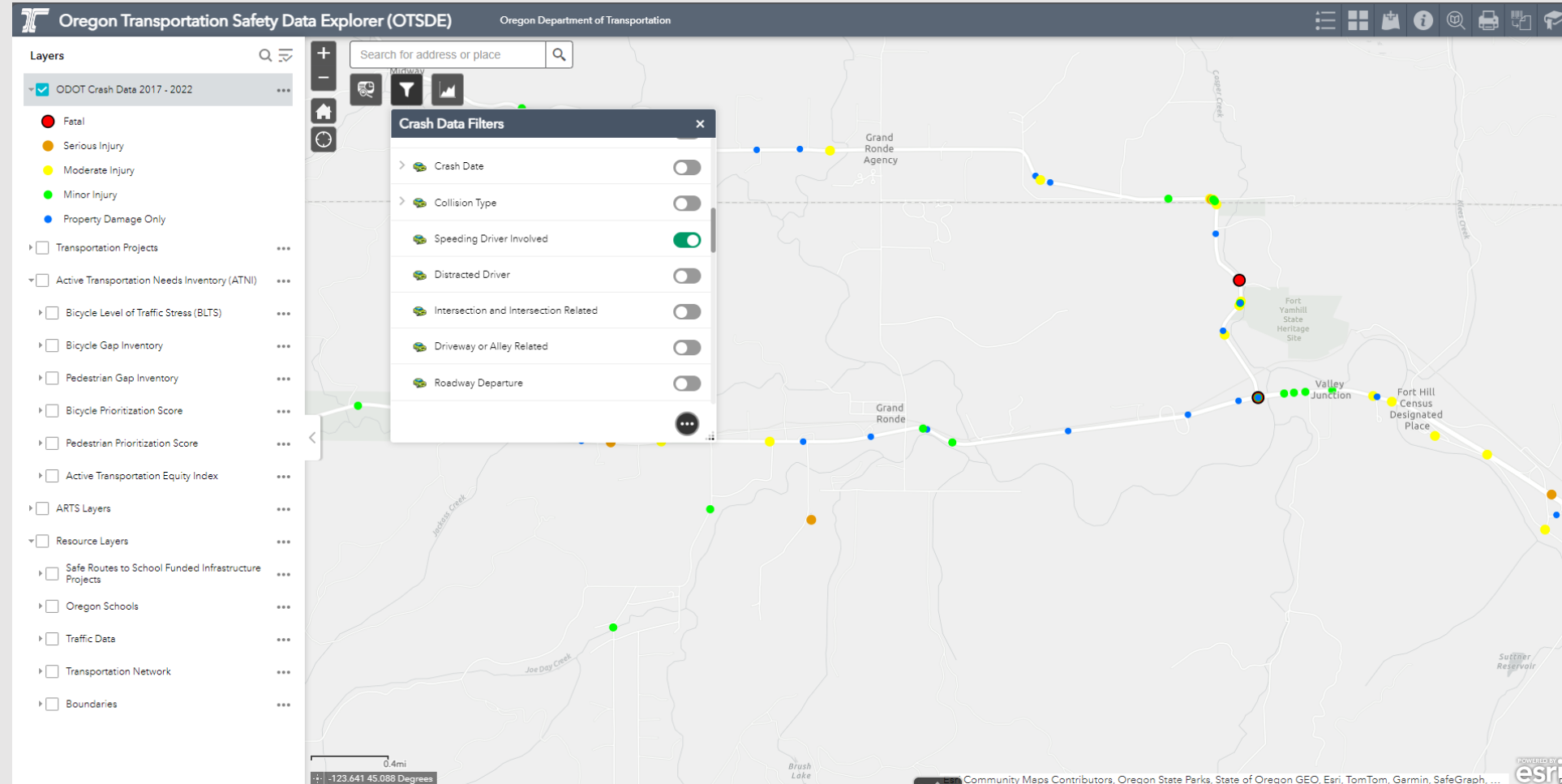
Oregon Department of Transportation © 2009-2024

OTSDE Oregon Transportation Safety Data Explorer

*Includes content from
the Crash Data System*

- Dig deeper or create quick reports with pre-made filters, graphs, and reports
- Put crash data in context with ODOT's Active Transportation Needs Inventory (ATNI) results and more

[Link](#) or find it on the ODOT Transportation Data Portal under “Safety – Crash”



OTMS Oregon Traffic Monitoring System

<https://ordot.public.ms2soft.com/tcds>

Or find it via. the ODOT Traffic Counting page

- Access full traffic count data reports including time-of-day details and historical context.
- Use “Site ID” from TransGIS as the “Location ID” in OTMS

Volume Count Report

LOCATION INFO

Location ID	2242
Type	SPOT
Funct'l Class	3
Located On	SALMON RIVER HIGHWAY NO. 39
Loc On Alias	039
WEST OF	Three Rivers Highway (OR22) [0.10 miles]
Direction	2-WAY
County	Polk
Community	-
MPO ID	-
HPMS ID	-
Agency	ODOT

COUNT DATA INFO

Count Status	Accepted
Holiday	No
Start Date	Tue 4/5/2022
End Date	Wed 4/6/2022
Start Time	12:00:00 PM
End Time	12:00:00 PM
Direction	2-WAY
Notes	ordot
Station	22423070
Study	-
Speed Limit	-
Description	-
Sensor Type	Axle/Tube
Source	TCDS_COUNT_IMPORT_COMBINE
Latitude,Longitude	-

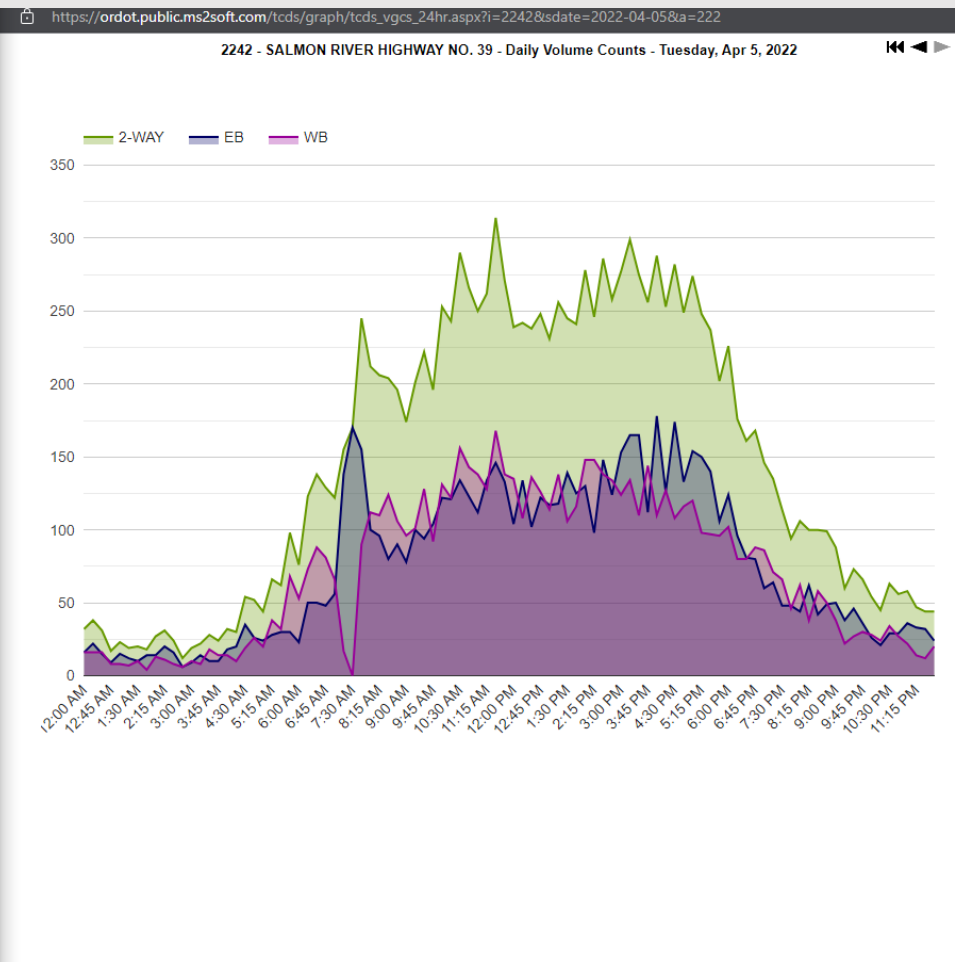
INTERVAL: 15-MIN

Time	15-min Interval				Hourly Count
	1st	2nd	3rd	4th	
0:00-1:00	32	38	31	17	118
1:00-2:00	23	19	20	18	80
2:00-3:00	27	31	24	12	94
3:00-4:00	19	22	28	24	93
4:00-5:00	32	30	54	52	168
5:00-6:00	44	66	62	98	270
6:00-7:00	76	123	138	129	466
7:00-8:00	122	155	170	245	692
8:00-9:00	212	206	204	196	818
9:00-10:00	174	201	222	196	793
10:00-11:00	253	243	290	266	1,052
11:00-12:00	250	262	314	271	1,097
12:00-13:00	239	242	238	248	967
13:00-14:00	231	256	245	241	973
14:00-15:00	278	246	286	258	1,068
15:00-16:00	277	299	275	256	1,107
16:00-17:00	288	253	282	249	1,072
17:00-18:00	274	248	237	202	961
18:00-19:00	228	176	161	168	731
19:00-20:00	146	135	114	94	489
20:00-21:00	106	100	100	99	405
21:00-22:00	88	60	73	66	287
22:00-23:00	54	45	63	56	218
23:00-24:00	58	47	44	44	193
Total					14,212
AAOT					14,638
AM Peak					11:00-12:00 1,097
PM Peak					14:30-15:30 1,120

Count Navigation: [Navigation icons] Count Type: VOLUME

Directions: 2-WAY EB WB

View Calendar View in Excel Bar Graph Line Graph Weekly Report Hourly Volume By Lane Compare Count



RITIS
Regional
Integrated
Transportation
Information
System

<https://www.oregon.gov/odot/Data/Pages/RITIS.aspx>

High Resolution
Operating Speed Data +
tools for analyzing
continually collected
real-time and historic
data on nearly all roads

RITIS

INTRODUCTION TOOL CATALOG USE CASES GET ACCESS TUTORIALS TEMPLATES [LOG IN](#)

REGIONAL INTEGRATED TRANSPORTATION INFORMATION SYSTEM

A data-driven platform for transportation analysis, monitoring, and data visualization

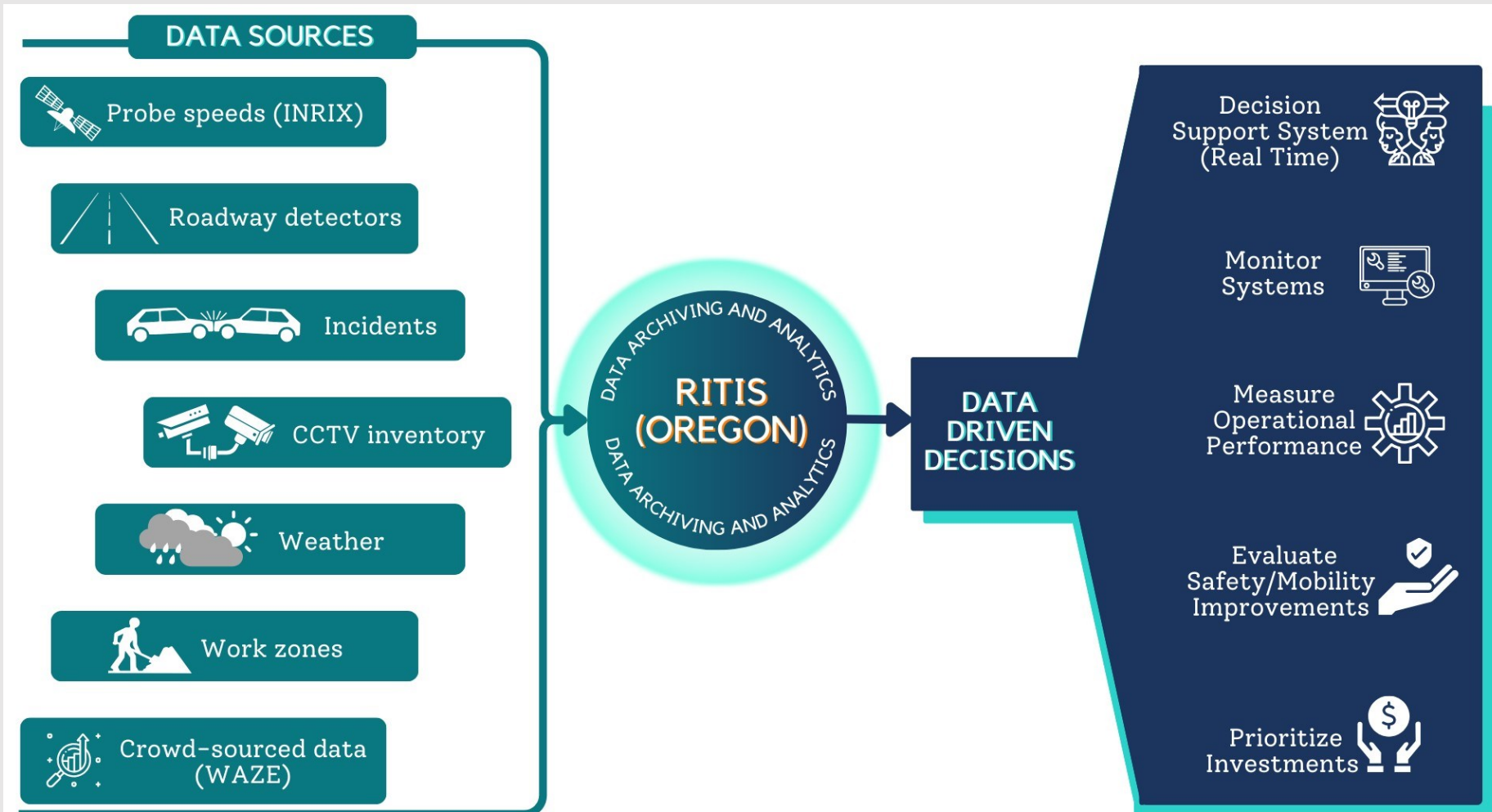
Email

Password

[FORGOT YOUR PASSWORD?](#) [LOG IN](#)
[CHANGE PASSWORD](#)
[REQUEST AN ACCOUNT](#)

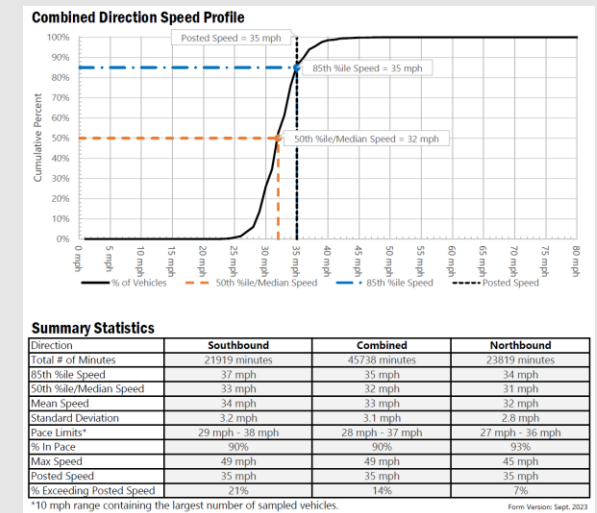
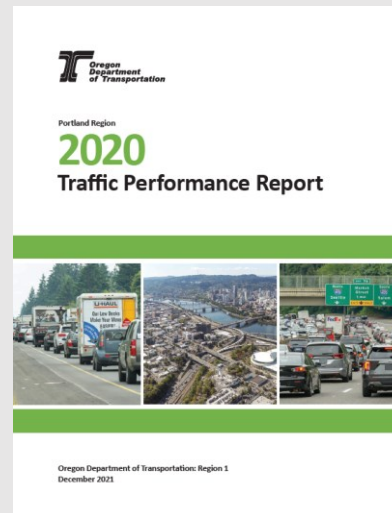
Regional Integrated Transportation Information System (RITIS)

Accounts are available free to public agency staff in Oregon and Clark County WA and consultants and Universities working on a public agency contract.



How does ODOT use RITIS?

The live and archived data and analysis tools can serve many purposes...



Maintenance and Operations staff use live travel times for RealTime signs and situational awareness

Analysts and Planners use archived data to understand traffic dynamics and build better models

Safety Investigators use desk survey of speed history to supplement fieldwork and help prioritize investments

Example speed data for OR18 ~ 4 miles centered on Spirit Mountain. August 2024 Weekdays vs. Weekends



Posted Speed 45 mph in center, 55 mph approaching

Performance Charts

#Example Spirit Mountain - September 2024

mode
Chart per direction

Type

Layout

Tooltips
Clicking a chart item will lock tooltips at that interval on each chart
Remove all tooltips

Y Axis X Axis

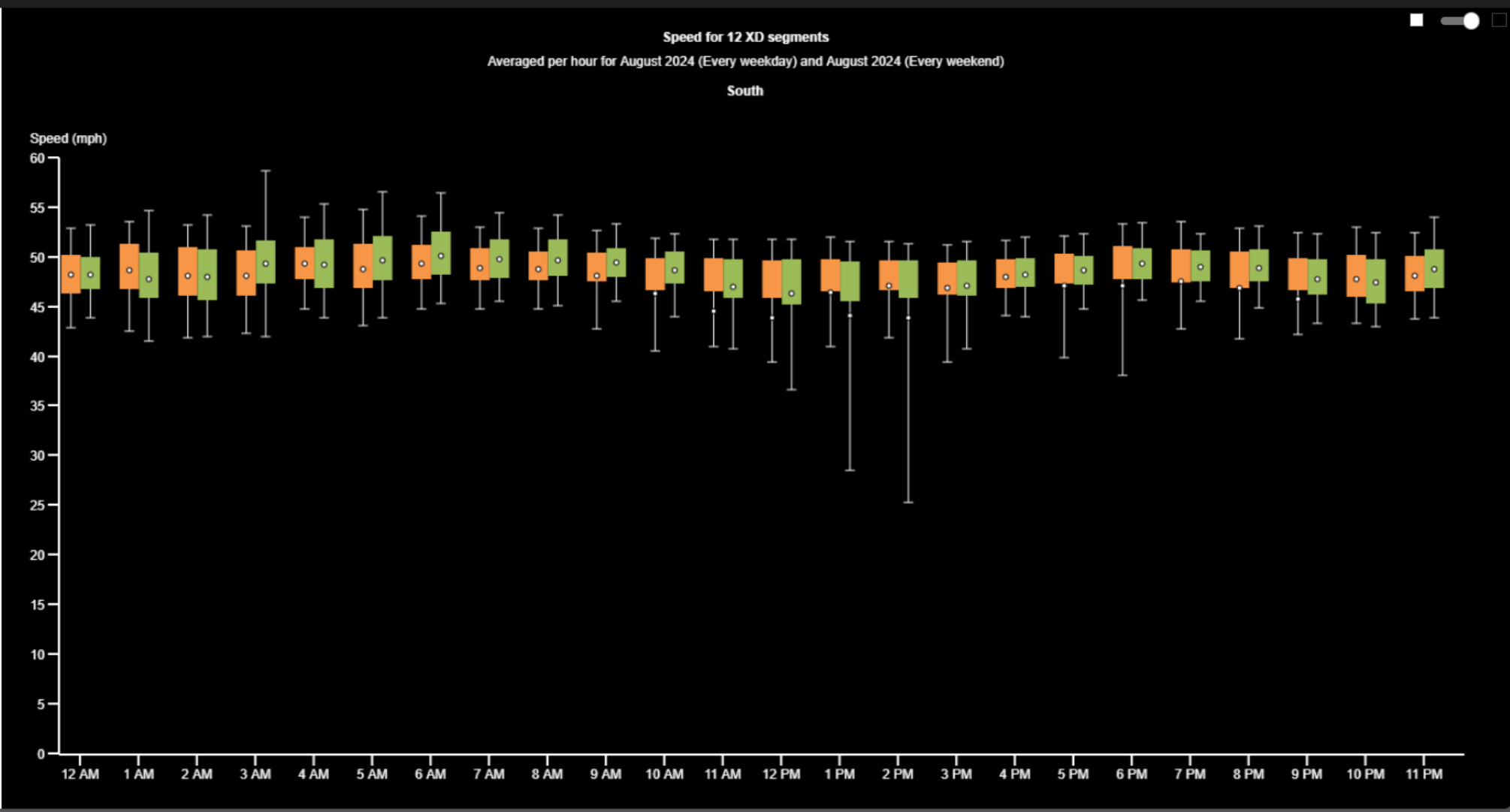
Y axis label
Above axis Centered on axis

Y axis scale
Best fit Custom fit

Metric
Speed (mph)

Chart data
 INRIX XDs
 August 2024 (Every weekday)
 August 2024 (Every weekend)

Charts
 South



Speed Bins

August 2024

S M T W T F S

Hours: 66 hrs 54 mins

% of Hours: 12.67%

Speed: 50 - 54 mph

Code: 386002077

August 2024

S M T W T F S

Hours: 356 hrs 11 mins

% of Hours: 67.46%

Speed: 45 - 49 mph

Code: 386002077

August 2024

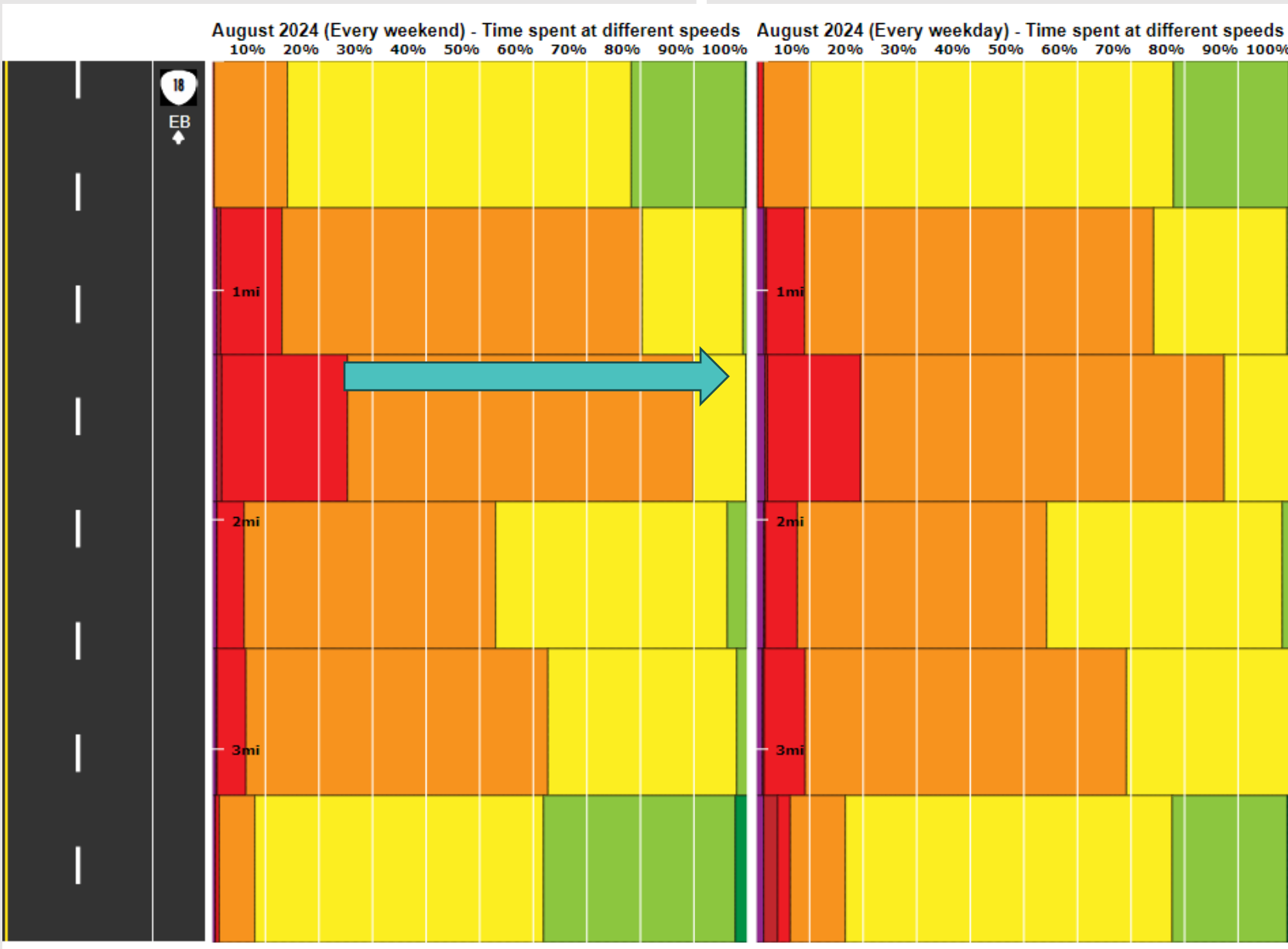
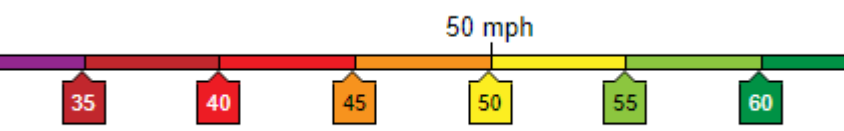
S M T W T F S

Hours: 8 hrs 52 mins

% of Hours: 1.68%

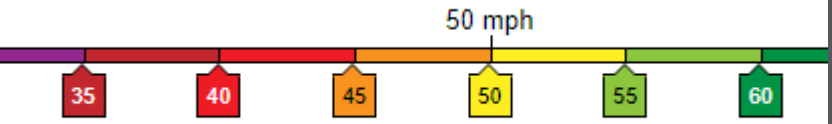
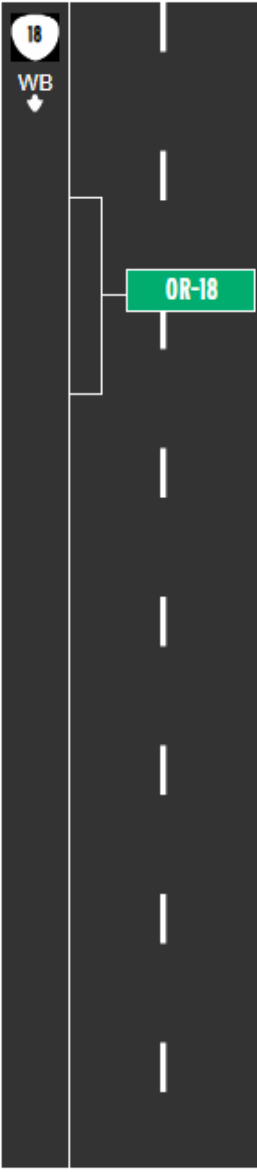
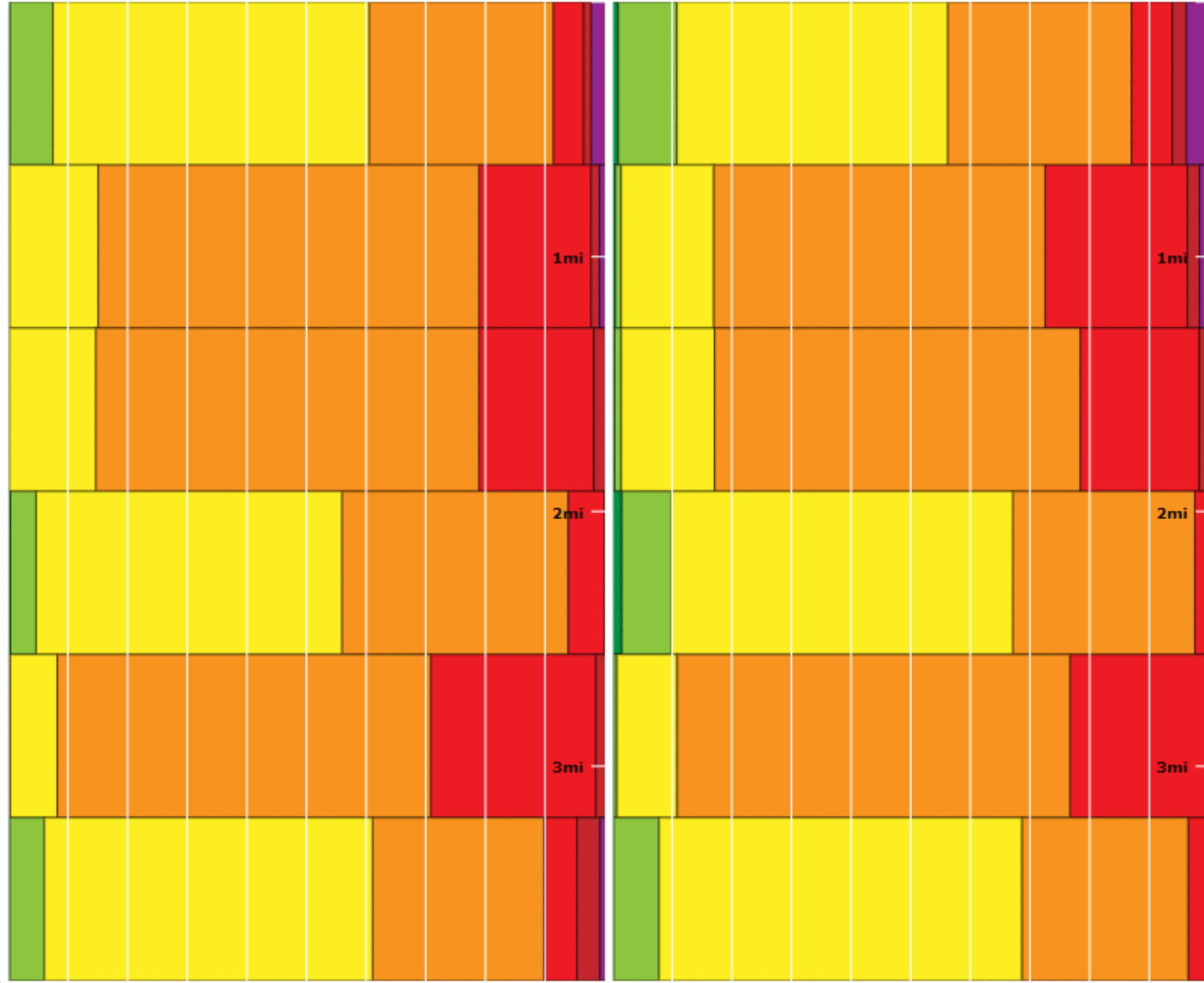
Speed: < 35 mph

Code: 386002077



Speed Bins

August 2024 (Every weekday) - Time spent at different speeds August 2024 (Every weekend) - Time spent at different speeds



Speed Bins

Data type

Speed (mph)

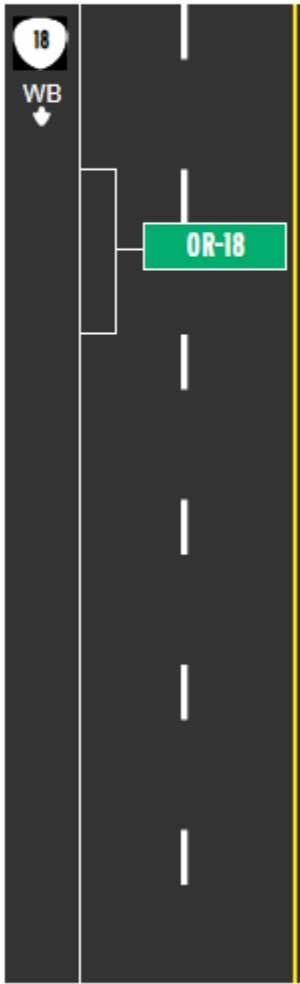
Display hours as

Totals Percentages

Color Thresholds



August 2024 (Every weekend) - Time spent at different speeds



August 2024
S M T W T F S
Hours: 1 hrs 19 mins
% of Hours: 0.61%
Speed: >= 65 mph
Code: 429026076

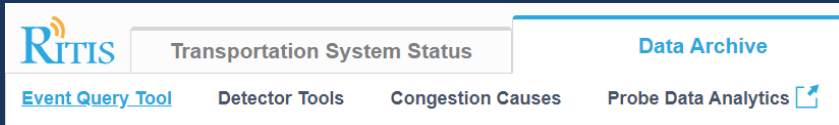
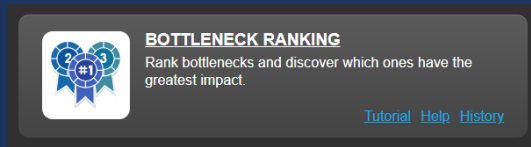
Instead of using Google Maps...

- One-by-one travel time estimates
- Need to watch real-time traffic map in the moment
- “Black Box” algorithm and results
- Manual work to document and analyze

Try RITIS + Inrix XD to ...

- Easily get repeatable results for large/multiple study area(s)
- Go “back in time” to watch the traffic map with ODOT and Waze incident data and weather overlays
- Obtain and compare speed, travel time, and reliability statistics for flexible study periods including months or years at a time.
- Export custom interactive maps and data visualizations
- Leverage extensive documentation and reporting templates

Instead of
searching news
reports or relying
on public feedback
alone...



Try RITIS +
Event Query Tool and
Bottleneck Ranking Tool to ...


- Easily search, analyze, and report on ODOT-verified incidents (highways) and crowd-sourced WAZE incidents (all roads)
- Tap into always-on algorithmic analysis of bottlenecks

What could RITIS do for you as Transportation Safety Professionals?


We would like to help you identify, develop, and implement relevant use cases.




Support grants with new data during application or after implementation?



Help prepare for and monitor special events or construction?



Supplement situational awareness or decision support systems?



Help identify or prioritize safety corridors, enforcement, and outreach?

Have an idea you think might be a good fit but want to know more?

Contact us at ritis@odot.oregon.gov

DATA SOURCES

Probe speeds (INRIX)

Thank You!

Decision
Support System
(Real Time)



ODOT RITIS webpage:

<https://www.oregon.gov/odot/Data/Pages/RITIS.aspx>

TransGIS, Crash Data System, Traffic Volumes, and more:

<https://www.oregon.gov/odot/Data/Pages/TransData-Portal.aspx>

Contact us at

ritis@odot.oregon.gov

Evaluate
Safety/Mobility
Improvements



Prioritize
Investments

