



Transportation System Operations

2022

**Annual
REPORT**

TABLE OF CONTENTS

Take the time to look back over the year and note the many projects completed and accomplishments achieved by System Operations and Intelligent Transportation Systems (ITS) and Traffic - Roadway.

03**ITS PROJECT DELIVERY****30****TRAFFIC SIGNAL SERVICES UNIT****09****COMMERCE & COMPLIANCE****33****ITS FIELD MAINTENANCE****11****PERFORMANCE MEASURES****38****TOC OPERATIONS****13****TRAVELER INFORMATION****42****SIGNS & SIGNALS****23****TRAFFIC INCIDENT MANAGEMENT****46****BROADBAND****27****ITS APPLICATION SUPPORT****50****CONNECTED & AUTOMATED VEHICLES**

“Collaborative, One ODOT program approach”

ITS Project Delivery &

The Commerce & Compliance Division

*“Supporting ODOT’s ITS and Traffic Signal
Operations projects at all stages”*

Planning, engineering design, construction, support, and system commissioning/configuration are all ways our engineering team support ITS Project Delivery.



Oregon Statewide ITS Architecture and Operational Concept Plan

ITS ARCHITECTURE & OPERATIONAL CONCEPT PLAN

The plan addresses the long-term phased deployment of ITS Projects, including advanced technologies and management techniques, aimed to improve the safety and efficiency of the transportation system.

[Read the updated plan at Oregon.gov](https://www.oregon.gov/transportation/its/its-architecture-and-operational-concept-plan)



ODOT MAINTENANCE & OPERATIONS BRANCH TECHNOLOGY & DATA PLAN

MAINTENANCE & OPERATIONS BRANCH TECHNOLOGY & DATA PLAN

The plan for coordinating ODOTs statewide maintenance and operations activities, as well as the technology and data resources to support those activities.

[Read the updated plan at Oregon.gov](https://www.oregon.gov/transportation/its/its-architecture-and-operational-concept-plan)

SEPTEMBER 2022

 Oregon
Department
of Transportation

DKS

OR62 ROGUE VALLEY EXPRESSWAY PROJECT

In Medford an **expressway** was installed on Oregon 62 (OR 62) for traffic to bypass the signalized Crater Lake Highway.

Variable message signs were installed in advance of the expressway entrances in order to notify the public of nearby incidents and direct them to the safest route.

Cameras and traffic sensors were added to the expressway to monitor congestion along the highway and provide the public with real-time images of current highway conditions.



3 Variable Message Signs Installed.



3 Traffic Congestion Sensors Installed on Expressway.



4 Pan Tilt & Zoom Cameras Installed.



US97 VSL PROJECT

From south of Bend to Sunriver a **new variable speed limit** and **weather warning system** was installed. The system will automatically detect hazardous weather conditions and lower the speed limits for U.S. 97. The more severe the weather, the slower the posted speed.

Variable messages signs are added as support at the beginning of the northbound and southbound corridors to provide general incident messaging and to direct vehicles to turn on lights in low visibility conditions.

ITS INFRASTRUCTURE INSTALLED

- 4 Variable Speed Limit Signs on single post structures.
- 2 Variable Speed Limit Signs with two supporting Variable Message Signs on cantilever structures.
- 1 One Variable Message Sign for general purpose.
- 2 Weather Stations with traffic sensors monitoring congestion.
- 2 TripCheck Cameras.
- + 5,200 feet of 600v power for devices.

I-5 CALIFORNIA STATE LINE VARIABLE SPEED LIMIT PROJECT

An automated **Variable Speed Limit (VSL) and weather warning system** was installed on I-5 just north of the California border from milepoint 3 to 10.

Additionally, **signs were added to warn traffic of sharp road curves** ahead and to direct vehicles to slow down if approaching the curves at an unsafe speed.

ITS INFRASTRUCTURE INSTALLED:

- Three **variable speed limit** signs with supporting variable message signs.
- Two **curve warning** variable message signs.
- One **variable message** sign for general purpose.
- Three **weather stations** with traffic sensors monitoring congestion. Six TripCheck cameras.
- 8,500 feet of 600V **power** for devices.



ATCMTD PROJECT STATUS

Of the nine projects that made up the start of the ATCMTD grant, **five have been completed**. Of the five completed, three were completed in 2022.

01

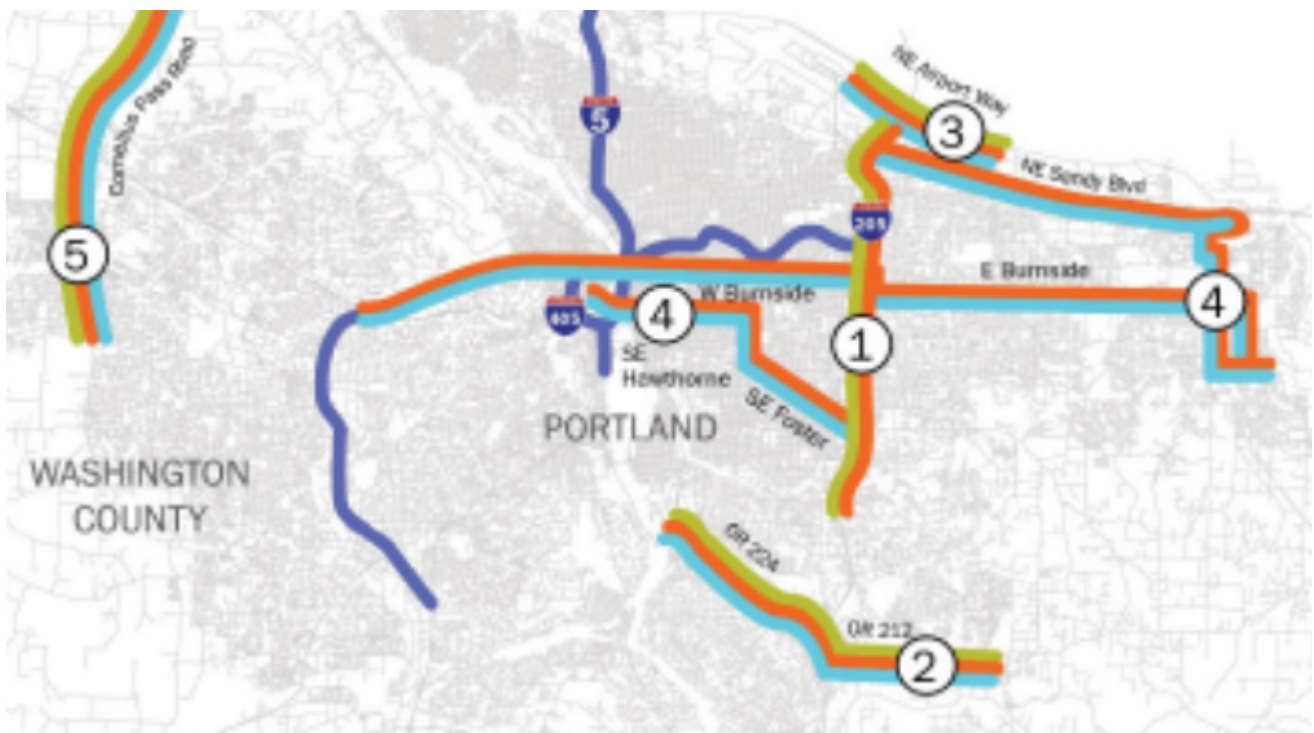
I-205 ACTIVE TRAFFIC MANAGEMENT.

06

US97 VARIABLE SPEED LIMIT.

09

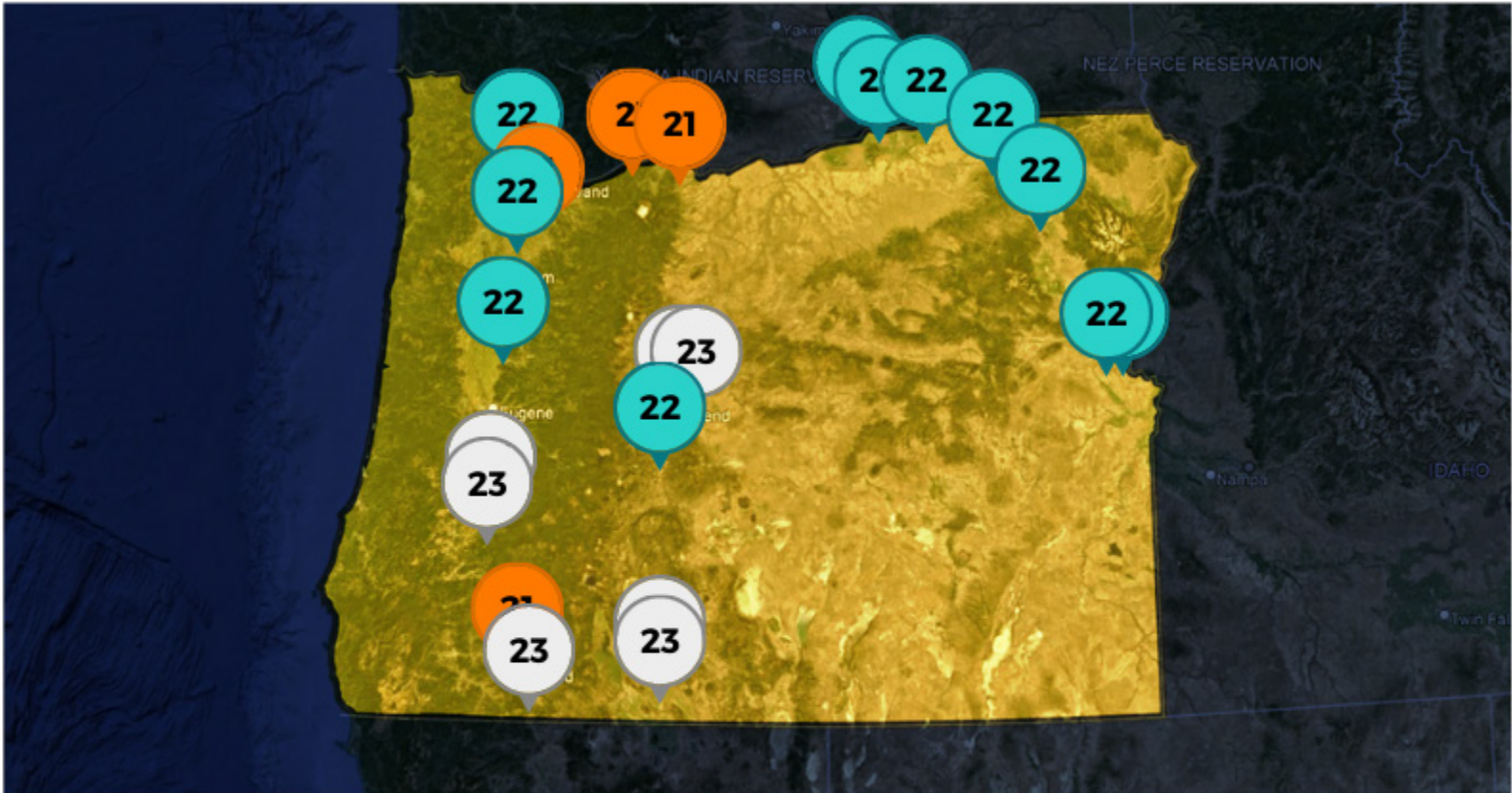
METRO MULTI-MODAL ICM* ARCHITECTURE.



*ICM or Integrated Corridor Management

10 SITES UPGRADED IN 2022

WEIGH-IN-MOTION (WIM) PROJECTS



FOUR
WEIGH-IN-MOTION
SITES UPGRADED
IN 2021.



TEN
WEIGH-IN-MOTION
SITES UPGRADED
IN 2022.



FIVE
SITES TO-BE
UPGRADED
IN 2023-2024.

Upgrade work includes cabinet replacements, transformer relocations, repairing damaged equipment, ITS standards compliance, fiber optic network installation, and roadside device transition from the Department of Administrative Services (DAS) to ITS network with additional security.



ITS / CCD WIM SYSTEM ACCOMPLISHMENTS

In a world of just-in-time deliveries, transportation agencies recognize that the business community expects weighing a truck and checking its credentials to take as little time as possible.

01

WIM system **design integrated** into highway repaving projects.

02

WIM system design has been included in seven current and future Statewide Transportation Improvement Program (**STIP**) projects.

03

Statewide **environmental inspections** are being completed at all WIM sites for utilization of **federal funds** for infrastructure maintenance.

04

High speed fiber optic network installed at 7 sites for near-statewide Drivewyze compatibility.

05

Pilot effort for integrating a new WIM system controller from Intelligent Imaging Systems.

06

Created a **Data Warehouse database** of CCD WIM system information.

07

Developed **automated reports** that compare WIM system weights with static scale weights to determine when WIM systems need to be recalibrated.

08

WIM systems have been integrated into the **ITS device console** to notify ITS maintenance of site outages.

*Drivewyze is an additional bypassing method to screen more vehicles on the highway and **reduce manual vehicle processing** that creates highway congestion.*



Performance Measures

“Optimizing operations & management through data driven decision making.”

Performance measures provide decision-makers with more tools by giving them better access to data, new data, and reports that are more accessible and meaningful.

INVIEW REPORTS

While there has been a slight uptick in available reports being viewed, most are unaware these reports are available. A list of the categories of reports is available below.



TRANSPORTATION OPERATIONS CENTERS



MOBILITY



TSMO ASSET & SUPPORT



TRAFFIC INCIDENT MANAGEMENT



ROAD & WEATHER



WORK MANAGEMENT



TRAVELER INFORMATION

VIEW REPORTS





Traveler Information

“Providing travelers with useful endpoints to information that makes their journey economic and safe.”

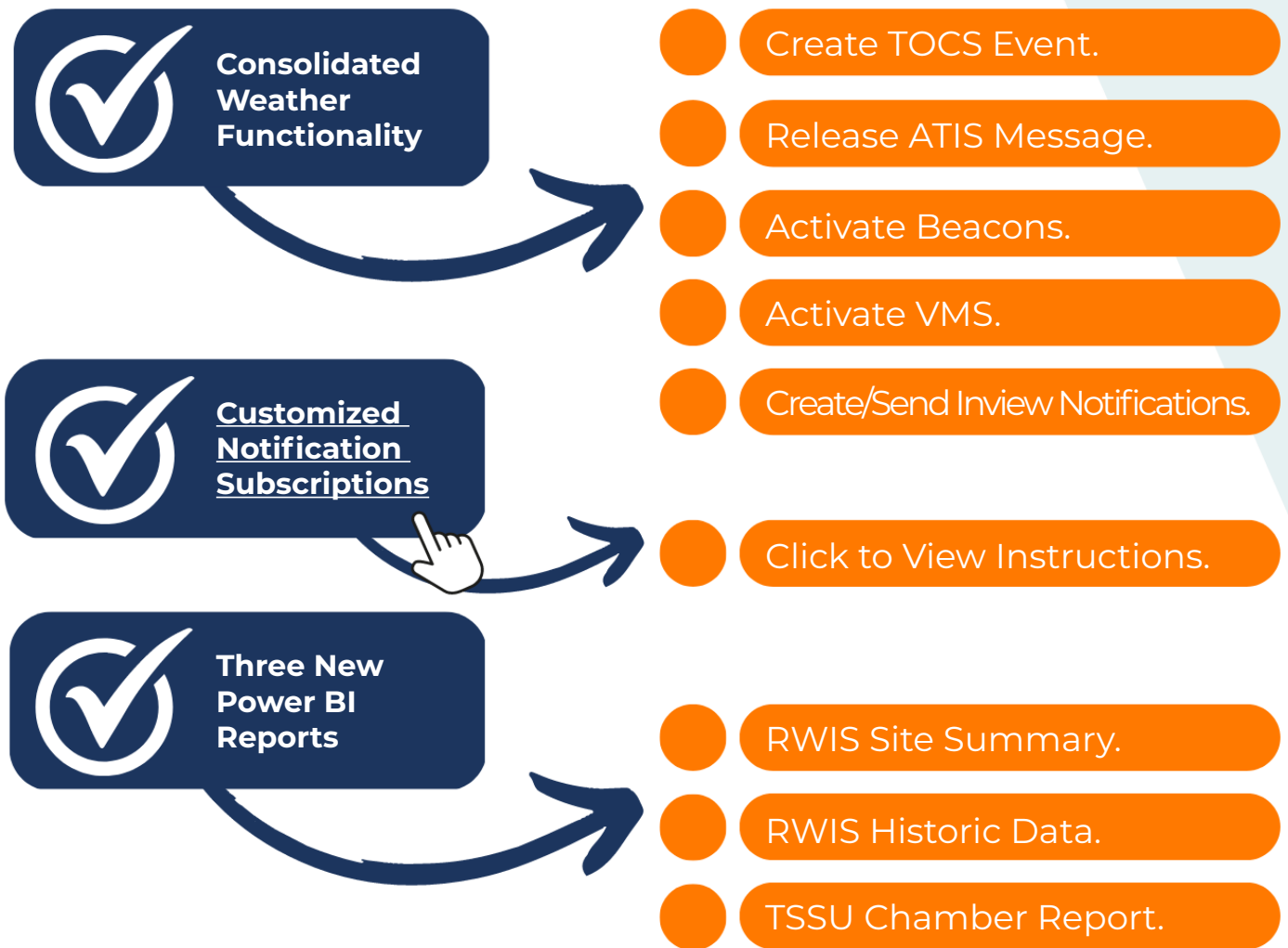
Under the Traveler Information umbrella is TripCheck, TripCheck Local Entry (TLE), TripCheck Application Program Interface (API), TripCheck on Twitter, and 511.

All these systems serve to enhance the traveler experience today and into the future.

RWIS MODERNIZATION

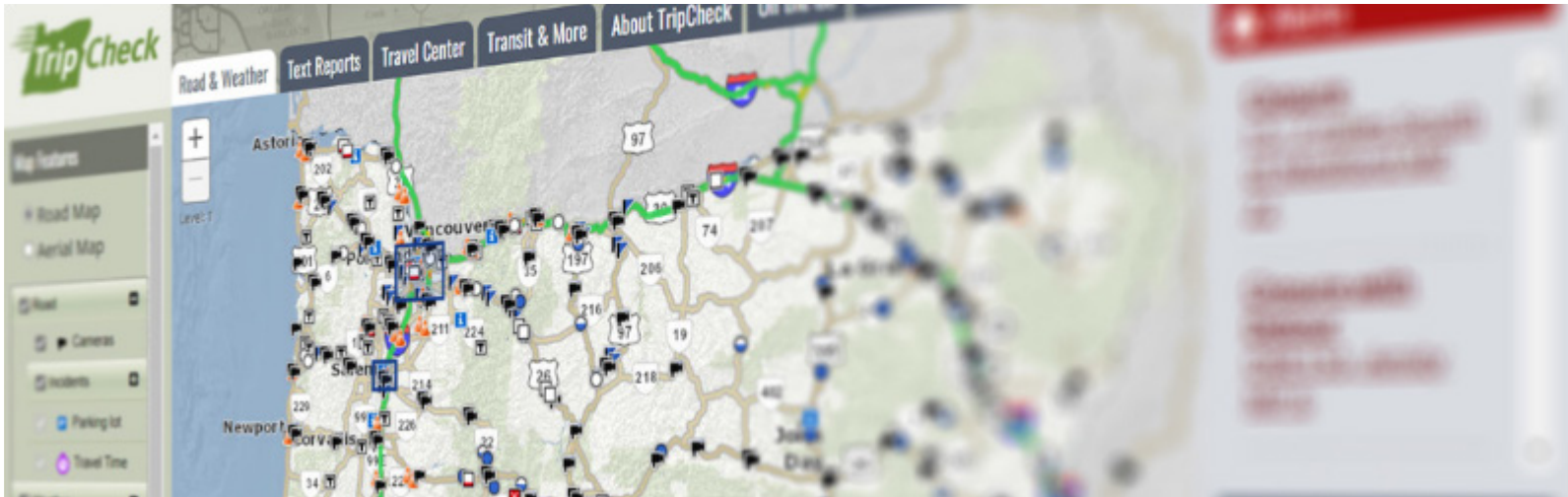
SCANWEB REPLACEMENT

This project leveraged the ActiveITS database to replace the SCAN database, and ODOT weather data collection and publishing applications into a single service.



SCANWeb’s vendor, Vaisala, **discontinued support for the SCAN** product in 2004. In 2017, ODOT acquired the ActiveITS system from the Southwest Research Institute (SwRI). ActiveITS is the Active Transportation Management System used by several state transportation departments across the U.S.

*RWIS - Road and Weather Information System

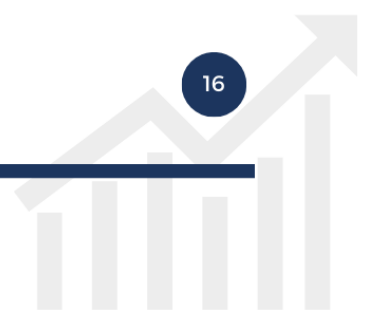


Detailed Information

OR-217 SB MP 2 to 6, SB delay 7 minutes	
OR-217 SB MP 2 - 6 OR-217, 2 miles South of US- 26	Estimated delay of 20 minutes - 2 hours Road Construction
Current Travel Delay: SB Estimated Delay 7 minutes.	
Comments: Nighttime single lane closure on OR 217 south Wednesday at Allen Boulevard and on OR 217 north Thursday between OR 99W and Greenburg Road. Overnight traffic signal shutdown Thursday on Allen Boulevard at the southbound ramps. Flaggers directing traffic. The right turn lane on the OR 99W southbound off-ramp is closed for several months. Right turns permitted from the middle lane. Auxiliary lane closures on OR 217 south from Scholls Ferry Road to OR 99W. Left-turns closed to/from the Allen Boulevard southbound ramps 24/7 through Dec 22. Daytime shoulder closures on OR 217 and local roads near the highway ramps. On- and off-ramps temporarily narrowed. Short-term pedestrian detours on the north side of Hall Boulevard near Cascade Avenue and the north side of the Denney Road overpass.	
Incident #: 560530 Event #: 21T119060	Last Updated: 12/20/2022 10:43 AM

TRIPCHECK UPDATES

- Using INRIX travel time to **calculate actual delay** through a work zone vs. our standard impacts (e.g., less than 20 minutes, two hours or greater, etc.).
- Current Travel Delay - **example to the left** is seven minutes.
- The goal is to **add this to more construction events** in the upcoming year as it is currently only included on a few.



2022 ANALYTICS

TripCheck daily usage over the year has noticeable spikes during weather events. This metric helps our ITS Application Development and Infrastructure teams ensure TripCheck has the resources required for speedy delivery of traveler information.

SESSIONS

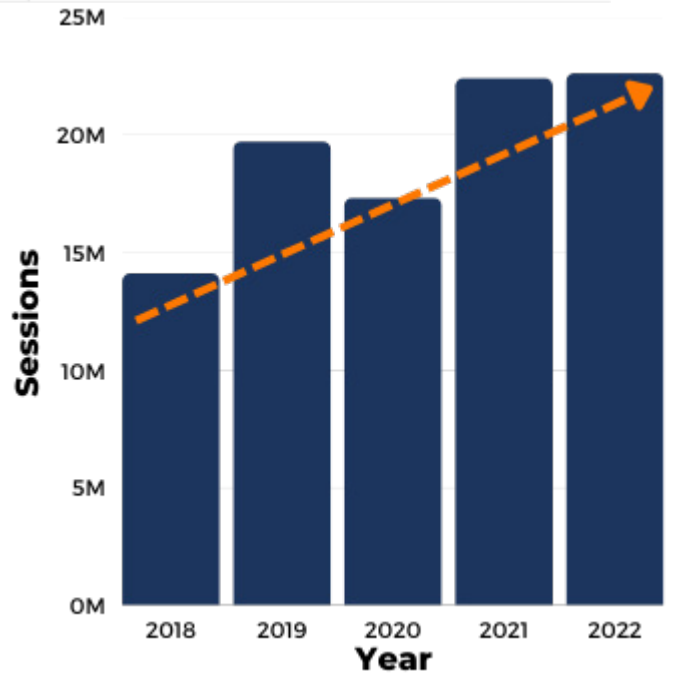


TRIPCHECK USAGE SHOWS STEADY GROWTH

Extreme weather events cause TripCheck usage spikes, but over all TripCheck is **reaching more travelers** year-after-year.

TRIPCHECK BOUNCE RATE AT 32% FOR 2022

Bounce rate is the percent of people who land on a page and leave without performing an action. **32%** means people intended their visit staying an average of **three minutes per session**.



22.6M

TripCheck Sessions

6.3M

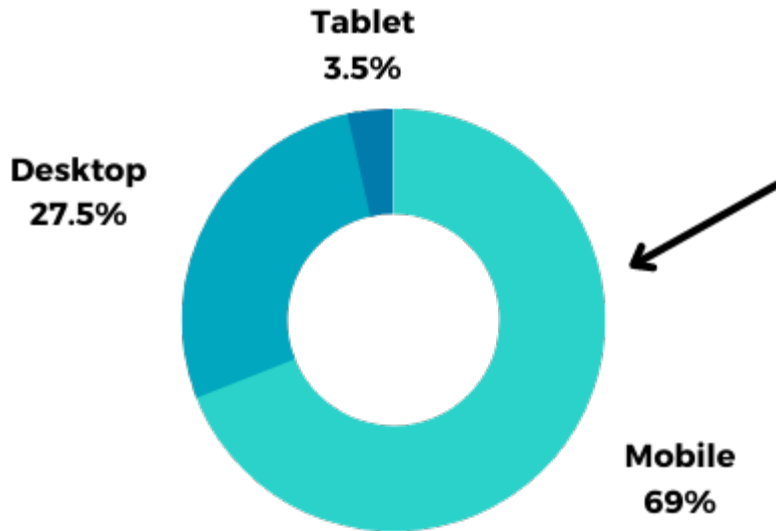
Users

837

TLE Events



2022 ANALYTICS



SESSIONS BY DEVICE

TripCheck is being **used more by visitors with mobile devices** than other devices combined at 69% (see graph to left). As mobile devices become more utilized, web apps like TripCheck and TLE will need to prioritize mobile first concepts.

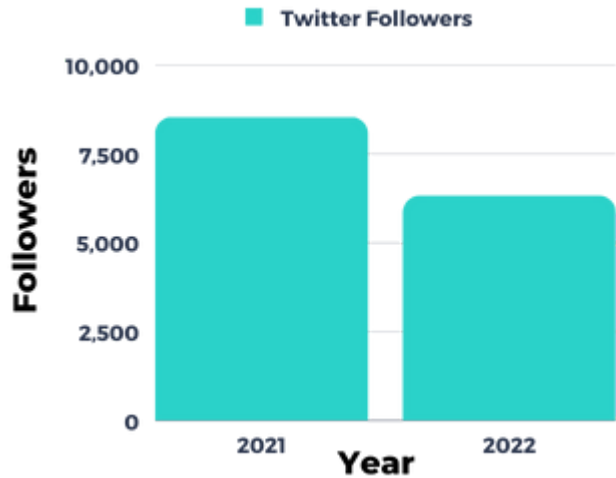
8,610,845



Twitter Impressions

TRIPCHECK ON TWITTER

TripCheck uses Twitter to provide up to the minute information to its followers on specified sections of highway in Oregon. Recent changes at Twitter have removed bot accounts leading to a **decrease in followers**.



IMPRESSIONS VS FOLLOWERS

Impressions tell us **how many eyes saw our tweets** on traffic incidents. Followers are the number of people subscribed to our feeds on Twitter.

69%

Sessions on Mobile

1,174

TripCheck Emails

349K

511 Calls

TRIPCHECK API

ACCESSING TRAVELER INFORMATION DATA

The TripCheck API is designed to **provide developers with access to the data** available on ODOT's traveler information website, including incidents, cameras, variable message signs, weather stations, traffic detectors and more.

The API also gives you access to operations **data from ODOT dispatch centers** across Oregon.



[VISIT THE API PORTAL](#)



164
Subscriptions

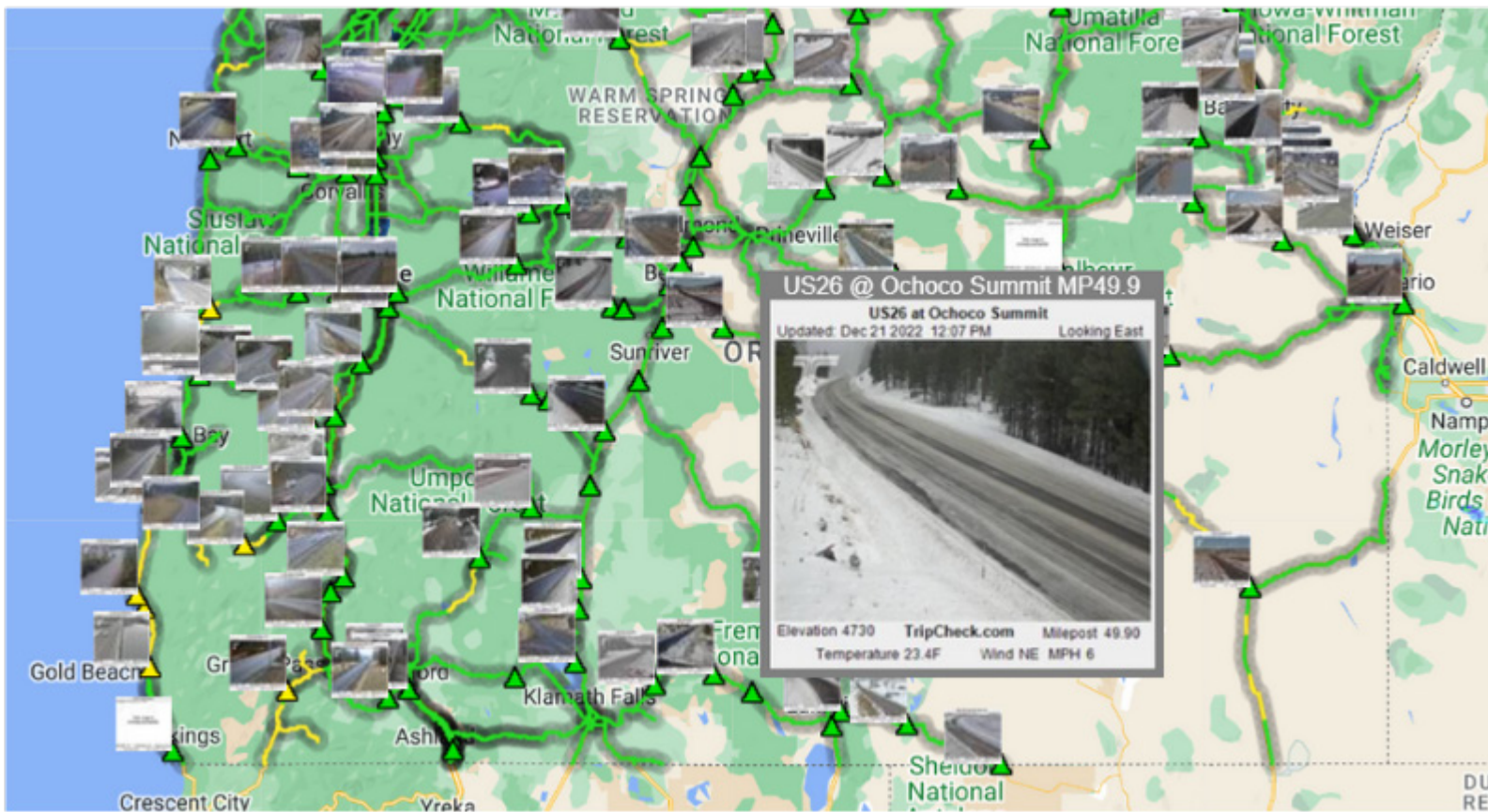
19M
Total Request to API

221
Users

PIKALERT

PikAlert uses ODOT RWIS as well as other weather sensors for real time data. PikAlert then develops a weather forecast using several weather models.

Segment specific (1 mile or 3 mile) road forecasts are made available for the next six hours, 6-24 hours and 24-72 hours.



FORECASTS SEGMENT SPECIFIC CONDITIONS.



RECOMMENDS TREATMENT OPTIONS.



ALERTS ON ROAD & WEATHER CONDITIONS.



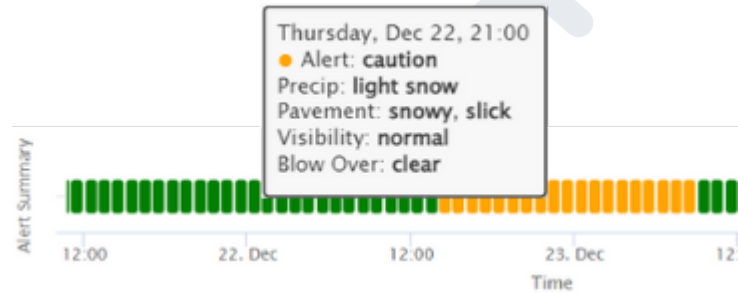
LOCAL CONDITIONS REPORTED IN REAL-TIME.

PIKALERT FEATURES



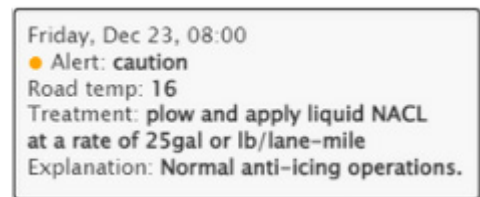
ALERT SUMMARY

A quick temporal view of where activity is expected.



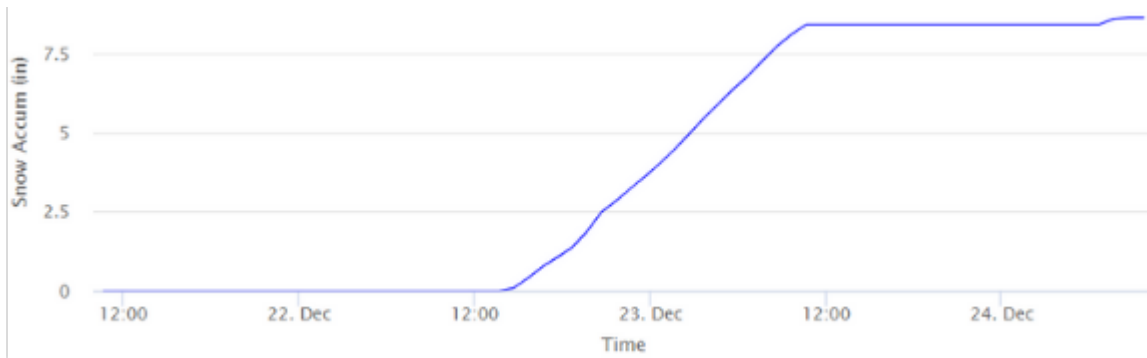
RECOMMENDED TREATMENTS

Detailed treatment recommendations at the time they should be applied.



SNOW ACCUMULATION

A graph showing expectation of snow accumulation over time.



SNOW RATE

A graph showing inches of snow per hour over time.

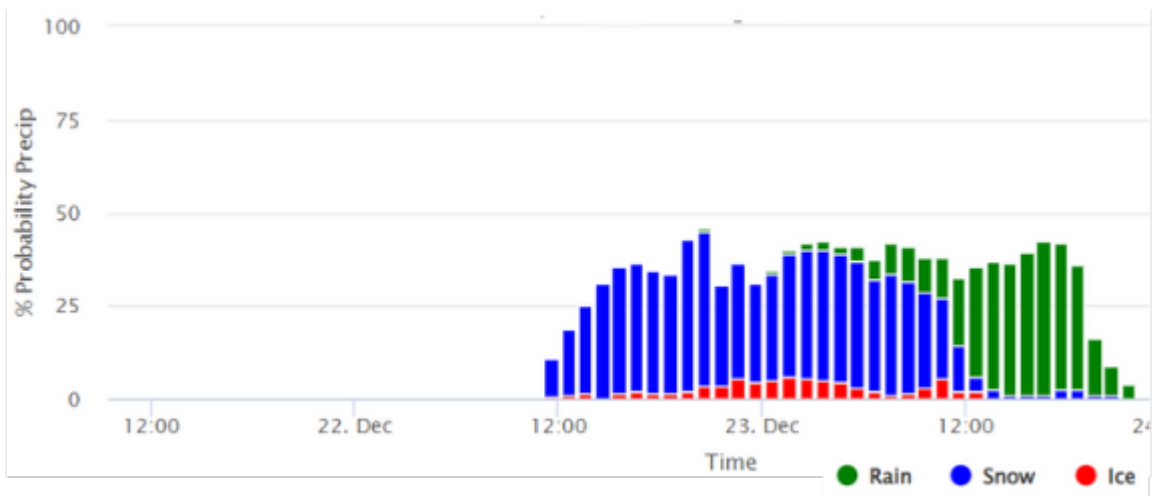


PIKALERT FEATURES



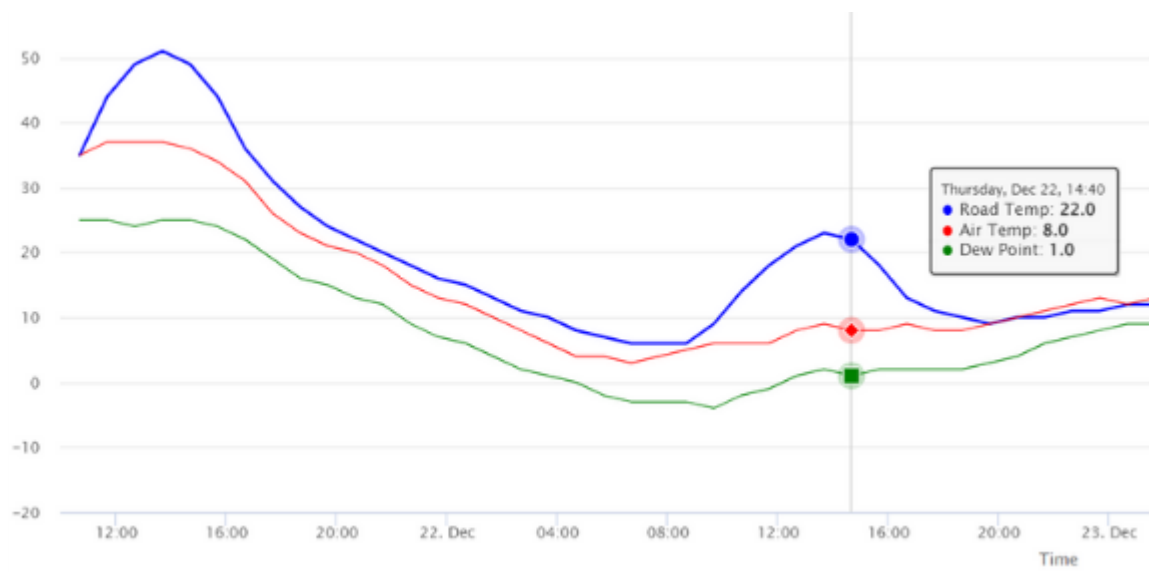
PERCENT PROBABILITY PRECIPITATION

A bar chart showing the probability of rain, snow and ice by the hour.



TEMPERATURE

A comparative line chart of road temp., air temp. and dew point.

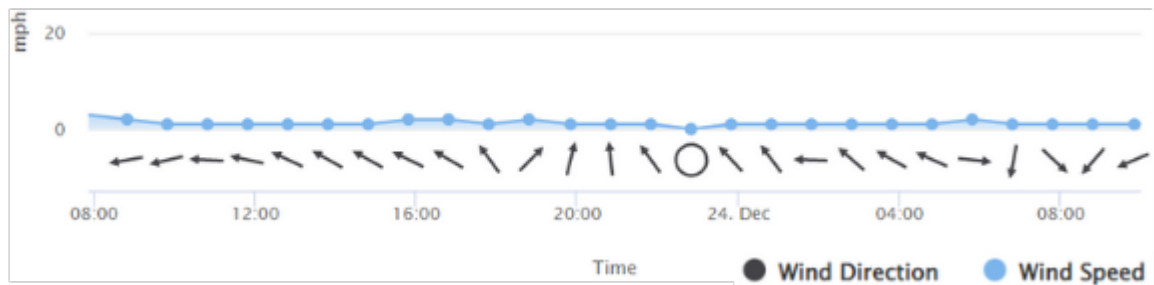


PIKALERT FEATURES



WIND SPEED & DIRECTION

The chart shows wind speed and direction predictions over time.



LOCAL OBSERVATIONS

Local RWIS stations pick up additional information that is available in the local observations section.

Model	
Air Temp	21 deg F
Dewpoint Temp	17 deg F
Barometric Pressure	930 mb (27.47 inch Hg)
Radar	
Composite Reflectivity	-99.00 dBZ
Dual Pol Digital Hybrid Reflectivity	missing
Dual Pol Hybrid Hydrometer Classif...	missing
RWIS	
Mean Air Temp	23 deg F
Mean Barometric Pressure	missing
Mean Dewpoint Temp	20 deg F
Mean Prevailing Visibility	1 mi
Mean Prevailing Relative Humidity	86%
Mean Surface Temp	26 deg F
Mean Wind Direction	missing
Mean Wind Speed	0 mph
Mean Wind Gust	0 mph

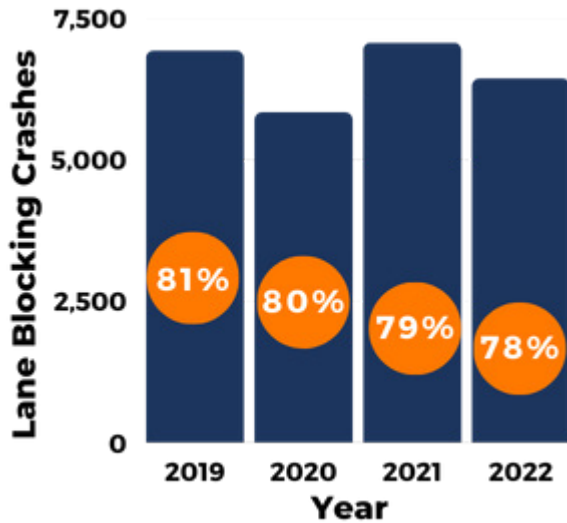


Traffic Incident Management

“Keep traffic moving & restore traffic flow by clearing incidents safely, quickly & efficiently.”

The Traffic Incident Management team’s goal is to promote **‘safe, quick clearance’** of incidents through implementation of TIM strategies, delivery of training, and collaboration with other first response resources.

2022 ANALYTICS



Total Event Count:

111,584

Of those events,

23.3%

were crashes.

TOTAL LANE BLOCKING CRASHES

One of ODOT's key performance measures is the percentage of lane blocking crashes cleared in 90 minutes or less. The graphic above illustrates the last four years' trend.



71

Crashes
Everyday

22

Fatal Crashes
Every Month

8,032

TIM Responders
Trained to Date



MOTHER NATURE TESTS OREGON'S FIRST RESPONDERS

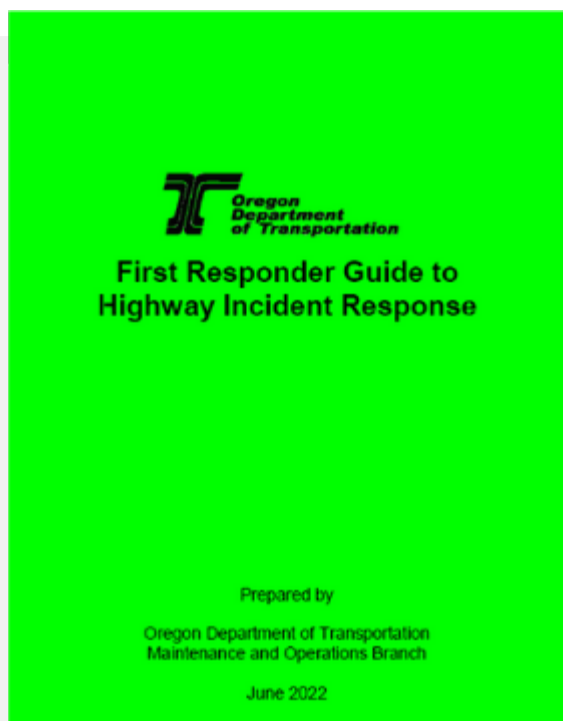
ODOT responded to a **large range of events** this last year--everything from multi vehicle crashes to explosions of commercial facilities effecting right of way. ODOT exercised our TIM principles with other public safety partners working on **communication, collaboration and cooperation**. Two major highway incidents worthy of noting:

I-84 had a **major crash over Deadman Pass** during a winter event that resulted in a long-term closure. There were approximately **35 vehicles** involved.

Utilizing our agency's new fleet tracking software, ODOT was able to ascertain the location and the activities of our equipment. This was a plus when inquiries came in regarding where we had been performing winter maintenance operations and salt/rock applications.

I-5 also fell victim to a **major crash south of Albany** as a result of heavy fog. This crash involved approximately **60 vehicles** and 20 commercial vehicles. This heavily involved scene had multiple secondary crashes.





ODOT FIRST RESPONDER GUIDE TO HIGHWAY INCIDENT RESPONSE



Prior to responding to a highway incident, employees must receive proper training. Employees must stay within the level of the training they have received and be familiar with the contents of this guide and the Emergency Response Guide (ERG).

[Register for Oregon TIM Responder Training here.](#)

ODOT'S INCIDENT RESPONSE MISSION

-  Ensure the safety of emergency responders and the traveling public.
-  Ensure the highway is not blocked or restricted any longer than is absolutely necessary.
-  Provide the traveling public timely information so they can make informed decisions.
-  Protect the environment.



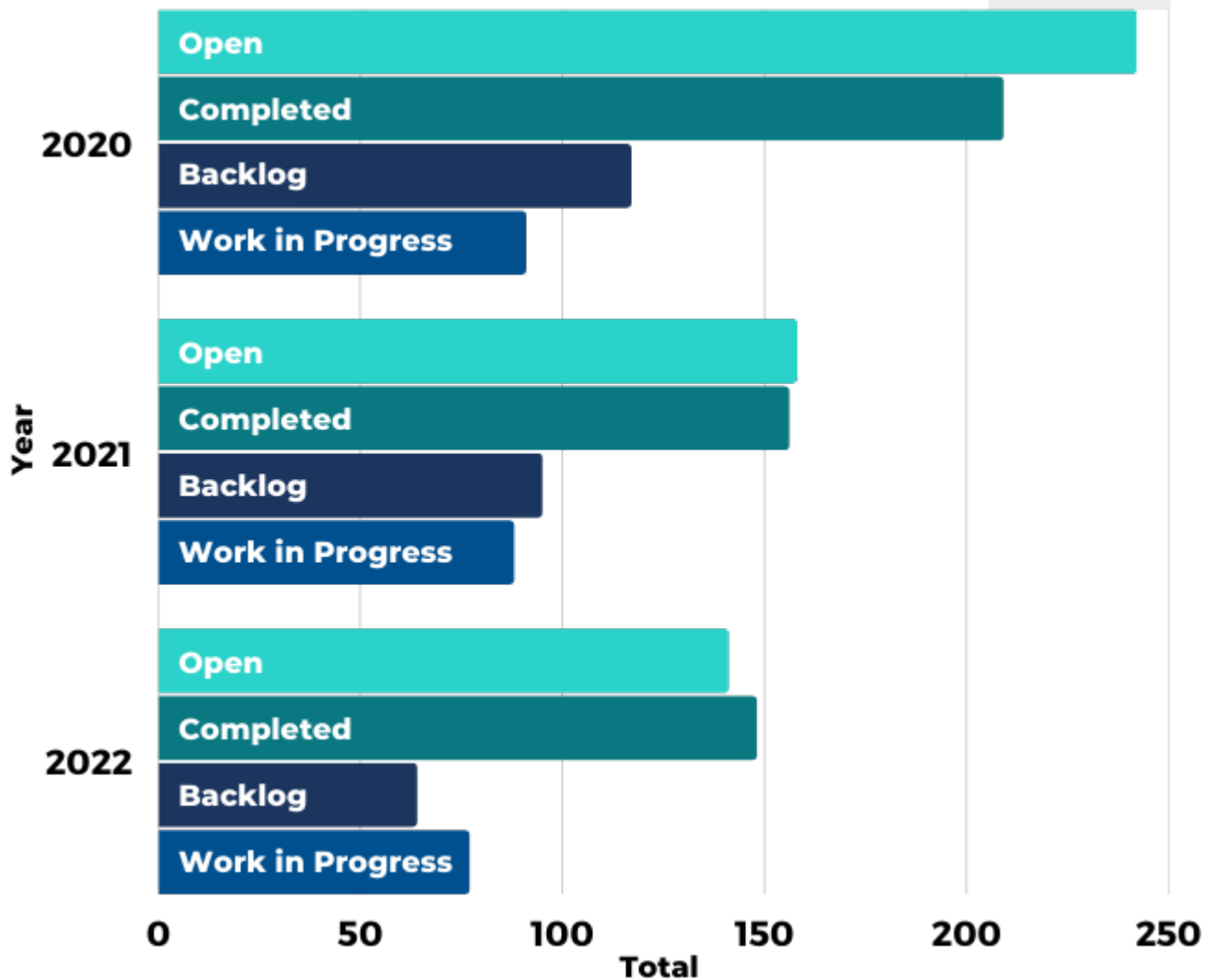
ITS Application Support

“Monitor, process, and take action 24/7, 365”

Behind all of our roadside equipment the ITS Application Support Team monitors and maintains these systems and associated hardware to keep them in peak operating condition.

ITS APPLICATION SUPPORT

WORK QUEUE SUMMARY



Behind all of our roadside equipment are approximately 44 software systems that monitor road conditions, process data and take action 24/7, 365 days per year.

2022 ACCOMPLISHMENTS

PROJECTS AND APPLICATION SUPPORT

There is definitely a long list of accomplishments for this group over the last year, but there are **a few noteworthy items** to highlight.

11 PROJECTS COMPLETED



- RWIS Modernization.
- INRIX Work Zone Delay.
- Road Weather Forecasting Tool (PikAlert).
- Trimet Transit Signal Priority Implementation.
- TOCS DB & App Server Migration.
- 2022 Tocs Maintenance.
- WebView 2.
- Statewide Video System Upgrade.
- MicroMain Replacement Analysis.
- Region 1 SQL Server Replacements.
- Regions 2 & 3 Video System Server Replacement.

133 RFWs

370 MIRCROMAIN TICKETS



- City of Gresham Bluetooth data.
- HAT performance improvement.
- Update traffic video metafile conv.
- Keyvault upgraded to .NET 6.
- Migrated HAR.
- MQM message priority change.
- TPC removed ramp truck restrictions.
- .NET framework remediation.
- Migrated 13 websites.
- TOCS performance hot fixes.
- Decommissioned TTIP.
- Monthly server OS patches.

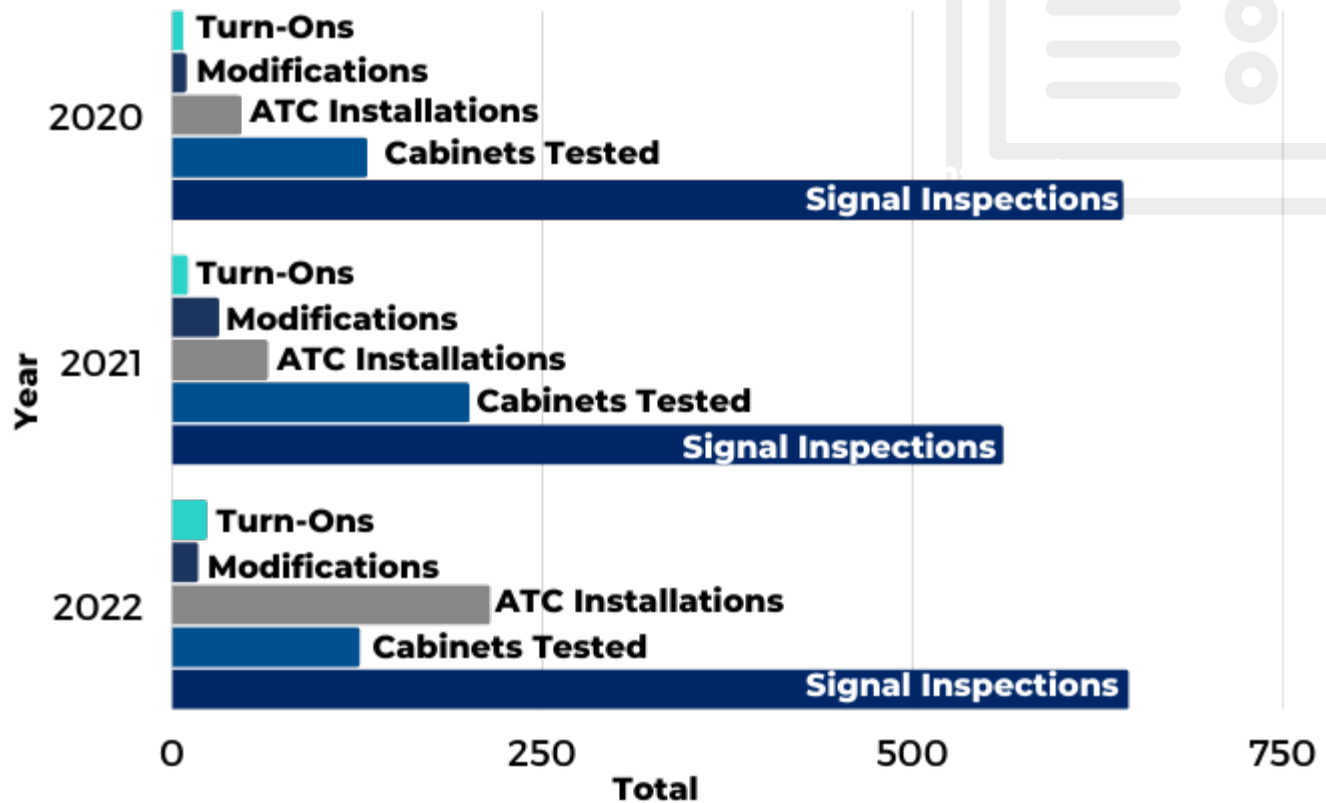


Traffic Signal Services Unit

“Manage traffic in a real-time effort to reduce congestion and provide reliable travel times”

The Traffic Systems Services Unit (TSSU) works with the electrical, traffic, and signal timing staff to ensure new signals and cabinets are tested properly, installed to code, and existing systems are inspected annually.

2022 ACCOMPLISHMENTS



- Turn-ons:** Commissioning a newly constructed signal, including cabinet replacements.
- Modifications:** Any change to intersection that includes the cabinet.
- ATC Installations:** Upgrading any existing controller to an ATC controller.
- Cabinets Tested:** Testing of new signal cabinets in environmental chamber before install.
- Signal Inspections:** Annual inspection of existing signals.

STOREROOM - In the post pandemic world, equipment and parts are more difficult to get in a timely manner. To combat this, TSSU has expanded their storeroom inventory to hold equipment for signals, CCD, and ITS. The goal is to ensure that lead times are cut from months to days. Some notable equipment that can now be ordered directly from the storeroom are:

- Traffic signal cabinets.
- ATCs.
- Detection equipment.
- Network radio equipment.
- ITS and signal locks and cores.

VANDALISM & ILLEGAL CAMPS



Region 1 has been challenged with graffiti and illegal camps. Before and after pictures show the results of **graffiti and its clean up** on Variable Advisory Speed signs on I-5 NB at Albert.

After repeated damage to the electrical service by an illegal camp, the **power company decided to decommission the service** in January of 2022. This system serviced a camera and radar that also had to be decommissioned.



ITS Field Maintenance

“Maintaining, troubleshooting, & repairing our growing inventory of ITS equipment.”

Our ITS Field Maintenance team consists of technicians in each region that are responsible for keeping our equipment in good, working condition. They also support network communications for traffic signals and provide construction support for installation of new ITS equipment, and support ITS technologies used for weigh station operations.

2022 ANALYTICS

ITS COUNT BY DEVICE TYPE

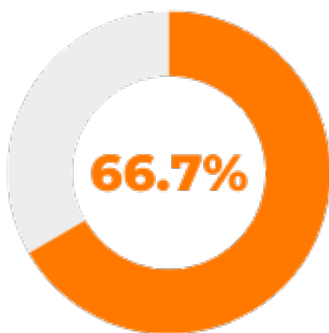
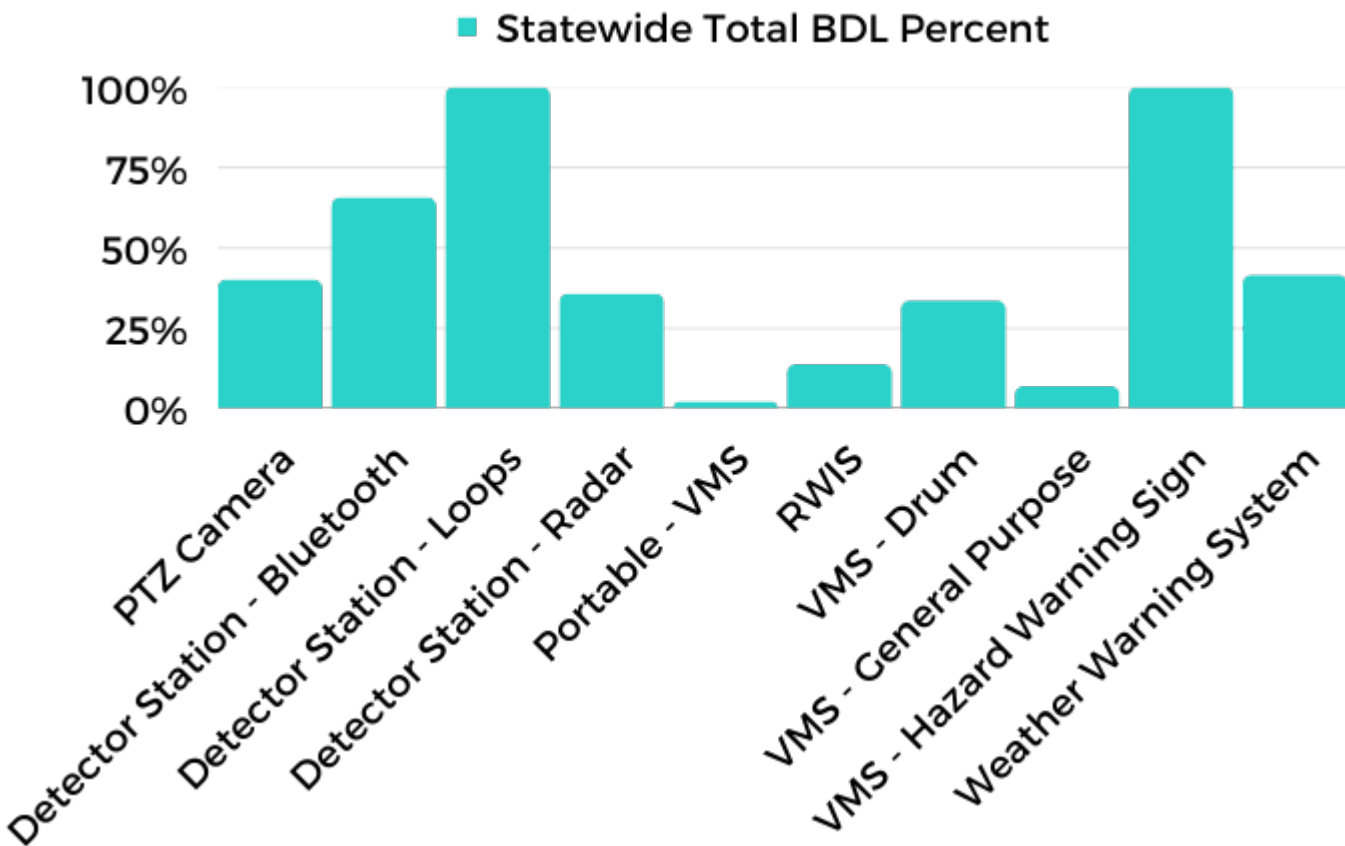
A more comprehensive graph displaying the number of owned ITS devices within each class. There are 1,856 ITS devices total. These numbers were used to calculate the percentage of assets going beyond design life.

600**CAMERAS****153****RAMP METER****226****DETECTOR STATIONS****5****RAMP GATES****1****HIGHWAY
ADVISORY RADIOS****186****RWIS****174****PORTABLE SWST/VMS****470****VMS****17****WEATHER
WARNING SYSTEMS**

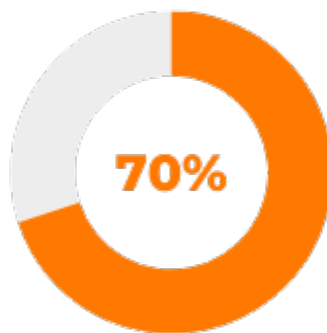
ASSETS BEYOND DESIGN LIFE

REGION SNAPSHOT

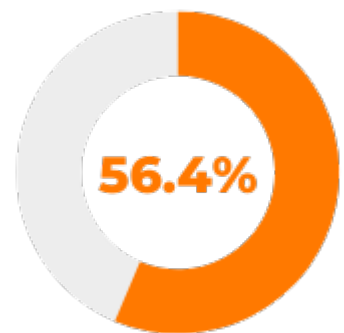
While much of our ITS equipment inventory is fairly new, some of the early ITS equipment is reaching the end of its design life. The Asset Beyond Design Life (BDL) graph shows a snapshot of the current percentage at end of life for each device.



**Region 1
Weather Warning System**



**Region 2
Detector Stations Bluetooth**



**Region 1
PTZ Cameras**

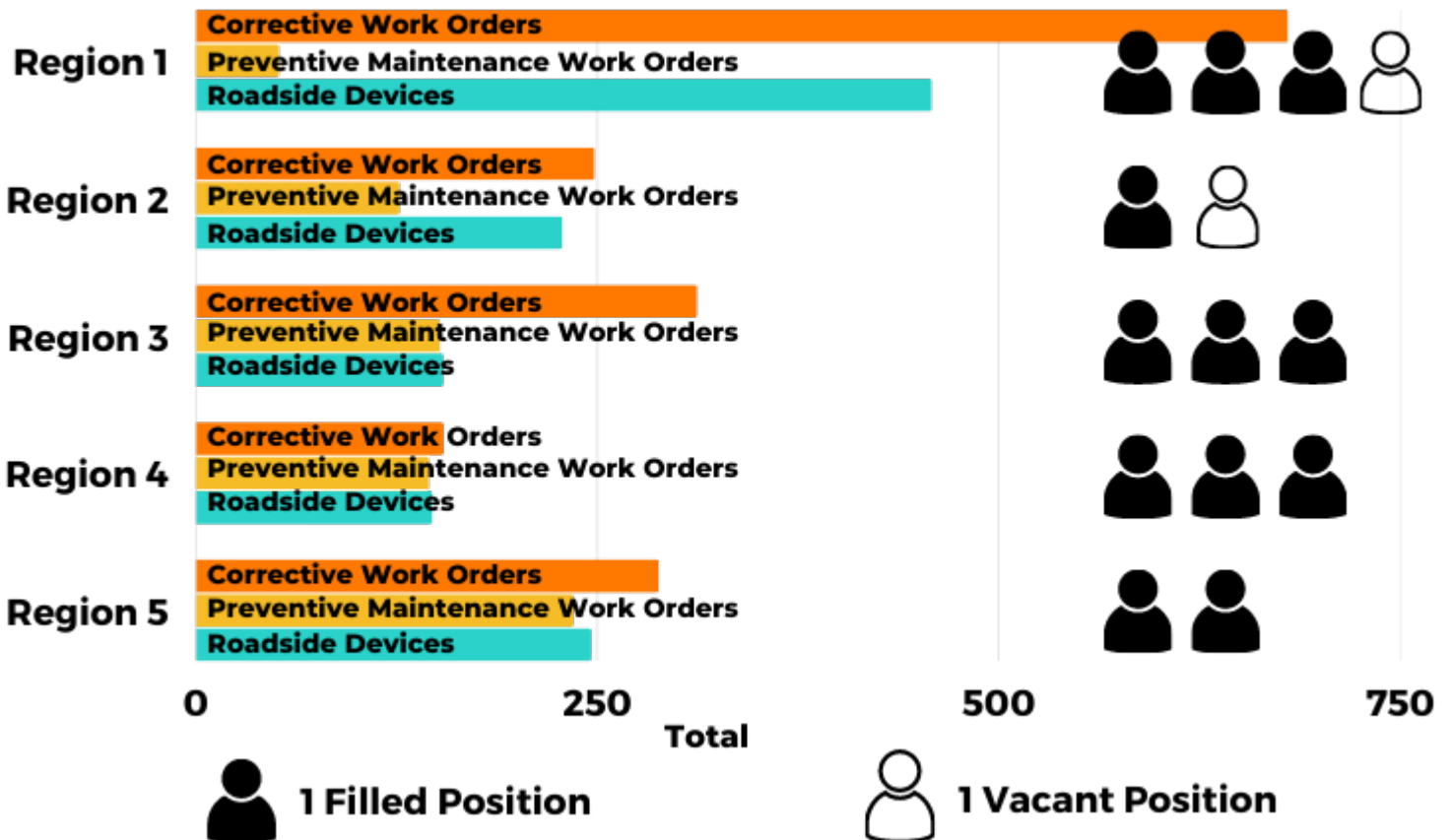
2022 ANALYTICS

CORRECTIVE AND PREVENTATIVE MAINTENANCE WORK ORDERS COMPLETED BY REGION

Numerous retirements and vacancies, combined with a high level of construction support, and the support of Commerce & Compliance, impacted the ability to keep up with preventive maintenance on ITS equipment.

Preventive maintenance (PM) is done to active, roadside equipment only. Of the 458 devices in R1, 52 had PMs completed, but 680 corrective work orders were also completed. Corrective work is priority; however, PMs should also be priority as they prevent corrective work. R1 completed a total of 732 work orders with just three support technicians.

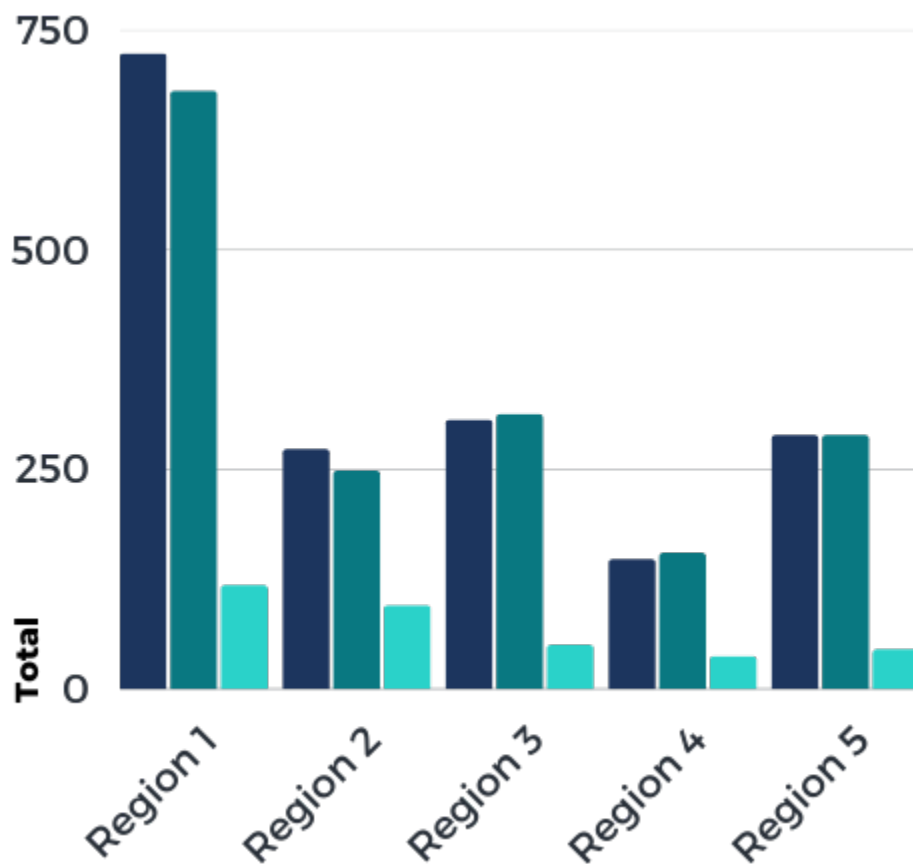
Work Orders Completed by Type Per Region



2022 ANALYTICS

CORRECTIVE MAINTENANCE WORK ORDER DETAIL

The graph below shows the number of work orders created and completed, along with the running backlog for 2022, broken down by region. This is corrective only work; this does not include preventive maintenance work orders.



1,736

Work Orders Created
(Statewide Total)

1,682

Work Completed
(Statewide Total)

345

Running Backlog
(Statewide Total)

1,856

Total General
ITS Devices Statewide

ITS devices are the backbone of many System Operations strategies

0.6%

Percent Increase in Total ITS Devices from Previous Year

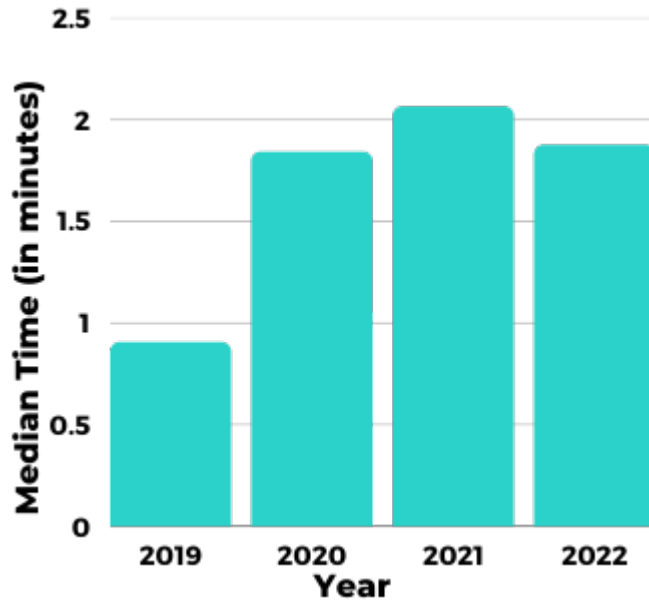


TOC Operations

“Supporting ODOT’s mission by providing a single, regional point of contact for 24/7 monitoring, coordination, and services.”

ODOT’s four transportation operation centers play a vital role in keeping both ODOT staff and travelers safe. The Transportation Operation Centers (TOC) help our responders be more effective and safer in the field. Each center offers communication services and coordinates response resources with other organizations to keep roadways safe, clear, and travelers informed about incidents and road conditions.

2022 ANALYTICS

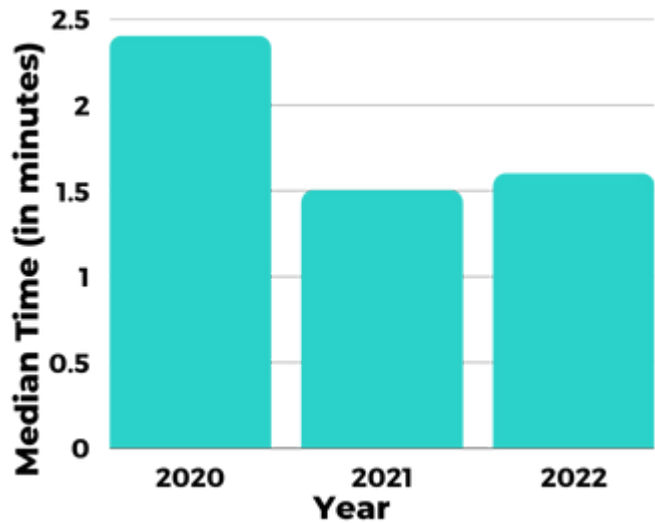


RESPONSE PLAN SYSTEM

Public notification of events using Response Plan System (RPS). Median time (in minutes) from incident creation to activating Variable Message Sign (VMS) Plan. The chart below reflects the average time by all four TOCs.

PUBLIC NOTIFICATION OF EVENTS BY TOC

Median time (in minutes) from entry of incident to posting traveler information. The chart above reflects the average time by all four TOCs.

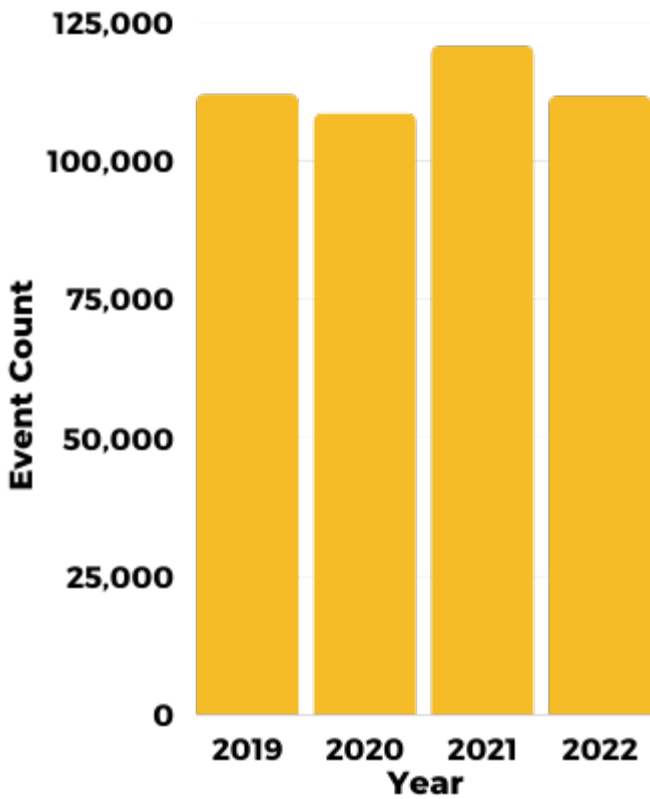


It is federal rule to provide traveler information using variable message signs, the internet, 511, and the media within 10 minutes of event verification.

2022 ANALYTICS

EVENT COUNT BY TOC

In 2022 there were 111,584 events accounted for statewide. Each event is logged into TOCS with an event type to help determine incident severity and protocol.



EVENT TYPE CATEGORIES

- Disabled/Abandoned Vehicles
- Maintenance & Operations
- Landslides & Rockfalls
- Hazardous Debris
- Equipment Repair
- Severe Weather
- Fatal Crashes
- Construction
- Crashes
- Fire
- Other

26K

Total Crashes

267

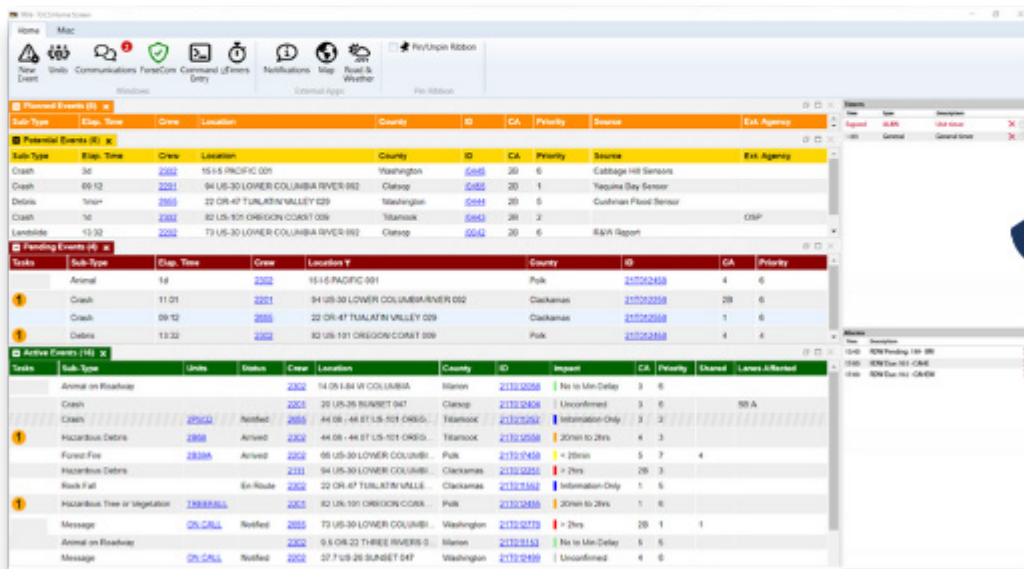
Total Fatal Crashes

59K

Shared Events with Partnering Agencies

TOCS HOME SCREEN GETS UPDATED

The Transportation Operations Center System (TOCS) is the primary system used by the Oregon Department of Transportation to record, manage, and respond to incidents occurring on the state highway network.



MODERNIZATION & REDESIGN

Since TOCS was first deployed in 2009, it has undergone significant changes and additions to the suite of functions available to dispatchers. The primary interface of TOCS is the home screen. The goals of this project are to **modernize** the underlying architecture of the home screen, **redesign** the user interface, and allow more extensive customization and **personalization** that is tailored to the dispatcher’s needs. The expected release is mid-2023.

Signs & Signals

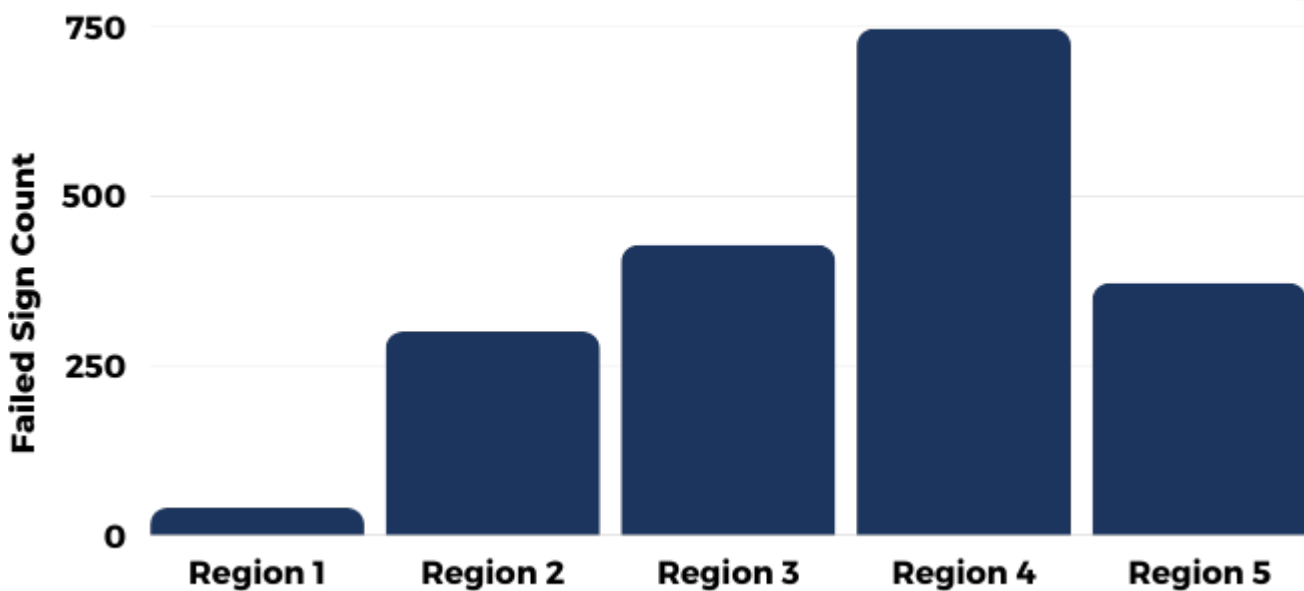


“Signs are the largest communication device to the traveling public, keeping them in tip-top shape is vital.”

Modernized and well-managed traffic signals are essential to a high-functioning transportation system. Some traffic assets such as traffic signals use outdated technologies that are costly to maintain and contribute to poor signal timing, accounting for a significant amount of delay and user frustration.

SIGN RETRO-REFLECTIVITY LIFE-CYCLE

ODOT's inventory of signs, like any asset, has a life cycle. As signs are the largest communication device to the traveling public, keeping them in tip-top shape is vital. The graph below illustrates the number of failed signs by region.



At a quick glance, Region 4 needs resources to keep up with the larger number of failing signs. Nearly 3% of the signs installed in District 9 have failed with 40% of those failed being major standard/custom signs (i.e. over 20 square feet of sign surface).

179K

Total Inventory
Statewide

1,884

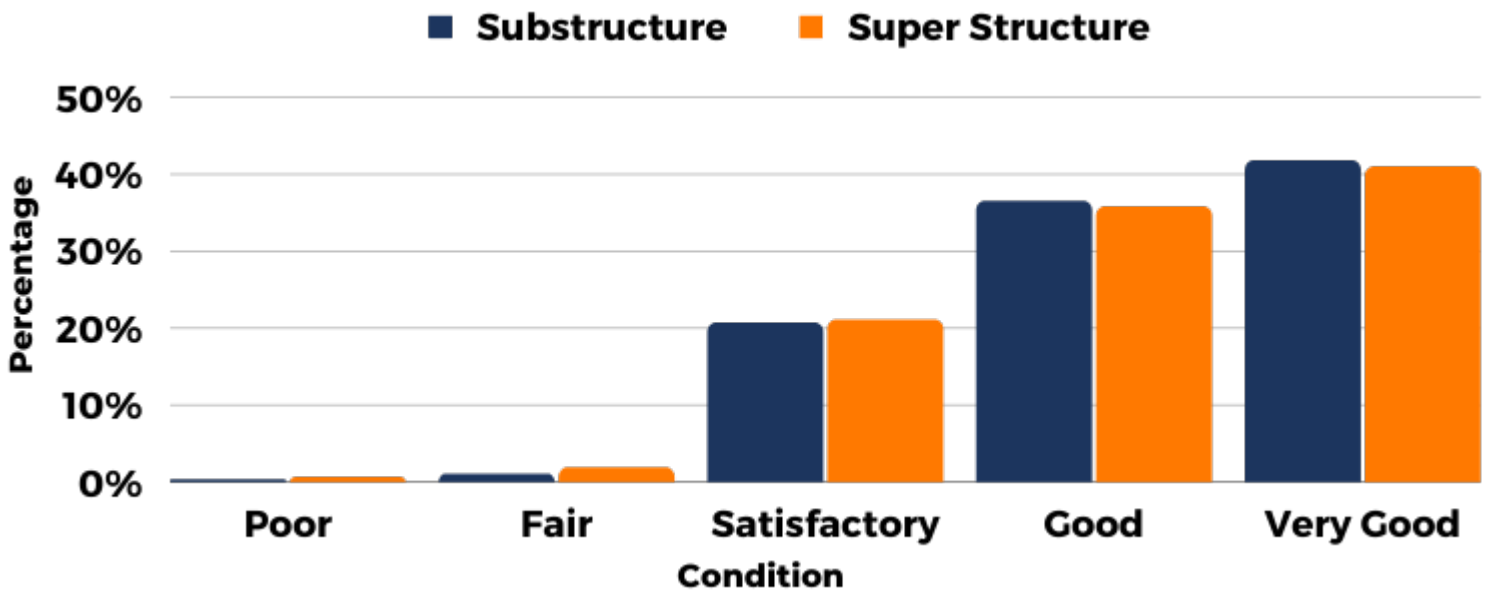
Total Failed
Statewide

1%

Statewide
Percent Failure

STATEWIDE MAJOR TRAFFIC SUBSTRUCTURE / SUPER STRUCTURE CONDITION RATINGS

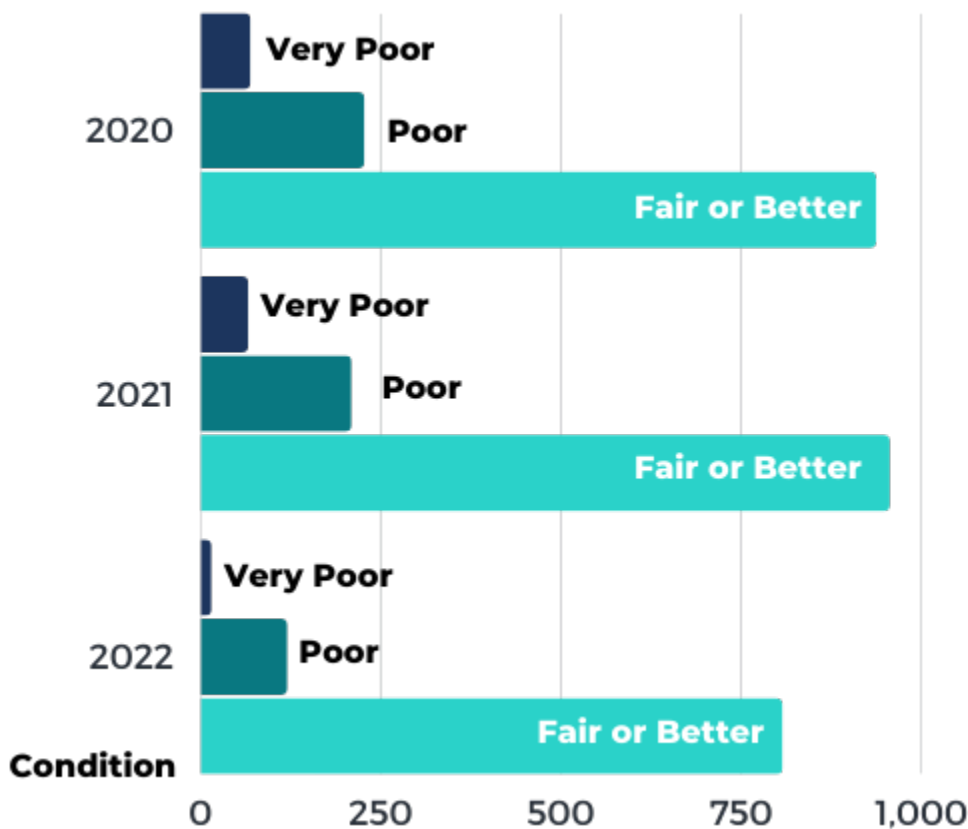
This data shows the condition ratings for major traffic structures (large cantilever and sign bridge supports for signs and VMS) based on inspection by the region bridge inspector. Substructure simply means under the ground, whereas super structure represents everything above the substructure.



2022 ANALYTICS

STATEWIDE SIGNAL CONDITION RATING

Of the 952 ODOT owned and maintained signals in 2022, this graphic captures the number of assets that are in very poor, poor, and fair or better condition.



1,736

Work Orders Created
(Statewide Total)

1,682

Work Completed
(Statewide Total)

345

Running Backlog
(Statewide Total)

778

Total ATCs Installed

83%

Total Installed Statewide

83% of all ODOT owned and maintained signals have had Advanced Transportation Controllers (ATC) installed, a 20% increase from 2021.

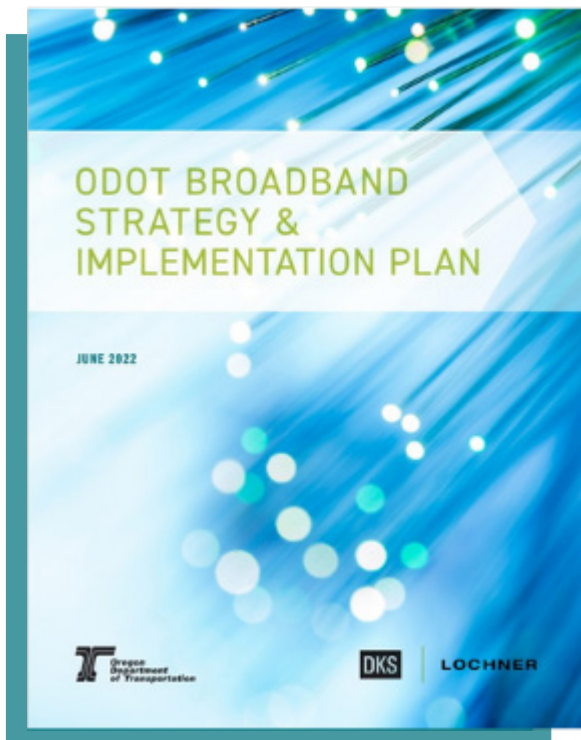
Broadband



“Broadband technology is a key infrastructure building block for a modern transportation system.”

ODOT uses broadband to achieve the agency’s multimodal safety, operations, and reliability goals. There is an increased understanding of broadband’s benefits including reducing trips, telework, and providing for the increased use of cloud-based applications.

ODOT BROADBAND STRATEGY & IMPLEMENTATION PLAN



The modern transportation system priority includes an action to develop and implement an integrated broadband strategy in 2022. Broadband technology is a key infrastructure building block for a modern transportation system. The plan aims to prepare ODOT for future transportation needs, and describes the goals and actions needed for ODOT's integrated broadband strategy.

[Find the plan on the System Operations & ITS page at Oregon.gov.](#)



Draft OARs to Implement Bill.



Develop Shared Trench Criteria & Broadband Opportunity Notification System.



Working on STIP Project Accommodations, Process Manuals & Guidance Updates to Include Broadband.



PRIORITIZATION PLANNING

Create a Broadband Prioritization Plan to guide investments in fiber optics, focusing on safety and operations. The plan will identify priorities for:

- Safety and ATM Corridors.
- ITS and Signal Connectivity.
- ODOT Network and Office Connectivity Needs.
- Motor Carrier.
- Interstate and Corridors with High Traffic Volumes.

PARTNERSHIP OPPORTUNITIES



Due to the **high construction costs of fiber optics**, the 2022 ODOT Broadband Strategy and Implementation Plan identified partnerships as a key to expansion of ODOT fiber infrastructure. ODOT has:

- **Developed relationships** with the private sector and participates in broadband industry organizations to identify project opportunities.
- **Expanded relationships** with public sector entities on broadband projects.
- Worked with the ODOT Innovative Partnership Program to develop templates and workflows to facilitate partnership projects using **alternative procurement and financing**.

BROADBAND PROJECTS

ODOT has a variety of ways it can expand ODOT fiber optic infrastructure. Current projects include:

01

BEND TO LAPINE

Private sector collaborative effort to build over 30 miles of fiber from Bend to La Pine.

02

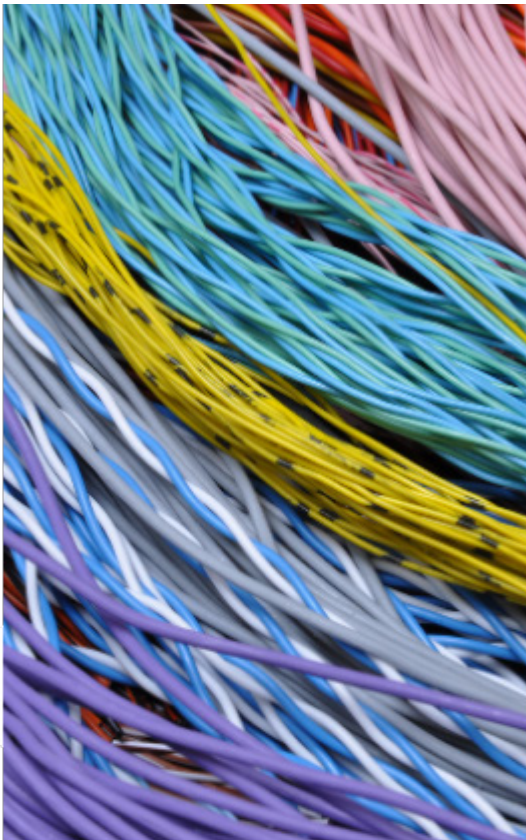
I-5 SALEM TO JEFFERSON

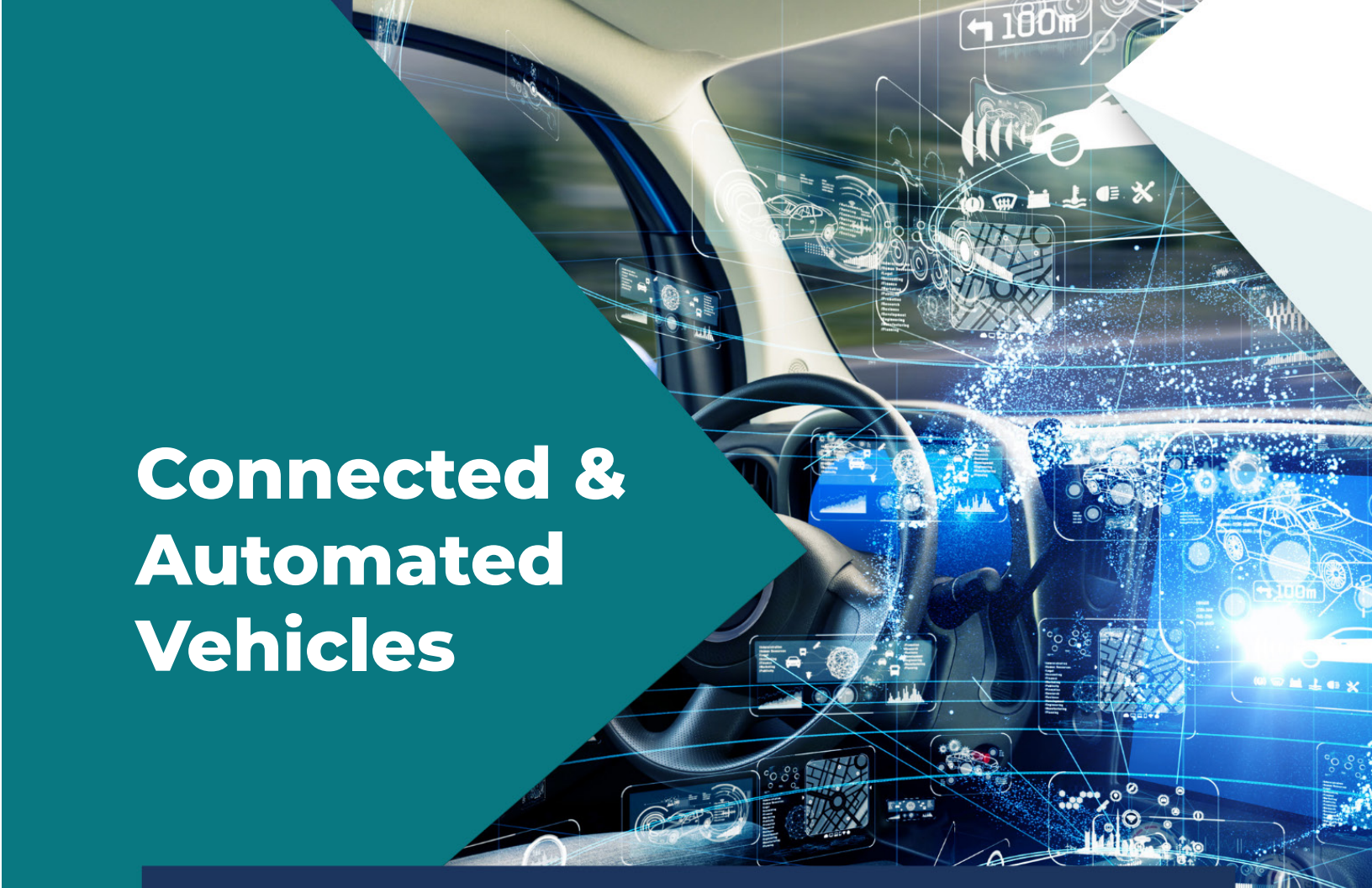
Added funding to a STIP project to extend fiber along I-5 from South Salem to North Jefferson.

03

HIGHWAY 99W TIGARD

Discovered an unused conduit system in Highway 99W in Tigard and working to take ownership of it.





Connected & Automated Vehicles

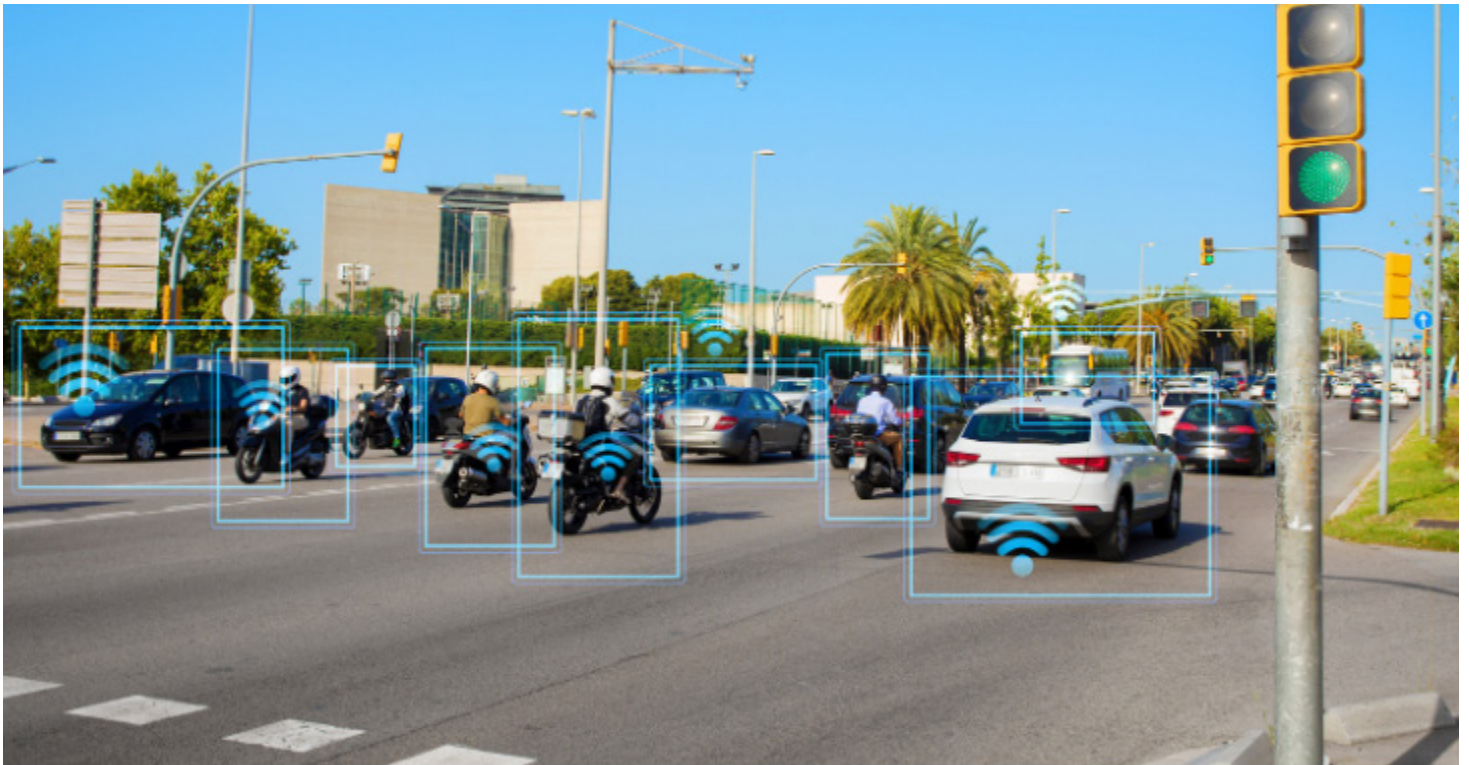
“Preparing ODOT for a connected future.”

The adoption of connected and automated technologies into vehicles provides the potential to revolutionize transportation. ODOT’s work related to Connected and Automated Vehicles (CAV) technology is capitalizing on opportunities that exist today while also preparing us for the future.

CVE RFP IN NEGOTIATIONS WITH POTENTIAL VENDOR

The resulting system will be a cloud-based, data aggregation platform that will gather data from vehicles and have the ability to deliver information

back to those same vehicles. In 2022, an RFP was released and negotiations are currently underway to select a vendor.



GATHER AND DELIVER DATA TO VEHICLES.



OPERATIONS AND SAFETY APPLICATIONS.



IMPLEMENT ROAD USAGE CHARGING.



5.9 GHZ VEHICLE INFRASTRUCTURE.