



Oregon  
Department  
of Transportation

# Transportation System Operations

# 2023

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# Annual REPORT

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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.

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**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 supports ITS Project Delivery.



## ITS PROJECTS AT A GLANCE

6

COMPLETED DESIGN

2

RENEWED PRICE  
AGREEMENTS

4

IN CONSTRUCTION

2

CONSTRUCTED

### K20166 I-5 OR138E: VMS & CURVE WARNING

Enhancing road safety, Project K20166 on I-5 OR138E in Region 3 introduces 5 Variable Message Signs for real-time traffic updates and 5 fixed cameras for continuous monitoring, ensuring a safer and smoother driving experience.





# ATCMTD PROJECT UPDATE

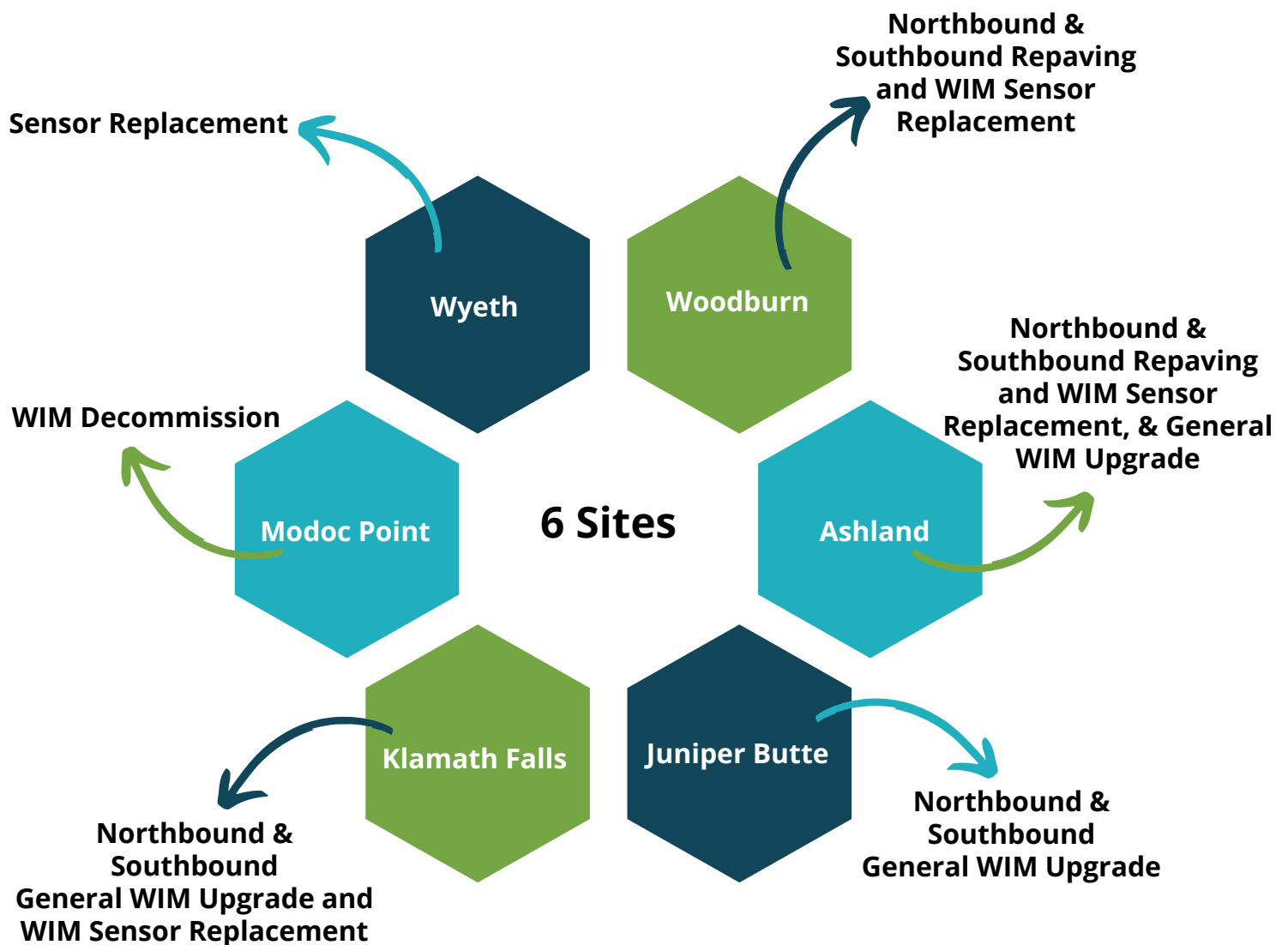
## K21500 CORNELIUS PASS ROAD ARTERIAL CORRIDOR MANAGEMENT

The K21500 Cornelius Pass Road project has streamlined traffic management in Region 1 through the installation of key infrastructure: two curve warning signs, a Road Weather Information System, two fixed cameras, and traffic sensors. These enhancements mirror the Medford OR 62 expressway's approach, employing variable message signs to guide drivers effectively.



## 5 SITES UPGRADED IN 2023

### WEIGH-IN-MOTION (WIM) PROJECTS

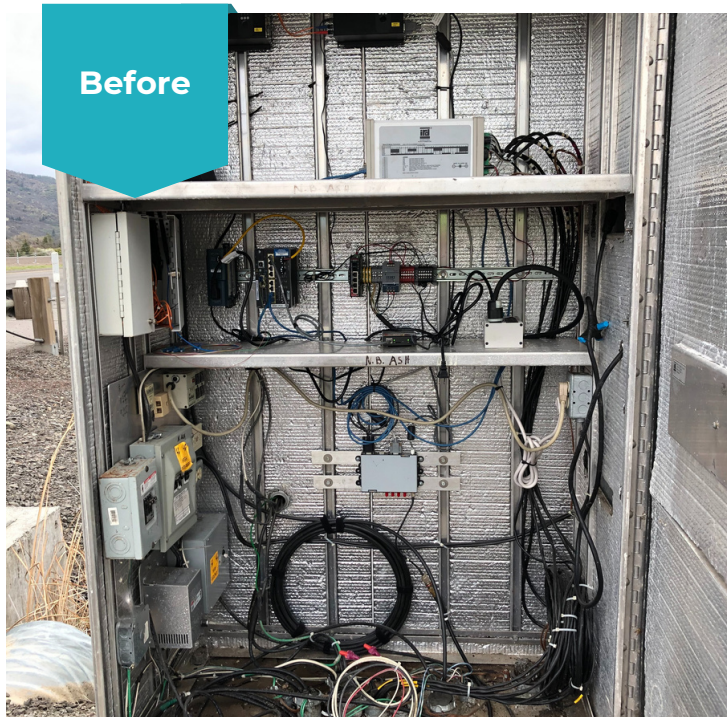


*Upgrade work includes cabinet replacements, transformer relocations, repairing damaged equipment, ITS standards compliance, fiber optic network installation, and roadside device transition from the Department of Administrative Services (DAS) to ITS network with additional security.*



## REPAVING & WIM SENSORS

### ASHLAND WIM PROJECT



Upgrades to weigh-in-motion sensors **promise enhanced accuracy and efficiency in monitoring vehicle weights** on roads. Coupled with strategic repaving efforts, these advancements **ensure smoother data collection and improved road infrastructure**, fostering safer and more reliable transportation systems for both commuters and cargo transportation.



## ITS / CCD WIM SYSTEM ACCOMPLISHMENTS



21

## SITES UPGRADED IN 2021

22

## SITES UPGRADED IN 2022

23

## SITES UPGRADED IN 2023

# Performance Measures

The background image is a collage of various data visualizations. At the top, there's a blue bar chart with the date '3/23' below it. To its right is a line graph titled 'PACE (MINUTES/MILES)' with a y-axis ranging from 0.00 to 15.00. Below the line graph is a horizontal bar chart with names 'John', 'Chris', 'Daniel', 'Grace', and 'Sophia' on the y-axis and numerical values on the x-axis. To the right of this is a vertical bar chart with values 11, 13, 6, 12, and 20. In the center, there's a pie chart with segments labeled 30%, 16%, and 20%. At the bottom, there's a bar chart titled 'Payments' with two orange bars labeled '\$601' and '\$747'.

"Optimizing operations & management through data driven decisions."

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

New reports are added regularly. A list of the report categories are available below.



**TRANSPORTATION  
OPERATIONS  
CENTERS**



**MOBILITY**



**TSMO ASSET &  
SUPPORT**



**TRAFFIC INCIDENT  
MANAGEMENT**



**ROAD & WEATHER**



**WORK  
MANAGEMENT**



**TRAVELER  
INFORMATION**

**VIEW REPORTS**







# Traveler Information

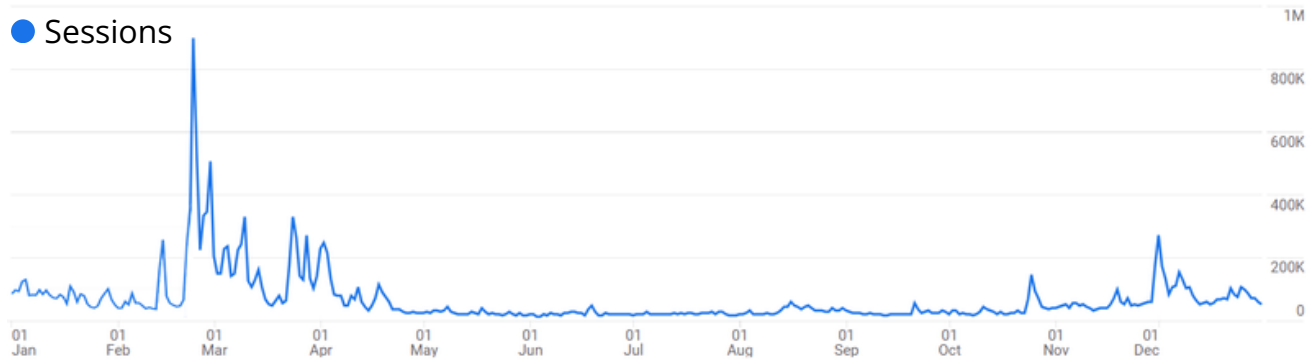
*"Providing travelers with useful endpoints to information that makes their journey economic and safe."*

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

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

## 2023 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.

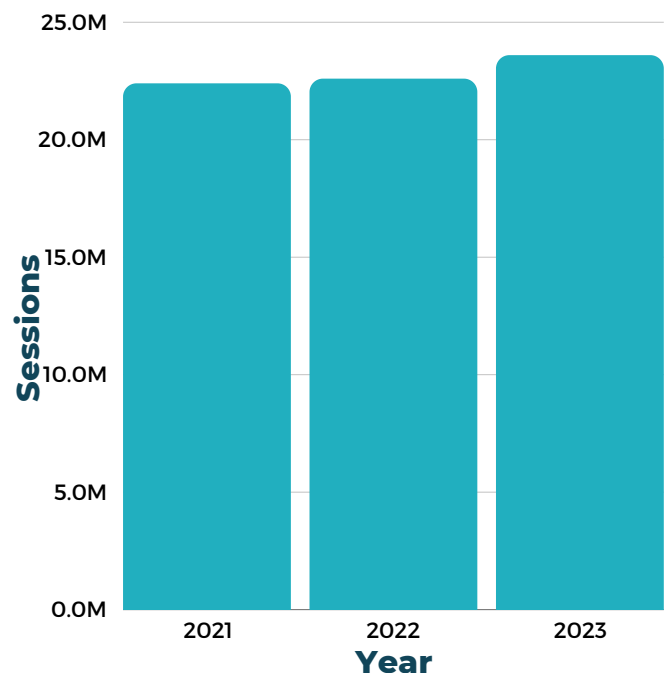


### TRIPCHECK USAGE SHOWS STEADY GROWTH

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

### TRIPHECK ANALYTICS UPGRADE IN 2023

Google Analytics upgraded to v4 which provided TripCheck with more accurate metrics and more dimensions to filter by, for better data driven decision making.



# 23.6M

TripCheck Sessions

# 6.8M

Users

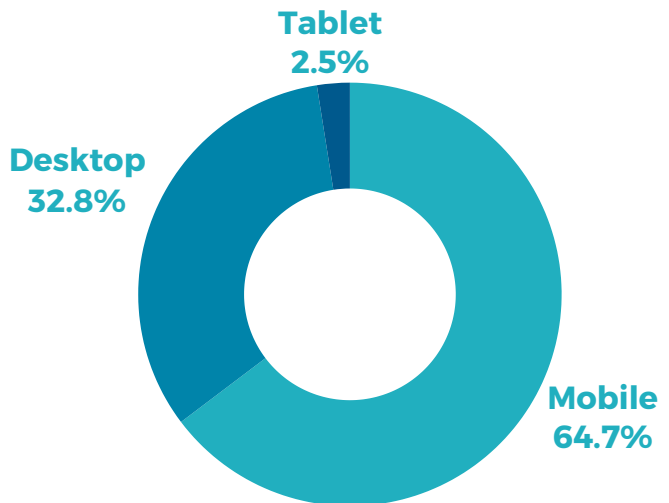
# 939

TLE Events

## 2023 ANALYTICS

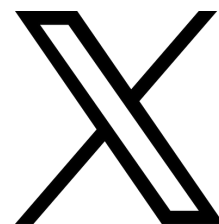
### SESSIONS BY DEVICE

TripCheck is being used more by visitors with mobile devices than other devices combined at 64.7% (see chart to right). As mobile devices become more utilized, web apps like TripCheck and TLE will need to prioritize mobile first concepts. 2023 saw a slight increase in Desktop users, up from 27.5%.



### TRIPCHECK ON TWITTER NOW X

X.com's decision to close its API, following its rebranding from Twitter, significantly impacted the Oregon Department of Transportation's (ODOT) ability to communicate traveler information. Previously, ODOT relied on Twitter's API for real-time updates and alerts to the public. With the API closure, **ODOT temporarily lost a crucial tool in its digital communication strategy**, affecting its capacity to disseminate timely and efficient travel information to Oregonians. TripCheck **notifications via X will resume** when updates to our publishing app are complete.



65%

Sessions on Mobile

1,483

TripCheck Emails

343K

511 Calls

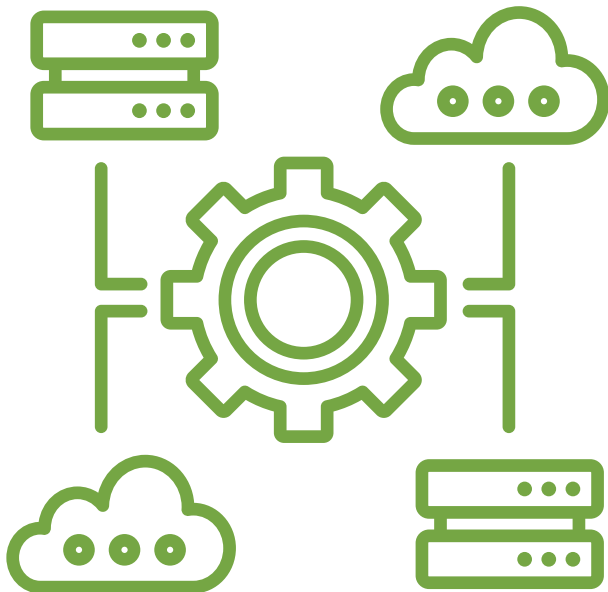


# TRIPCHECK API UPDATES

## WORK ZONE DATA EXCHANGE V4 (WZDX V4)

The [Work Zone Data Exchange \(WZDX\) Specification](#) enables infrastructure owners and operators (IOOs) to make harmonized work zone data available for third party use. The objective is to make travel on public roads safer and more efficient through ubiquitous access to data on work zone activity.

Specifically, the project aims to get data on work zones into vehicles to help automated driving systems (ADS) and human drivers navigate more safely.



[VISIT THE API PORTAL](#)

14.8

Terabytes of Data  
Transferred

25M

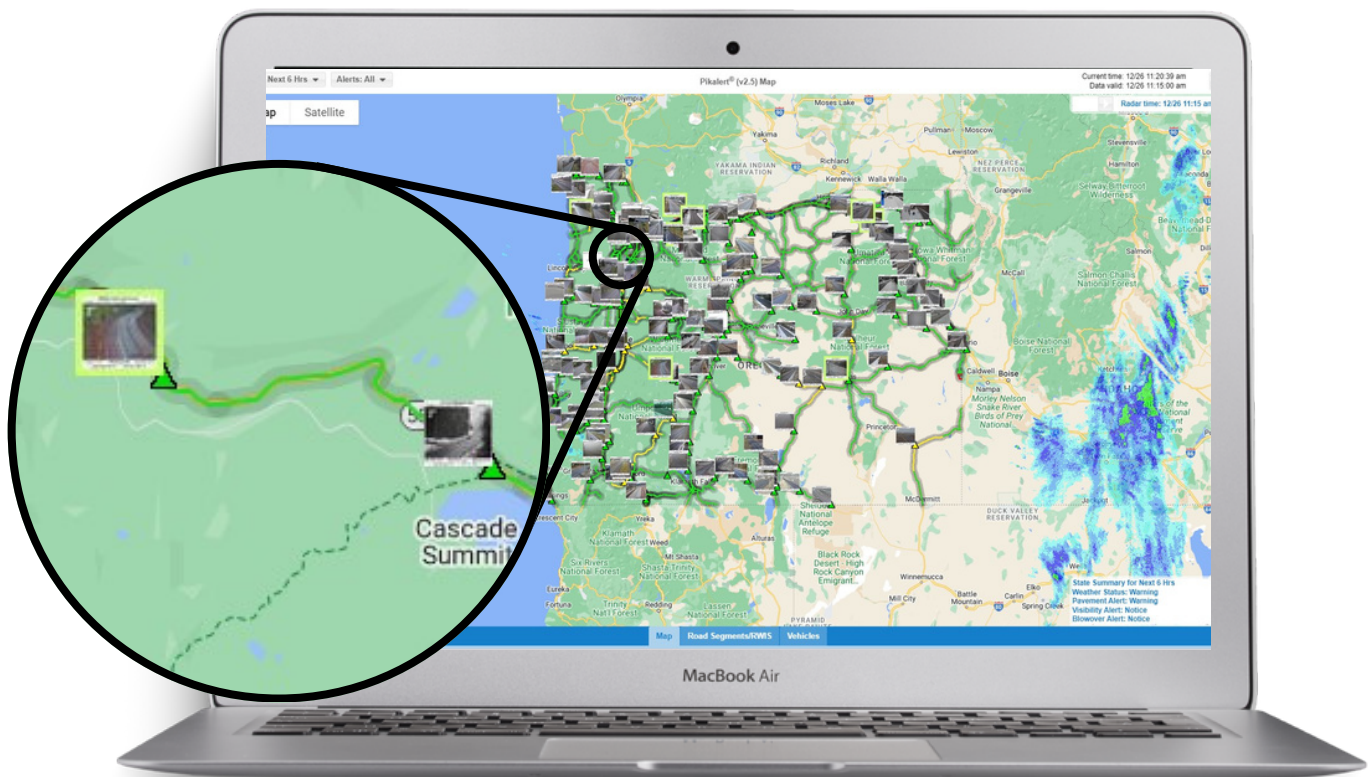
Total Request to API

285

Users

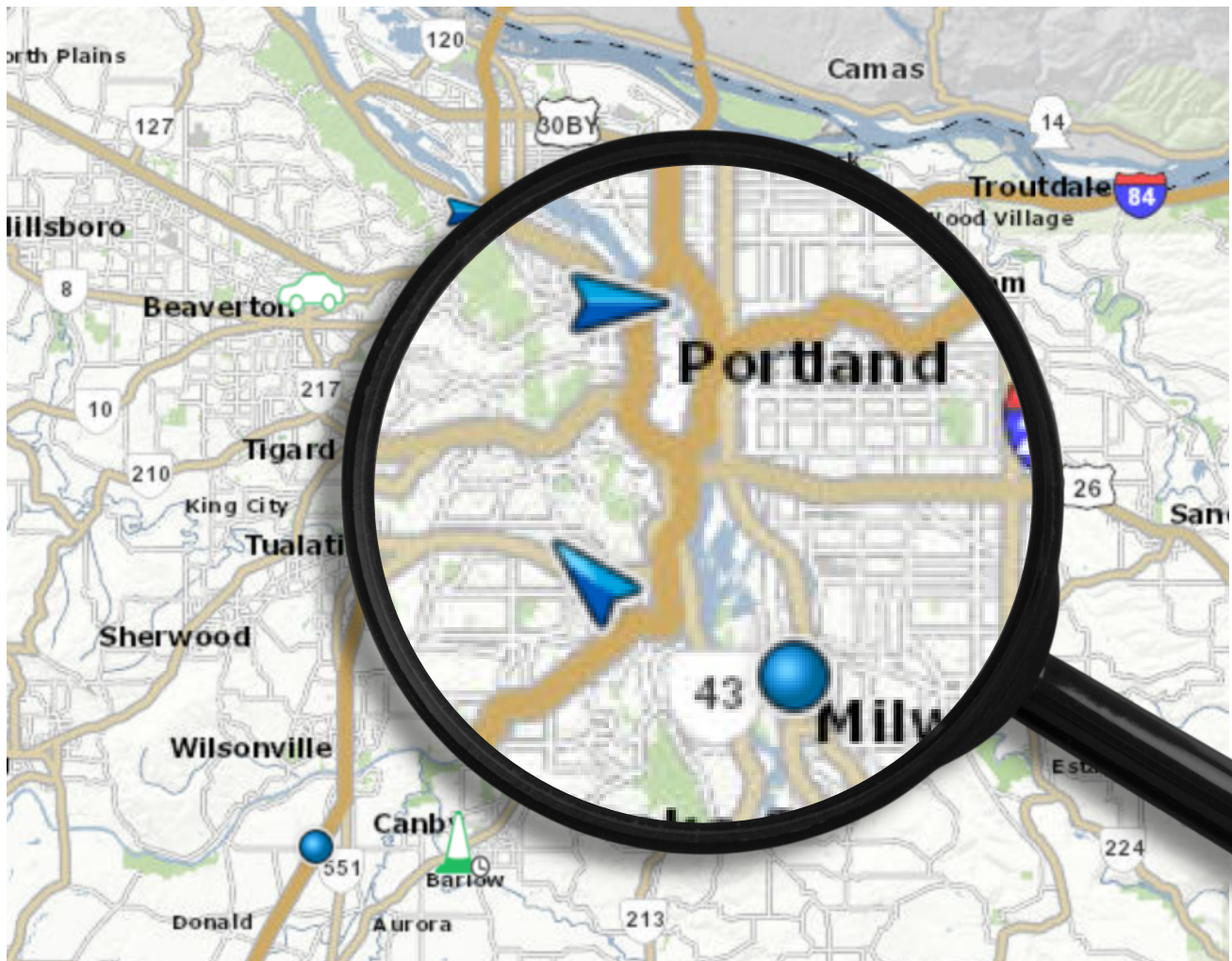
# PIKALERT UPDATE

Pikalert and ODOT are partnering to test the ability to determine winter road conditions using roadside cameras. Seven fixed cameras are being used to test the feature. Cameras will have a **green, yellow, orange or red border** indicating an estimate of road conditions.

**CLEAR****NOTICE****CAUTION****WARNING**

## AUTOMATIC VEHICLE LOCATION

We migrated the Incident Response Automatic Vehicle Location (AVL) service from Verizon to Geotab. AVL allows dispatchers in our Transportation Operations Centers to see the location of Incident Responders and assign events efficiently.





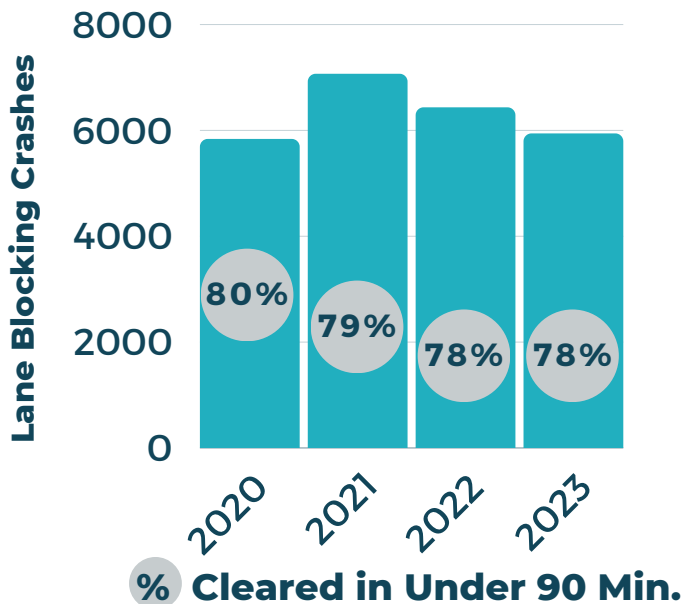


# Traffic Incident Management

*"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.

## 2023 ANALYTICS



**Total Event Count:**

**107,379**

**Of those events,**

**22.5%**

**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.



**66**

Crashes Everyday

**21**

Fatal Crashes Every Month

**9,080**

TIM Responders Trained to Date

# GOVERNOR PROCLAIMS CRASH RESPONDER SAFETY WEEK

**Crash Responder Safety Week (CRSW)**, observed from November 13-17, 2023, is a crucial initiative that underscores the **importance of safety** for all road incident responders. This week is a part of a broader campaign led by the Federal Highway Administration to raise awareness and foster practices that ensure the safety **of those who respond to traffic incidents**. ODOT, in collaboration with other partners, dedicated efforts to honor and promote CRSW following a proclamation from the Oregon Governor.



**The state's highest office's** acknowledgment not only emphasizes the initiative's significance but also **mobilizes resources** to enhance responder safety. The collaboration of various entities for CRSW reflects our **collective commitment to human life**, aiming to prevent secondary accidents or fatalities among responders.





# ODOT TIM INCIDENT RESPONSE PROGRAM NOW FEDERALLY FUNDED

The transition of the Oregon Department of Transportation's (ODOT) Incident Response (IR) program, dispatch program and 511 from **state funding to federal funding** marks a significant shift in its financial structuring and potential impact. This move is poised to alleviate some of the budget shortfalls faced under state funding, as federal funds can potentially infuse the program with a more substantial and stable financial resource.

This could enhance the TIM program's capacity to improve roadway safety and efficiency. However, it's important to note that while **this shift brings financial relief, it also introduces certain caveats**. Federal funding typically comes with stringent guidelines on how funds are to be used, requiring detailed reporting, adherence to specific federal standards, and potential audits.

This necessitates meticulous management and adherence to compliance measures within ODOT's TIM program to ensure that the federal funds are utilized effectively and in alignment with the stipulated federal guidelines and objectives.

## ODOT'S INCIDENT RESPONSE MISSION



Ensure the safety of emergency responders and the traveling public



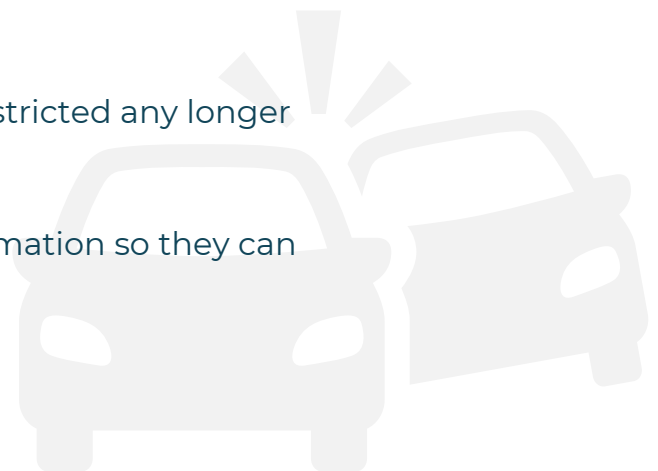
Ensure the highway is not blocked or restricted any longer than is absolutely necessary



Provide the traveling public timely information so they can make informed decisions



Protect the environment



# Information Systems Field Operation Services

*"Monitor, process, and take action 24/7, 365"*

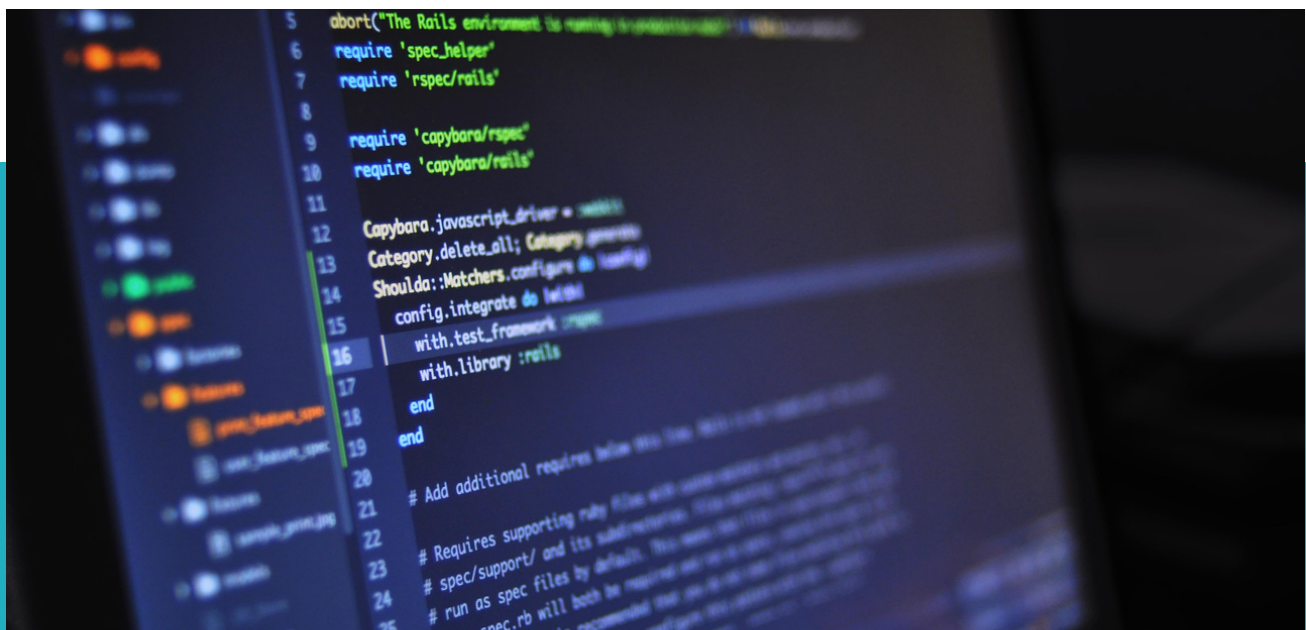
Behind all of our roadside equipment the Information Systems Field Operation Services team monitors and maintains these systems and associated hardware to keep them in peak operating condition.

# 2023 ACCOMPLISHMENTS

## PROJECTS AND APPLICATION SUPPORT

Staff shortages have not slowed down the newly renamed **Field Operation Services** (FOS) team. Some notable accomplishments are:

- **Server & Storage Modernization:** Installed new Storage Area Network (SAN) and migrated data.
- **Beacon Control in RPS:** Enhanced Response Planning System (RPS) for beacon activation/deactivation in sign message plans.
- **2023 TOCS Maintenance:** Released three versions with bug fixes and enhancements.
- **TripCheck Server Replacement:** Replaced servers for TripCheck and Advanced Traffic Information System (ATIS) systems.
- **ITS Server Replacements:** Updated servers hosting Vanguard and Central Ramp Metering System (CRMS).
- **ITS Website Migrations:** Migrated remaining websites to new servers.
- **Work Zone:** Implemented USDOT Work Zone Delay data feed (WZDx v4).
- **Traffic Count:** Developed process to export and import traffic count data from CRMS.





# 2023 ACCOMPLISHMENTS

## PROJECTS AND APPLICATION SUPPORT

Continued...

- **AVL:** Switched AVL from Verizon to GoFleet Geotab.
- **Forsecor:** Replaced with LEDS 20/20 application.
- **CRMS:** Released new CRMS versions with bug fixes and upgrades.
- **MQM:** Launched new versions with bug fixes and enhanced filtering.
- **Cameleon:** Integrated Washington County 911 cameras; expanded PBOT network.
- **RWIS Monitor:** Released new versions with bug fixes and Ice Grip Factor calculations.
- **TripCheck Live Traffic:** Implemented INRIX data caching for improved performance in winter.
- **Data Purge/Archive:** Improved data archiving and purging processes.
- **TOCS Performance:** Enhanced system performance and stability.
- **Multnomah Falls Parking:** Released new version to fix a bug.
- **SCAN:** Decommissioned legacy SCAN weather system.
- **KeyVault:** Upgraded to new technology and standalone database.



# ITS FIELD OPERATION SERVICES

## 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.



# Traffic Systems 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.



# TSSU 2023 ACCOMPLISHMENTS

## STAFFING UPDATE

By the end of 2023, both the signal unit and the ITS unit are fully staffed for the first time in over a decade. A total of six people were hired, 3 Technician 2's, 1 Technician 3, 1 Project Manager and the TSSU Manager.

## TSSU STOREROOM ORDERING PROCESS

As a response to the supply chain issues created during COVID, ITS decided to add network equipment to the existing signal supplies stocked in the TSSU storeroom. This change was meant to shorten equipment delivery lead times for projects and create efficiencies for replacement of failed equipment. As a result, staff began to develop a process to have all network equipment stored at the storeroom, except for a handful of spares at the T-Building. The process was approved in April of 2023 by ITS and Network management and fully implemented by September.

In addition to equipment for signals and ITS being stocked in the storeroom, an order form was developed and made available to order from. Follow the link to see what is available and if needed, feel free to place an order. [TSSU STORE ROOM ORDER FORM \(cognitofrms.com\)](https://cognitofrms.com)

## PROJECT WORK

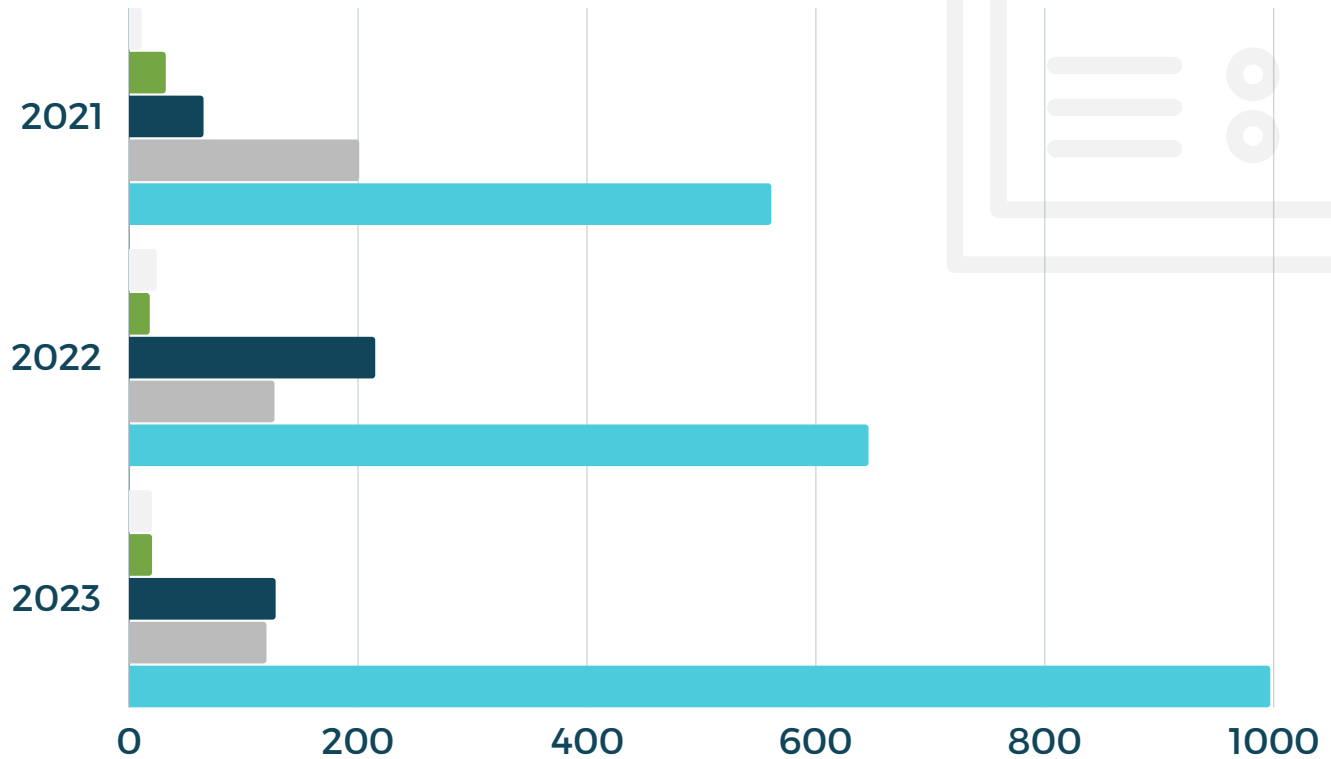
**175** PROJECTS

**252** WORK ORDERS

**2338** HOURS WORKED BY TSSU STAFF



## YEAR-OVER-YEAR COMPARISON



## 2023 ANALYTICS

20

### Turn-Ons

Commissioning a newly constructed signal, incl. cabinet replacements.

20

### Modifications

Any change to intersection that includes the cabinet.

128

### ATC Installations

Upgrading any existing controller to an ATC controller.

120

### Cabinets Tested

Testing of new signal cabinets in environmental chamber before install.

997

### Signal Inspections

Annual inspection of existing signals.

# VANDALISM

## IMPACT SUMMARY FOR REGION 1 TRANSPORTATION SYSTEMS

Region 1's transportation infrastructure has faced a surge in vandalism, affecting operational stability and safety. Vandals have employed a range of destructive methods, including **power theft, spray painting, equipment theft**, and forced entry into cabinets. Other forms of damage reported include **bullet holes, broken welds, and breaches in fences** and gates, among others.

These actions have led to considerable service outages and safety concerns, necessitating an increase in our maintenance and security budgets to address the immediate repairs and to prevent future incidents. The **costs associated with these damages are significant**, reflecting the urgent need for enhanced protective measures.





# 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.

## 2023 ANALYTICS

### STATEWIDE ITS COUNT BY DEVICE TYPE

664

Cameras

153

Ramp Meters

197

Detector Stations

5

Ramp Gates

2

Highway Advisory  
Radios

208

RWIS

181

Portable SWZT/VMS

477

VMS

15

Weather Warning Systems

164

Motor Carrier - CCD

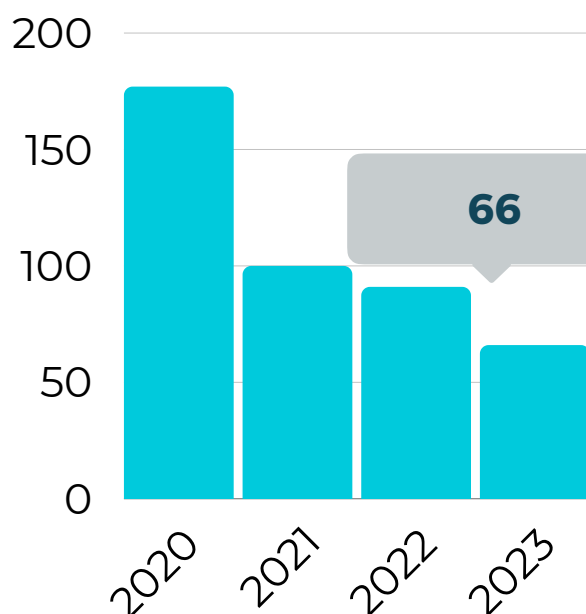
## ANNUAL ASSET GROWTH

### STATEWIDE SNAPSHOT

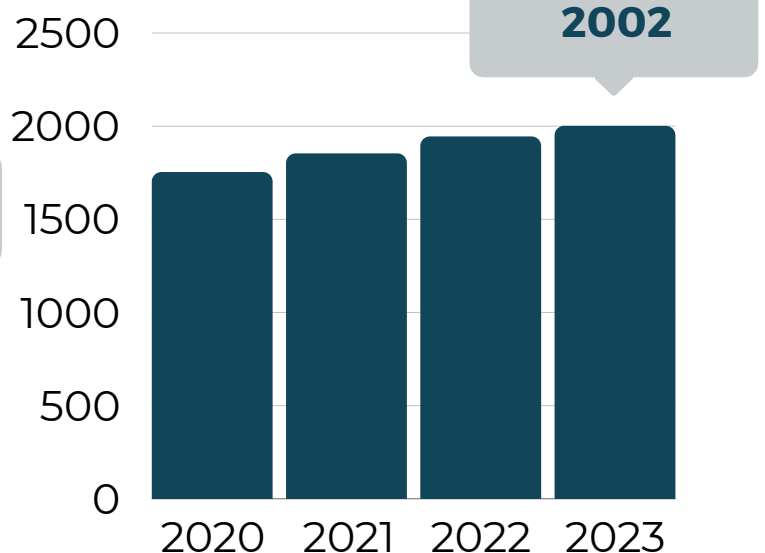
In the past year, the rate of new assets being added to the transportation infrastructure has experienced a gradual decline. This trend indicates **a shift in focus towards maintaining and optimizing existing assets**, ensuring they remain in a state of good repair, and enhancing the overall efficiency of the transportation network.

Moving forward, a pivotal objective is to establish a downward trend for assets beyond design life. Proactive asset management ensures that the infrastructure not only meets current standards for safety and functionality but also aligns with our strategic vision for sustainable and efficient operations.

#### ASSETS ADDED



#### TOTAL ASSETS





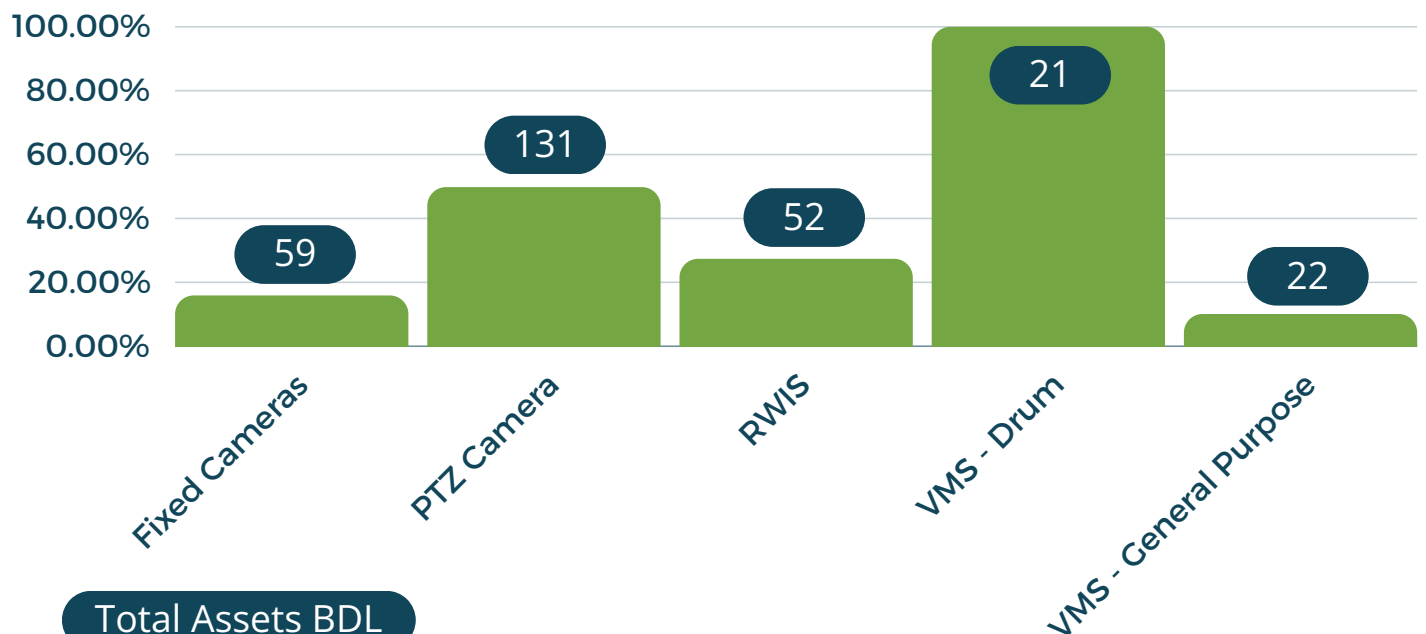
## ASSETS BEYOND DESIGN LIFE

### STATEWIDE SNAPSHOT

A significant portion of our ITS equipment inventory remains contemporary due to strategic investments of state funds in projects aimed at updating aging and obsolete hardware throughout recent biennia. However, with the decline in budgets, the ability to continue this proactive replacement is at risk, even as some of the initial ITS equipment approaches the end of its operational life.

The Asset **Beyond Design Life (BDL)** chart shows a snapshot of the current percentage at end of life for each device. Previous data was inaccurate; this report aims to set a new standard for future metrics.

### STATEWIDE PERCENTAGE OF TOTAL ASSETS BDL



Without intervention, assets beyond their design life will continue to grow annually. Future reports will aim to demonstrate a decrease in these aged assets, aligning with budget constraints that limit expansion of total statewide assets.

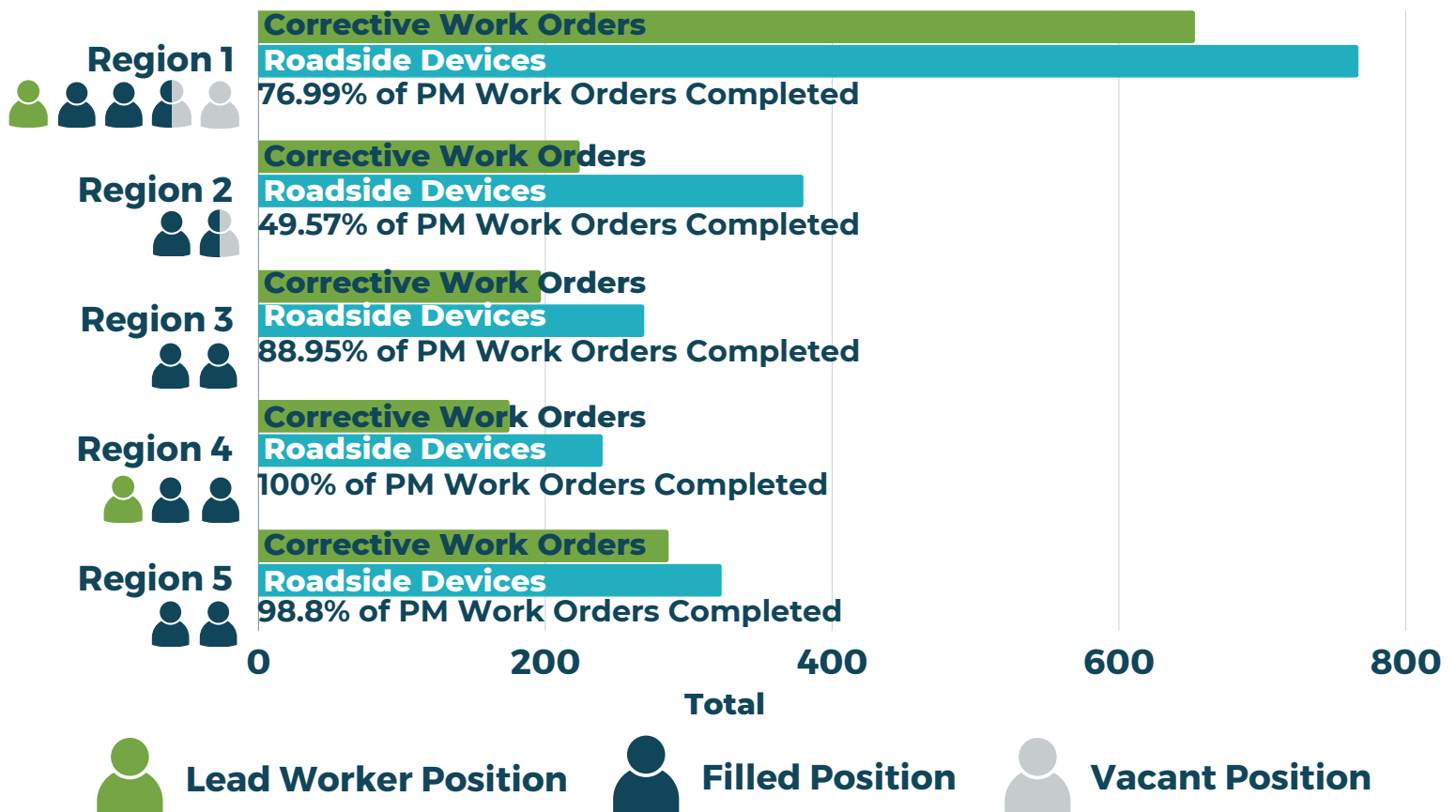
## 2023 ANALYTICS

### 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 **767 devices in R1**, **357** had PMs completed, but **653 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 1,010 work orders** with just three support technicians.

Work Orders Completed by Type Per Region

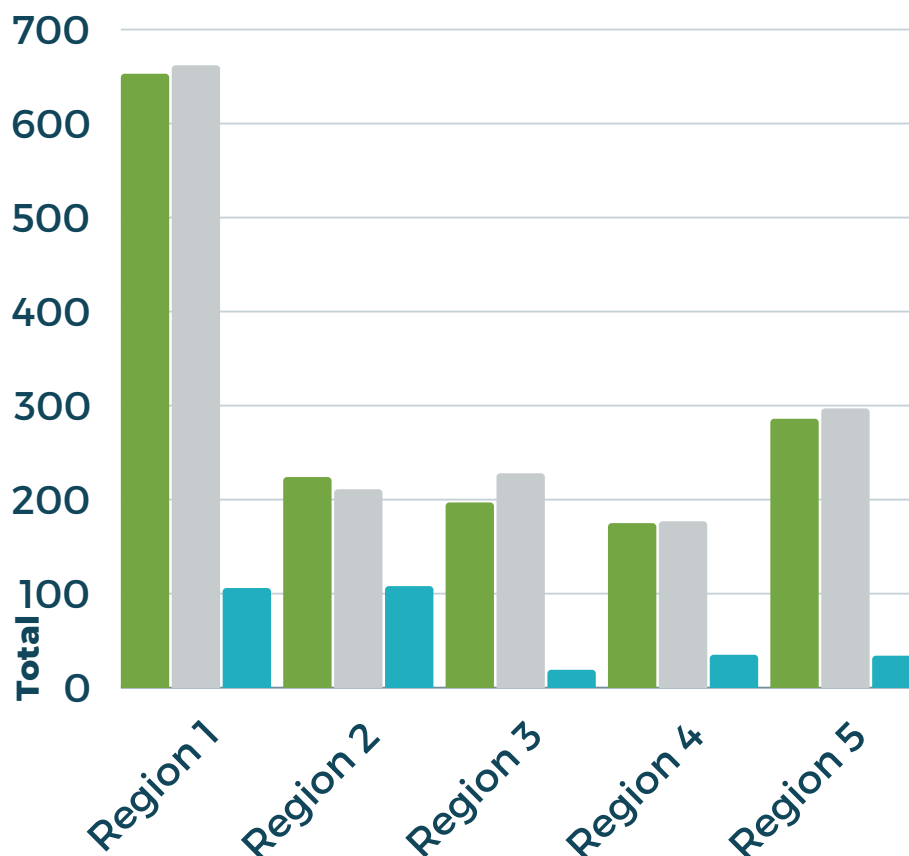


## 2023 ANALYTICS

### CORRECTIVE MAINTENANCE WORK ORDER DETAIL

The ITS corrective maintenance work orders not only cover listed ITS assets but **also include critical work on associated infrastructure** such as communications systems (fiber optics, networking equipment), traffic signal networking, and dispatch center operations (video walls, communication room issues). Additionally, these orders account for construction project support, ensuring integrated operations during system enhancements.

The graph below shows the number of work orders created and completed, along with the running backlog for 2023, broken down by region. This is corrective only work; **this does not include preventive maintenance work orders.**

**1,535**

Work Orders  
Created  
(Statewide Total)

**1,575**

Work  
Completed  
(Statewide Total)

**302**

Running  
Backlog  
(Statewide Total)



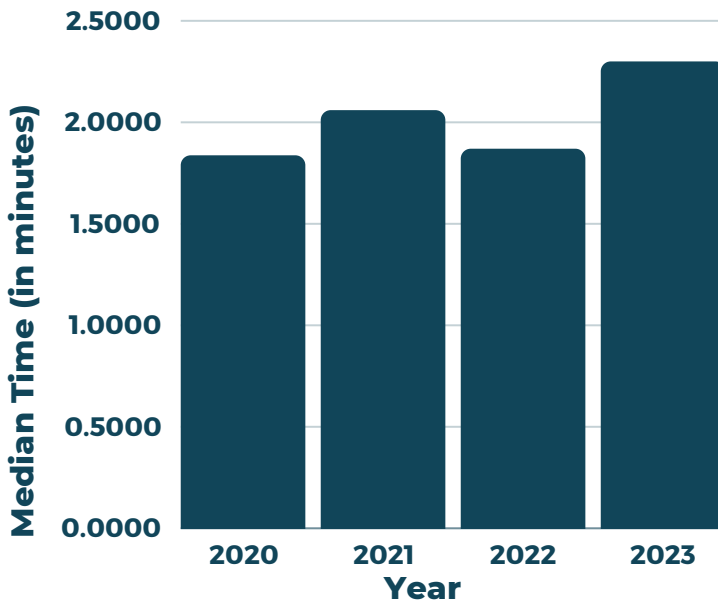


# TOC Operations

*"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.

## 2023 ANALYTICS

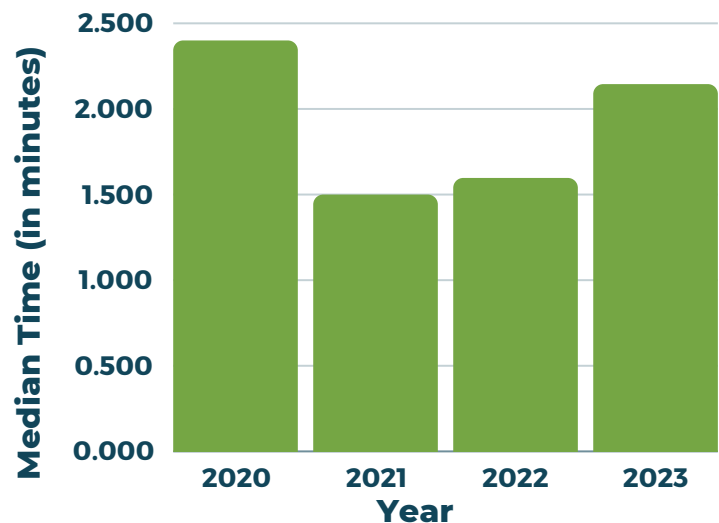


### PUBLIC NOTIFICATION OF EVENTS BY TOC

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

### RESPONSE PLAN SYSTEM

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

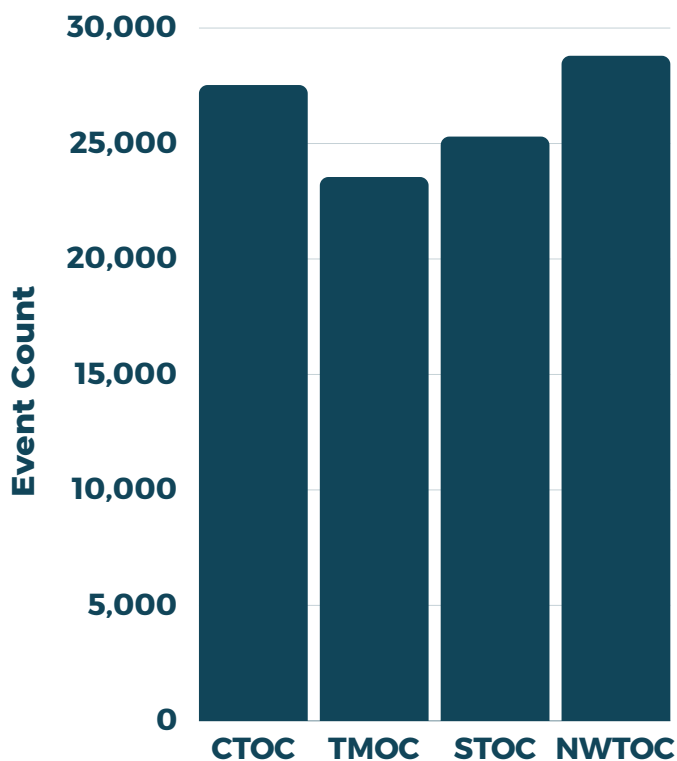


*It is federal rule to provide traveler information using variable message signs, the internet, 511, and the media within 10 minutes of event verification.*

## 2023 ANALYTICS

### EVENT COUNT BY TOC

In 2023 there were 107,379 events accounted for statewide. Each event is logged into TOCS with an event type to help determine incident severity and protocol.



### EVENT TYPE CATEGORIES LISTED BY VOLUME

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

# 24K

Total Crashes

# 252

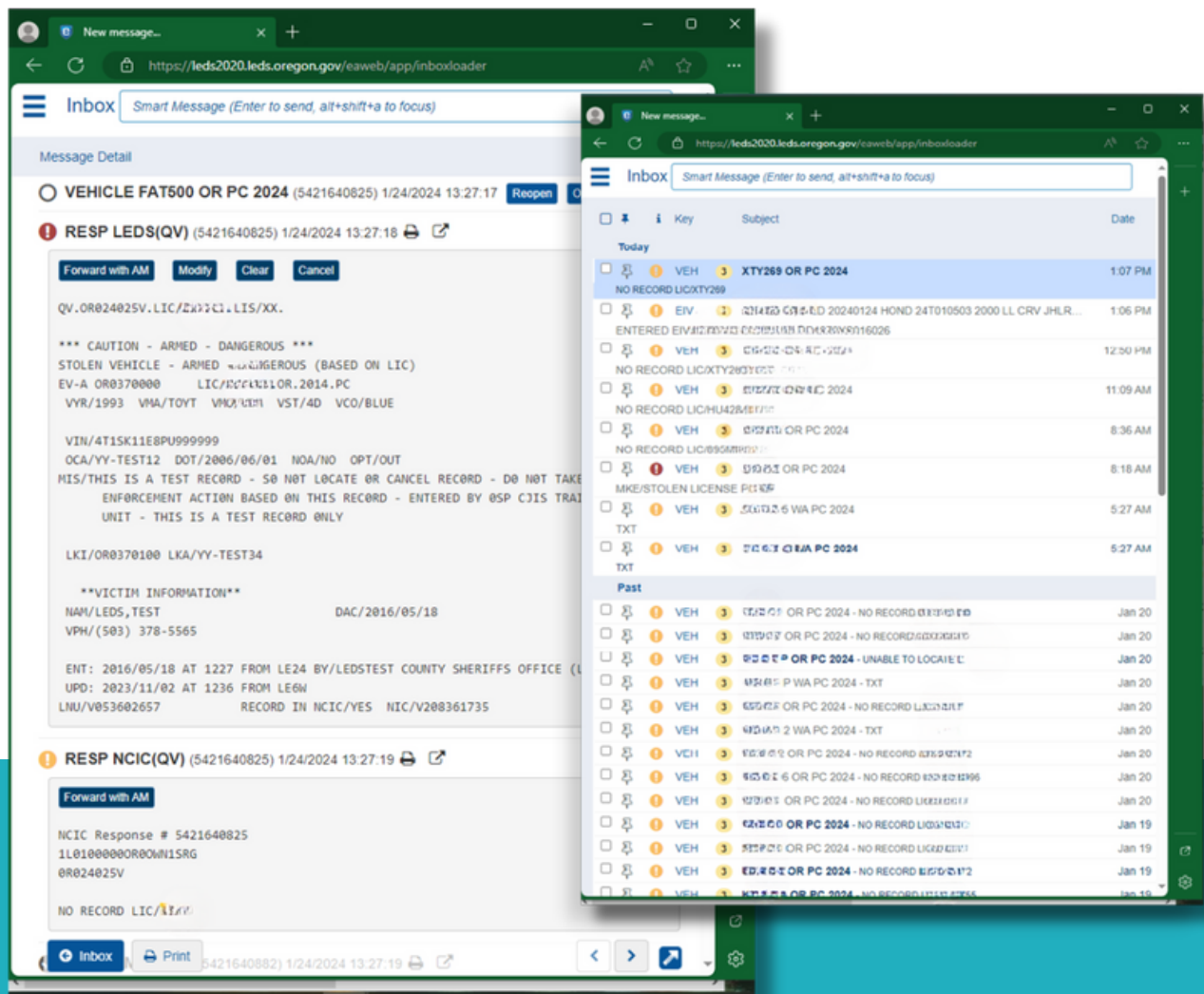
Total Fatal Crashes

# 57K

Shared Events with  
Partnering Agencies



ODOT uses the ForSeCom application to verify vehicle information for safety purposes, alerting incident responders to any associated risks such as stolen vehicles or owners with legal problems. Additionally, ForSeCom facilitated the removal of vehicles that were causing obstructions on the road. However, with ForSeCom's upcoming discontinuation in 2024, ODOT shifted to using LEDS 20/20, a web-based application already in use by the Oregon State Police and provided by Diverse Computing, Inc. This transition was completed by all ODOT dispatchers by the middle of December, as they adapted to the new system's interface and expanded capabilities.





# Signs & Signals

*“Sign maintenance is key for clear traveler communication.”*

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

## CHANGES IN ANNUAL REPORTING

The signage data, abundant and varied, presents challenges in reporting due to the dynamic nature of retro-reflectivity measures and the lack of historical data. **Districts conduct retro-reflectivity assessments at differing intervals**, which are used primarily for maintenance coordination rather than historical analysis.

For the Annual Maintenance & Operations Inventory, the data include counts of Major (equal to or larger than 20 sq. ft.) and Minor (smaller than 20 sq. ft.) signs, along with their supporting structures.

The current database is optimized to detail existing sign and support **counts and their locations, rather than changes over time**. This report has been compiled as it is most frequently requested for operational needs.

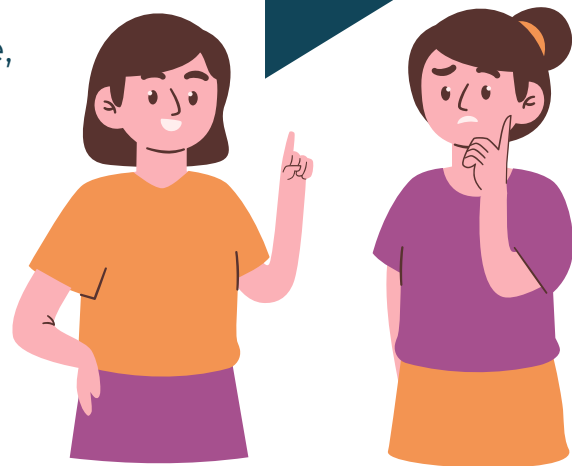


## HOW MANY SIGNS DO WE HAVE?

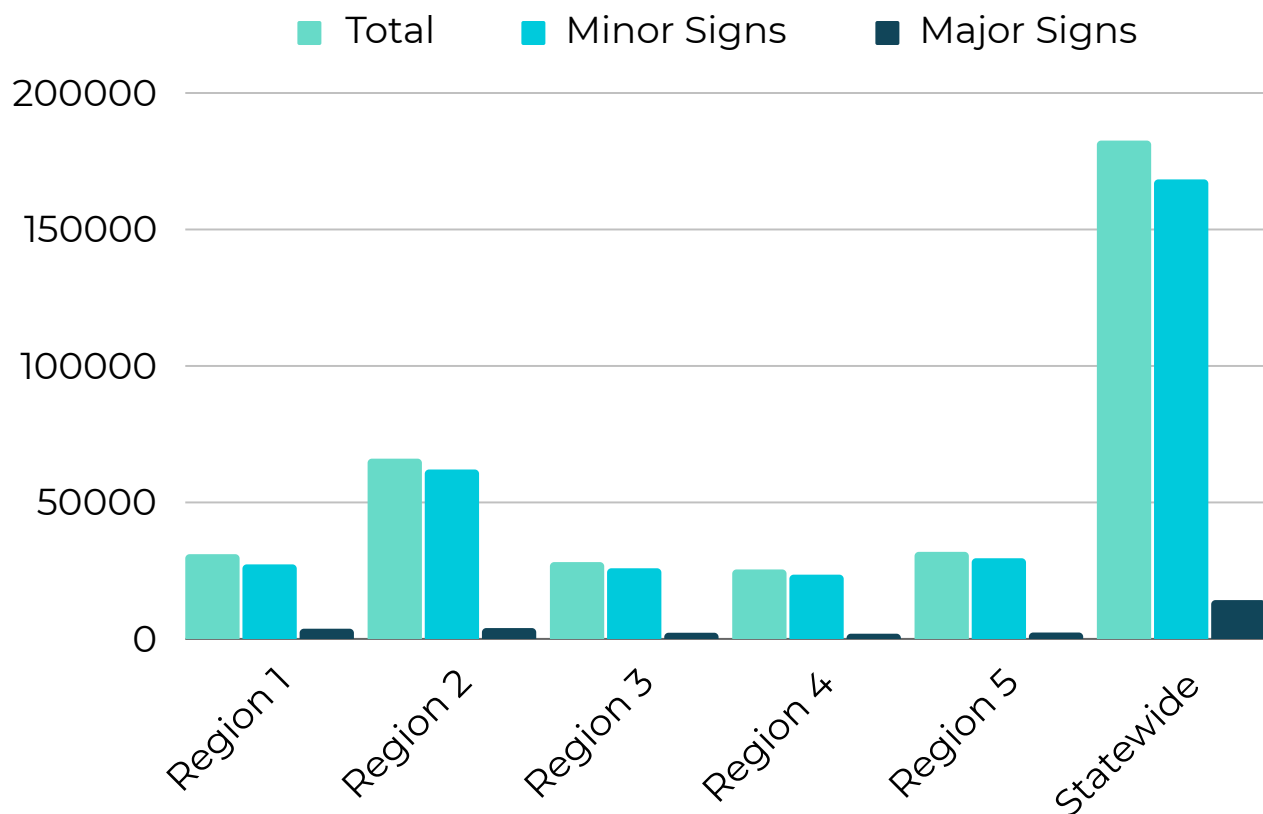
This chart provides frequently requested sign inventory statistics, specifically the total number of signs rather than individual counts. The database focuses on current sign locations and quantities, but it isn't designed to track changes over time, making it challenging to analyze historical data or trends in sign infrastructure.

**182K**

Total Signs Statwide



## NUMBER OF SIGNS BY REGION

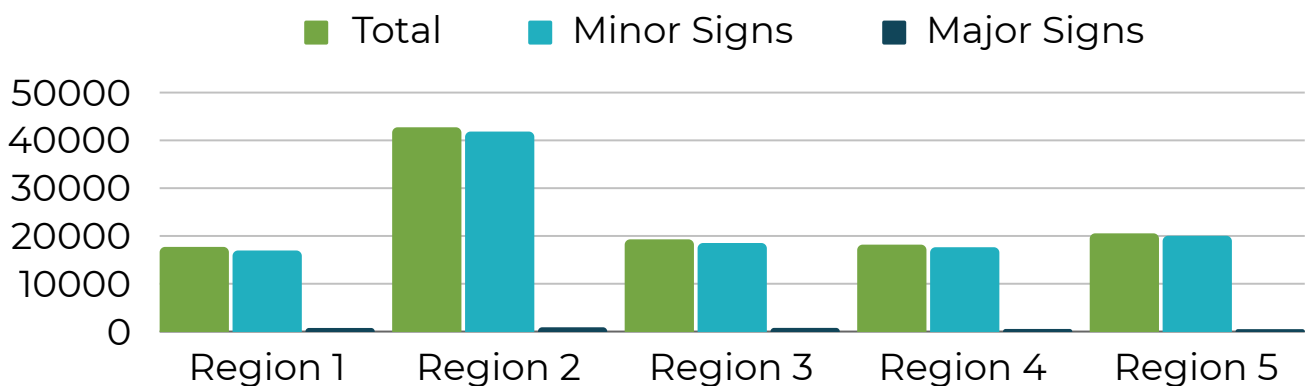




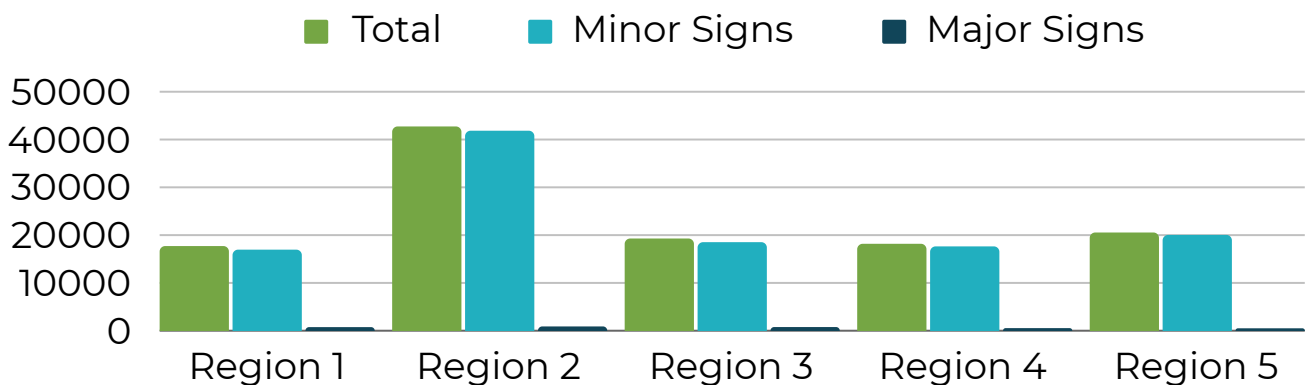
## ODOT SIGN INVENTORY

ODOT maintains a strategic mix of standard and custom signs in its inventory, ensuring road safety and clear navigation across the state's transportation network. Standard signs adhere to national guidelines for consistency, while custom signs address unique or location-specific needs. This balanced approach ensures that every sign contributes effectively to the safe travel experience on Oregon's roads.

### STANDARD SIGNS



### CUSTOM SIGNS

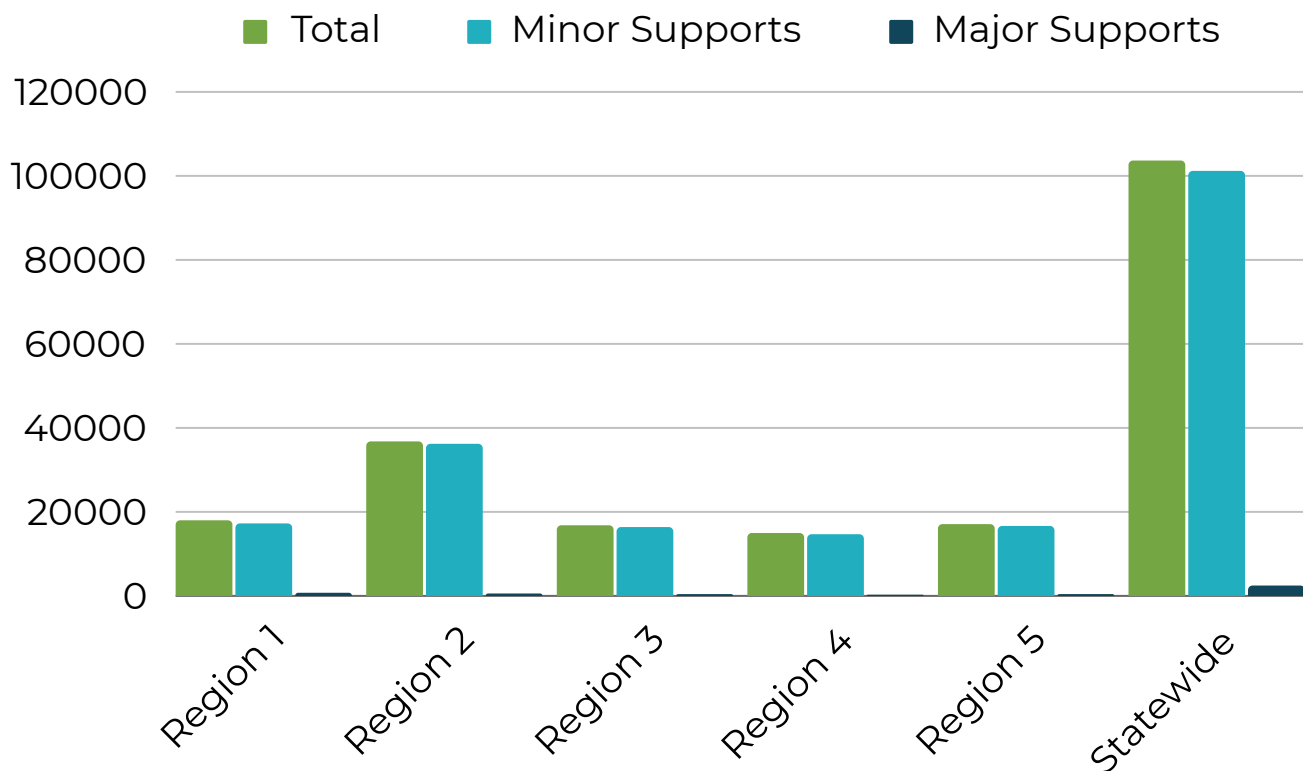


## MINOR & MAJOR SUPPORT INVENTORY

Supports are integral to maintaining the structural integrity and effectiveness of our signage system, ensuring that every sign, regardless of size, delivers clear and reliable information to travelers.

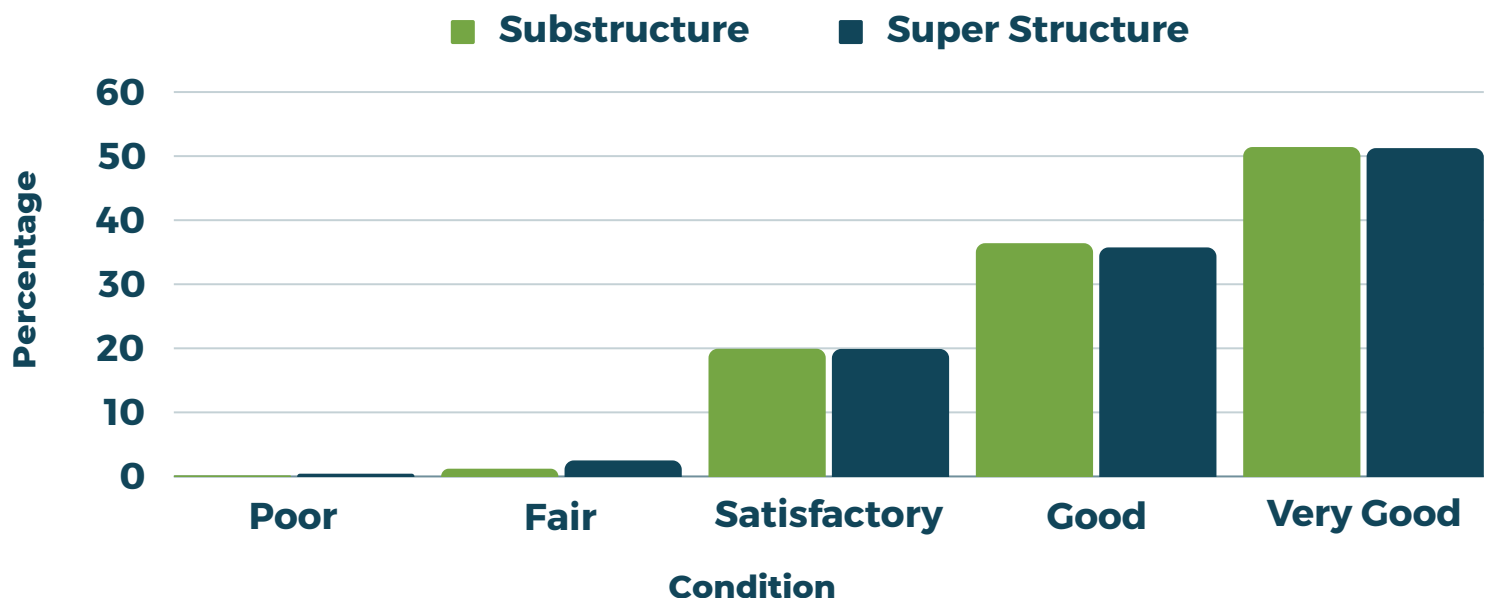
**Minor supports** comprise wood posts, steel square tube posts, triangular base breakaway supports, and adjustable sign brackets.

**Major supports** include Sign Bridges, Cantilevers, and Multi-Post Breakaway supports.



# STATEWIDE MAJOR TRAFFIC SUBSTRUCTURE / SUPER STRUCTURE CONDITION RATINGS

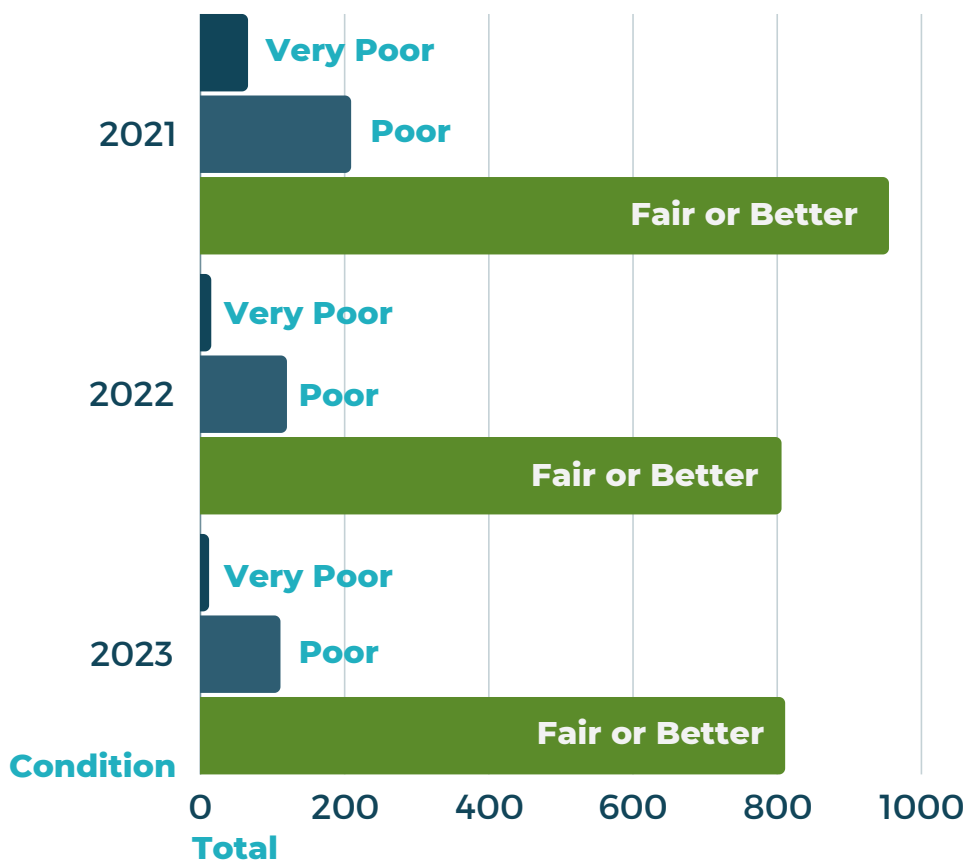
This data shows the condition ratings for major traffic structures (large cantilever and sign bridge supports for signs and VMS) based on inspection by the region bridge inspector. Substructure simply means under the ground, whereas super structure represents everything above the substructure.



## 2023 ANALYTICS

### STATEWIDE SIGNAL CONDITION RATING

Of the 952 ODOT owned and maintained signals in 2023, this graphic captures the number of assets that are in very poor, poor, and fair or better condition.

**12**

Very Poor  
Condition  
(Statewide Total)

**111**

Poor  
Condition  
(Statewide Total)

**811**

Fair or Better  
Condition  
(Statewide Total)

**890**

Total ATCs  
Installed

**95%**

Total Installed  
Statewide

95% of all ODOT owned and maintained signals have had Advanced Transportation Controllers (ATC) installed, a 30% increase from 2021.



# Broadband



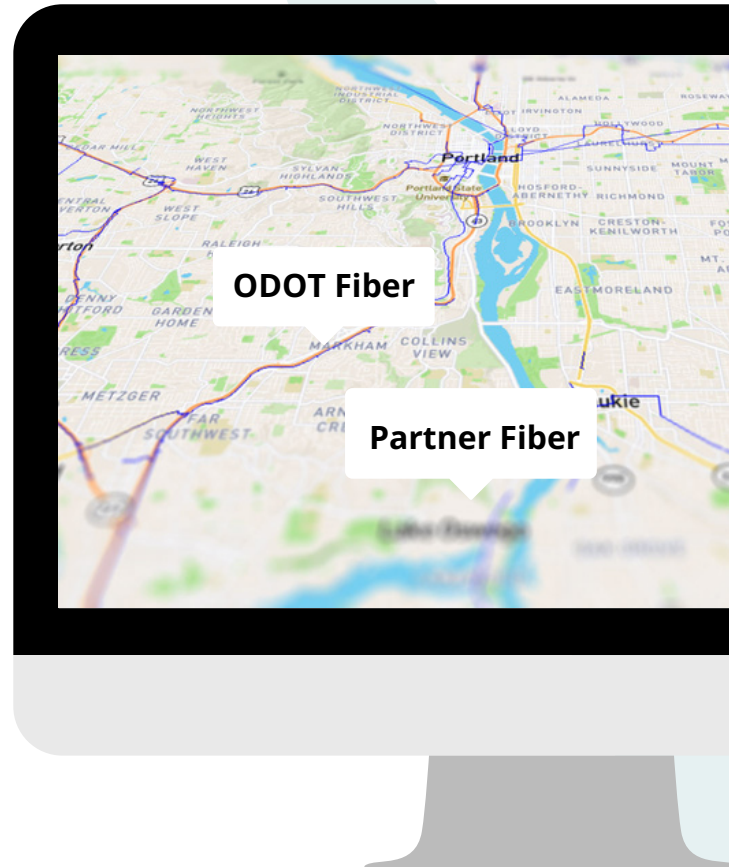
*"Broadband technology is a key infrastructure building block for a modern transportation system."*

ODOT's broadband program, like many state DOT broadband programs, was created in 2021 in part to meet federal and state requirements in the MobileNow Act and HB2411.

## MAPPING FIBER INFRASTRUCTURE

ODOT is employing online mapping software to **document** its **broadband infrastructure** comprehensively, facilitating the **identification and management** of its **fiber optic assets**.

This strategic approach enables ODOT to uncover and **pursue partnership opportunities** with other agencies, leveraging shared or new fiber installations for a wide range of applications, including Intelligent Transportation Systems (ITS) and extending broadband services to larger audiences.



## IMPLEMENTING HB2411 (2021)



**DRAFTED OREGON ADMINISTRATIVE RULES AND SUBMITTED THEM TO THE DEPARTMENT OF JUSTICE FOR REVIEW**



**REFINED NOTIFICATION SYSTEM FOR SHARING SPACE IN ODOT TRENCHES**



**WORKING ON STIP PROJECT ACCOMMODATIONS, PROCESS MANUALS & GUIDANCE UPDATES TO INCLUDE BROADBAND**

## PRIORITIZATION PLANNING

Collected data to support creation of an ODOT Fiber Optic Prioritization Plan. The plan will identify priorities for:



**SAFETY AND ATM CORRIDORS**



**ITS AND SIGNAL CONNECTIVITY**



**COORDINATING WITH OTHER  
STATE AND LOCAL  
BROADBAND PLANS**



**MOTOR CARRIER**



**INTERSTATE AND CORRIDORS  
WITH HIGH TRAFFIC VOLUMES**



**ODOT NETWORK AND OFFICE  
CONNECTIVITY NEEDS**

## PARTNERSHIP OPPORTUNITIES

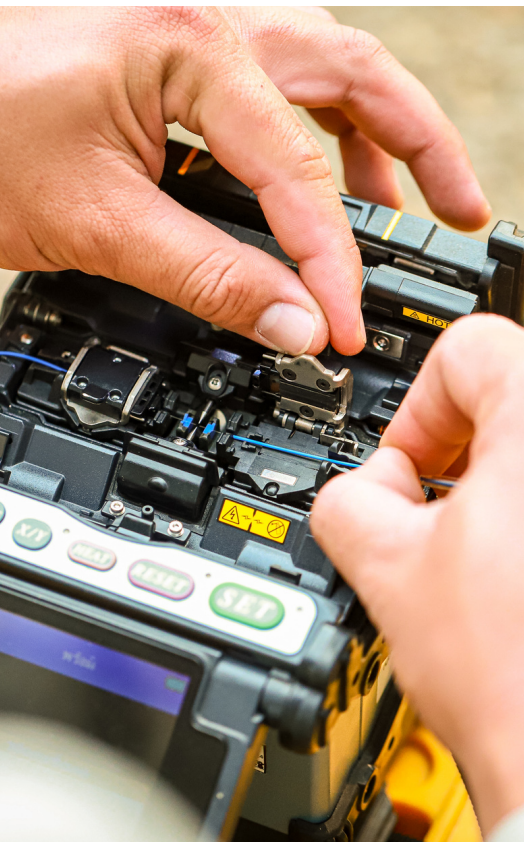


Due to the **overall agency budget constraints** and high construction costs of fiber optics, the 2022 ODOT Broadband Strategy and Implementation Plan identified partnerships as a key to expansion of ODOT **fiber infrastructure**.

ODOT continues to:

- Develop relationships with the **private sector** and participate in broadband industry organizations to identify project opportunities
- Expand relationships with **public sector** entities on broadband projects
- Work with the ODOT Innovative Partnership Program to facilitate partnership projects using **alternative procurement** and financing





## BROADBAND PROJECTS

01

### **BEND TO LAPINE**

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

02

### **HIGHWAY 99W TIGARD**

Took ownership of an unused conduit system on Highway 99W in Tigard at no cost to ODOT.

03

### **PGE AGREEMENT**

Signed a statewide pole attachment agreement with PGE for fiber optic cables.

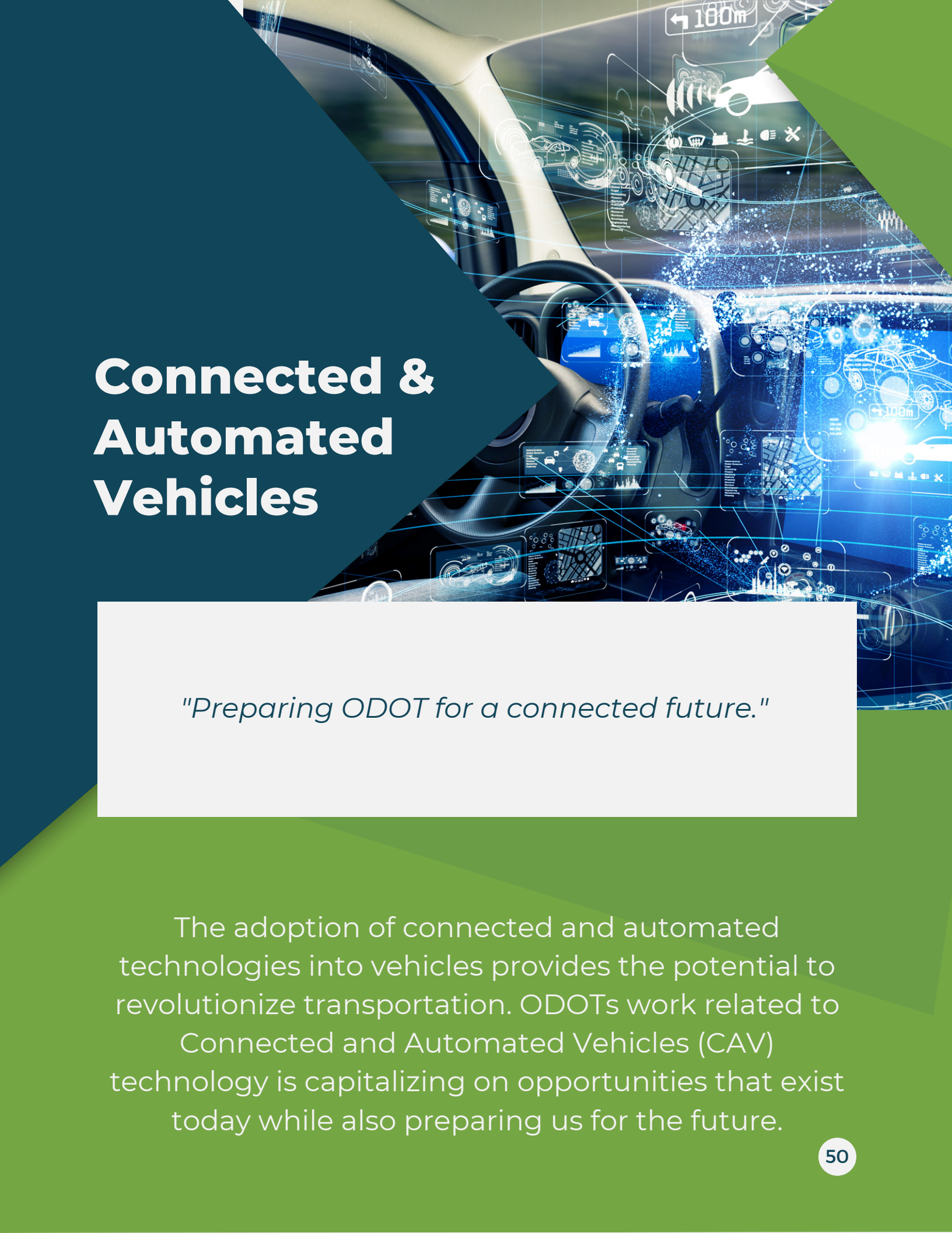
04

### **PARTNERSHIP AGREEMENTS**

Negotiated renewals of IGAs and fiber optic sharing agreements with several cities and private telecom companies.







# Connected & Automated Vehicles

*"Preparing ODOT for a connected future."*

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

## CVE VENDOR SELECTED

A price agreement was established with NextMove by Cintra to plan, develop, operate, and maintain a Connected Vehicle Ecosystem (CVE). The CVE is intended to communicate directly with internet connected vehicles using the original equipment manufacturer's embedded cellular network connections and the wireless cellular vehicle-to-everything (C-V2X) 5.9 GHz frequency safety band.



**GATHER AND DELIVER  
DATA TO VEHICLES**



**OPERATIONS AND  
SAFETY APPLICATIONS**



**IMPLEMENT ROAD  
USAGE CHARGING**



**5.9 GHZ VEHICLE  
INFRASTRUCTURE**



# WHAT'S NEXT FOR CVE?



## Connected Vehicle Ecosystem Services (CVE) - Overview:

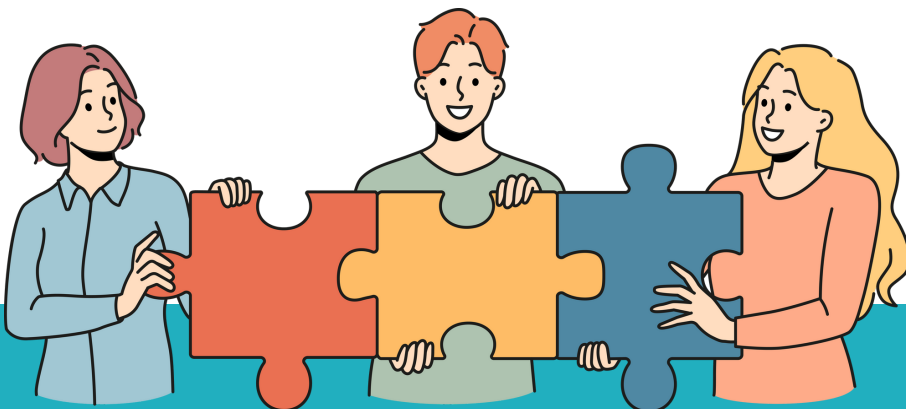
- Project Name: CVE
- Project Phase: Phase 0
- Total Budget: Phase 0 Budget
- Objective: Develop a robust Connected Vehicle Ecosystem to enhance highway system communication.

### Key Components:

- Establish a data platform for vehicle communication.
- Plan and design a scalable and secure system architecture.
- Set the groundwork for future phases with thorough planning and analysis.

### Deliverables:

- Project Management Plan
- Partnering Agreement and Guidelines
- Concept of Operations
- System Architecture
- Data Flow Diagram
- Implementation Plan
- Data Acquisition and Management Plan
- Cybersecurity Plan



## 2023 SUMMARY

The Operations Program Plan from August 15, 2018, outlines ODOT's focus on optimizing transportation system performance through various strategic operations and management approaches. It addresses Oregon's transportation challenges, such as congestion and travel time reliability, by employing operations strategies to enhance safety, manage incidents, and improve mobility and customer outreach.

The plan includes a mission to move people and goods safely and efficiently, setting goals like integrating operations into agency projects and optimizing the existing multimodal transportation system. It also emphasizes the importance of innovation, performance measurement, and sustainable program support through asset management practices.

