DKS

Deschutes County Intelligent Transportation System (ITS) Plan

Smart Cities Workshop

Oregon Department of Transportation

BMPO Bend Metropolitan Planning Organization

December 16, 2019

Today's Agenda

1. Welcome and Introductions	9 a.m.
2. Evolution of Intelligent Transportation in Bend	9:20 a.m
3. Future of Mobility	9:45 a.m.
4. Break	10:15 a.m.
5. Bend's Smart/Connected Future – Small Group Instruction	10:30 a.m.
6. Small Group Breakout Sessions: ❖ Multi-modal and Emerging Mobility ❖ Data: Big Data, Analytics, Dashboards, Warehouse, Sharing ❖ Incident Management, Emergency Response, Resiliency ❖ Connected and Automated Vehicles	10:40 a.m.
7. Report out and Synthesize	11:10 a.m.
8. Next Steps and Action Items	11:30 a.m.

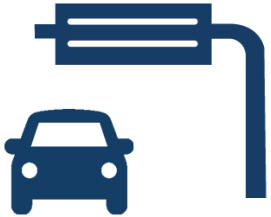
What are
Intelligent Transportation
Systems (ITS)?

ITS Benefits

INCREASED SAFETY

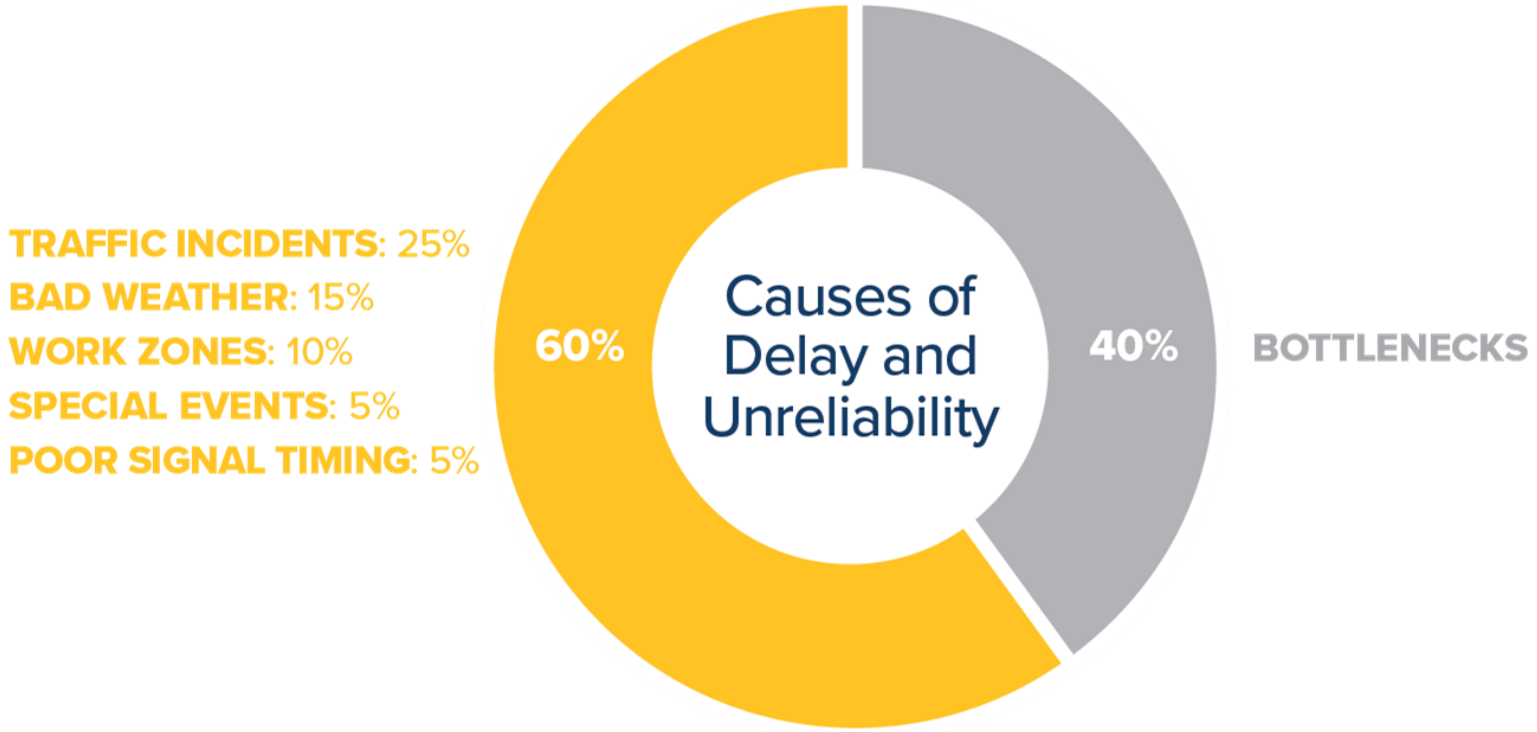
REDUCED FUEL CONSUMPTION & EMISSIONS

REDUCED DELAY



PROVIDES REAL-TIME INFORMATION TO TRAVELERS

Managing Traffic Delays



Source: FHWA-HRT-05-002

ODOT Operations Program Mission and Goals

Mission: Move people and goods safely and efficiently

Goals:

Integrate Operations into appropriate agency projects, policies, plans and procedures

Optimize the efficiency and safety of the existing multimodal transportation system

Be agile and innovative in identifying, adopting, and accommodating effective operations technology and strategies

Promote safe and efficient travel through communication of accurate and timely transportation system status information and collaborationwith public and private partners

Utilize performance base startegies to drive operations planning and decision making

Achieve a sustainable Operations Program supported by good asset management practices

Source: ODOT Operations Program Plan

Potential Emerging Operational Strategies

- **Connected/Autonomous Vehicle Readiness**
  - Information to vehicles, role of signals, etc.
- **Safety Applications**
  - Multimodal, vision zero, rural safety (curve/speed)
- **Vehicle Electrification**
  - Transit, fleets, autos
- **Shared Mobility/Mobility on Demand**
  - Bikeshare, rideshare, trip planning, first/last mile
- **Emergency Management**
  - Integrated communications and collaboration

History of ITS Plan in Deschutes County

Timeline of ITS Planning in Deschutes County

2005

Original Deschutes County ITS Plan Completed

2010

ODOT Region 4 ITS and Communications Plan Update

2011

Deschutes County ITS Plan Update

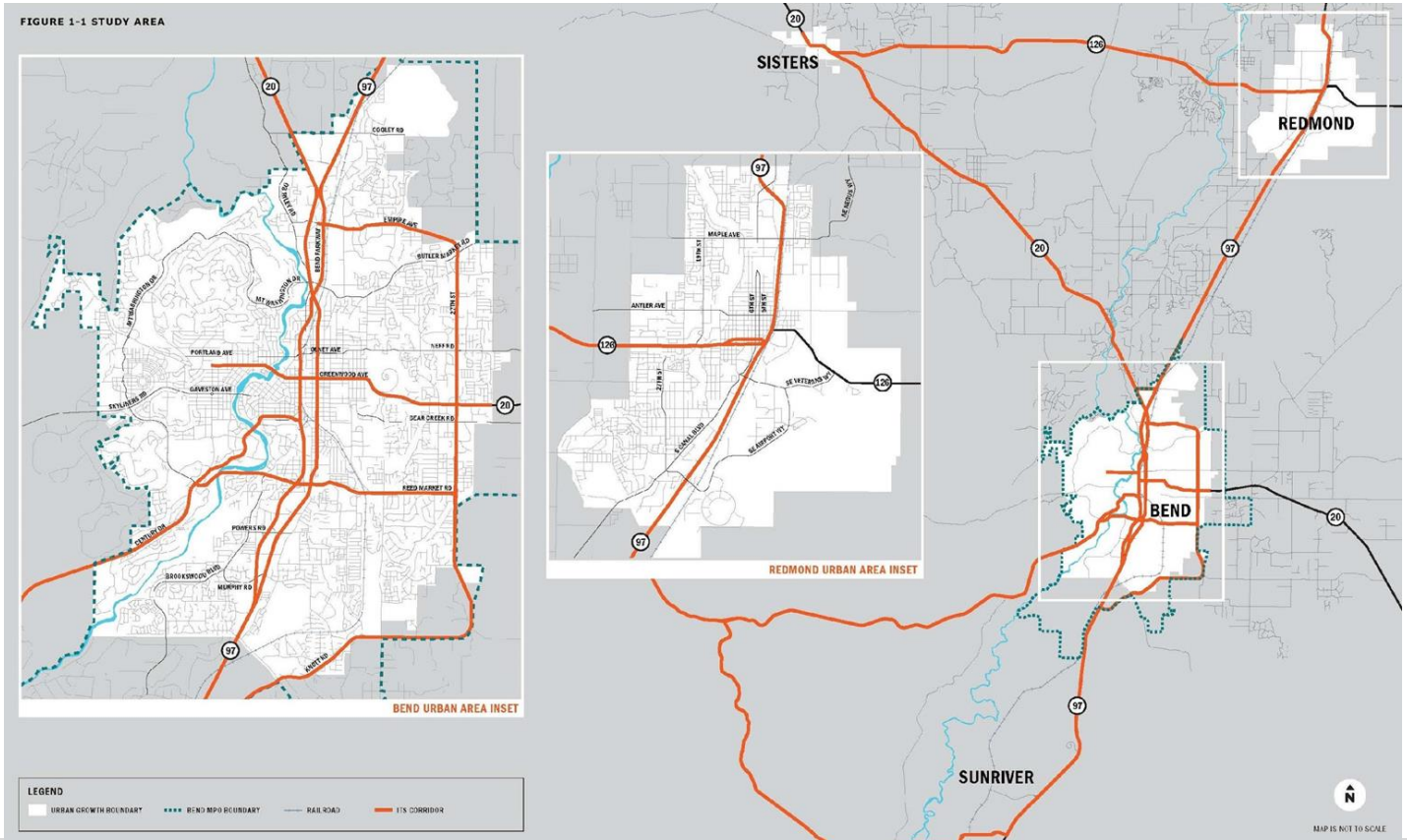
2019

Bend TSP/MTP Update & Deschutes County ITS Plan Update

Why Does the ITS Plan Need to be Updated?

- Implemented more than 25% of the projects from the 2011 plan
- The National ITS Architecture hasn't been updated since 2011
- New smart mobility strategies are emerging and it's time to rethink the plan

Geographic Scope for the Plan



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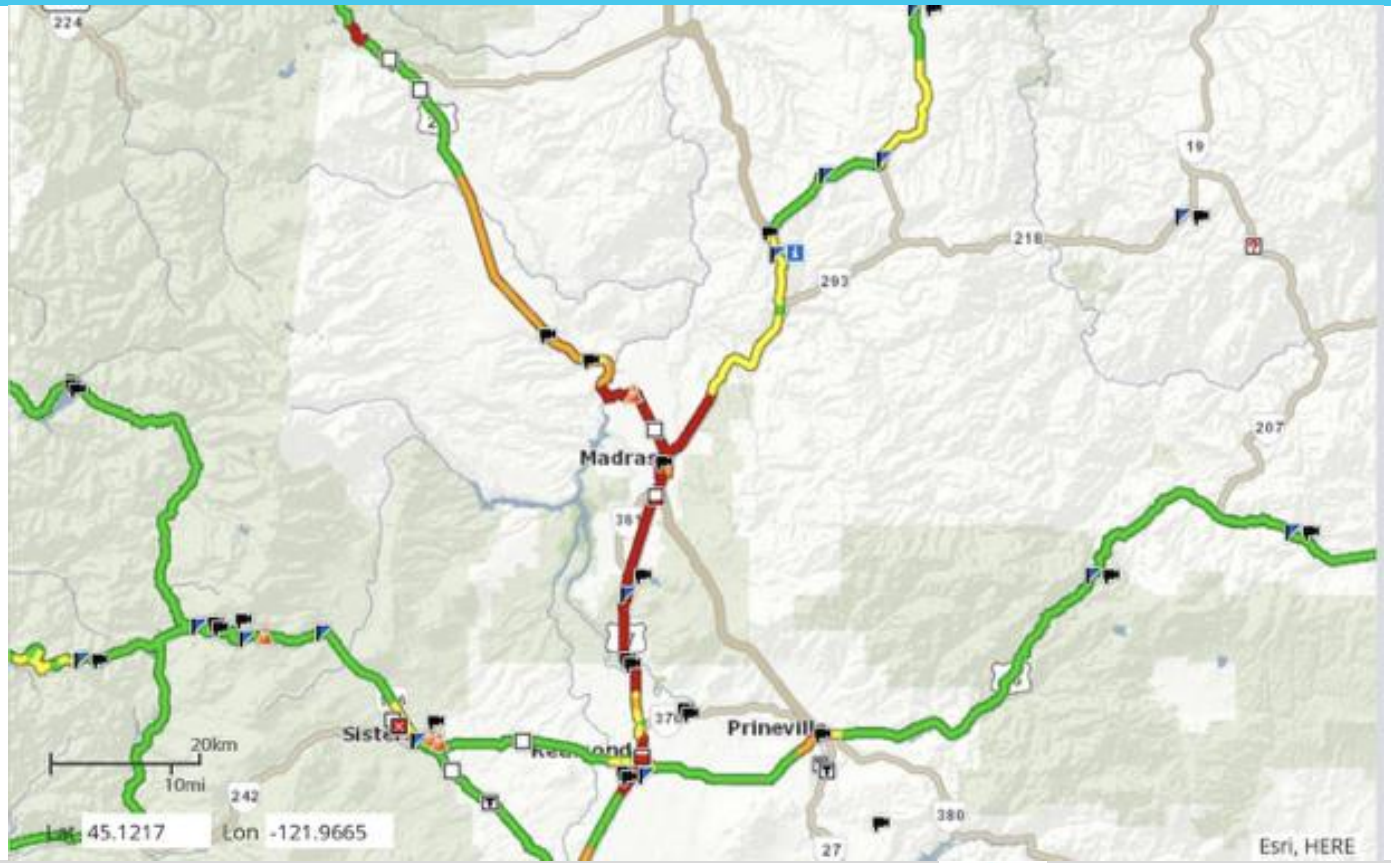
Accomplishments

Progress

28 out of 98

PROJECTS COMPLETED OR SUBSTANTIALLY COMPLETED

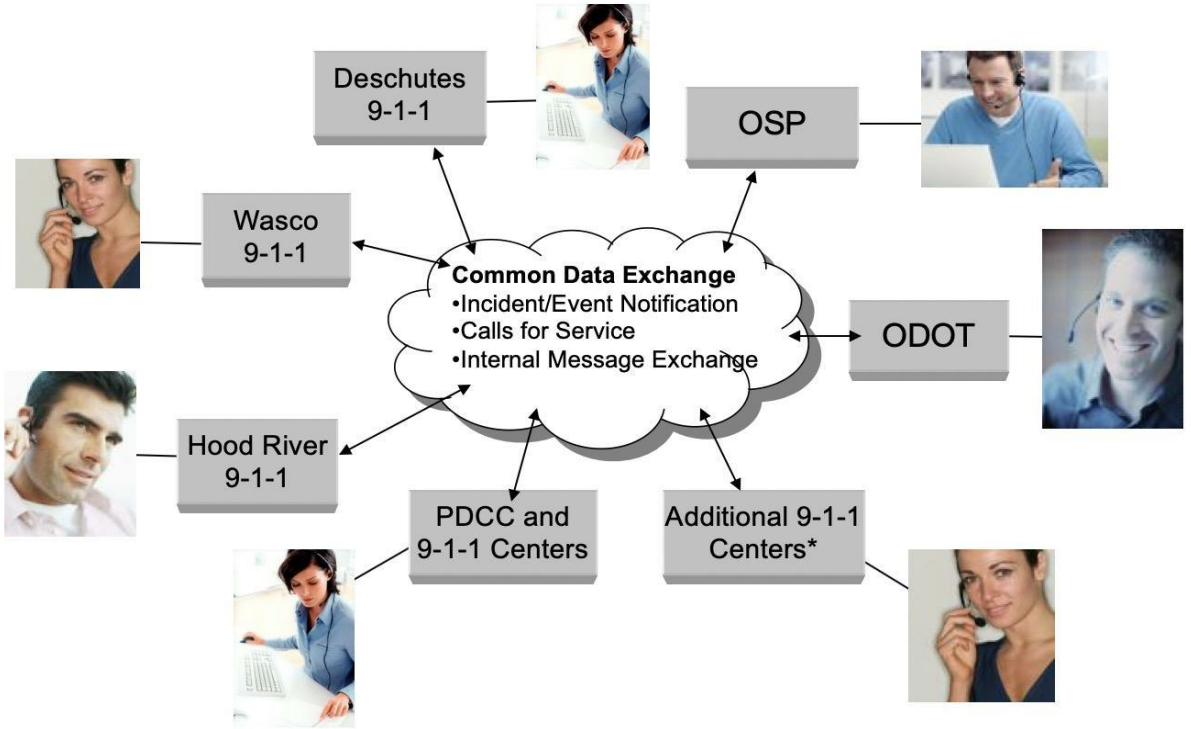
2017 Eclipse - Event Management



I-84 ICM Strategy for Closures

Created By: Brendan Baggett for ODOT

Integrated Deschutes County 911



***Additional Central Oregon 9-1-1 Center Counties:** Crook, Gilliam, Jefferson, Sherman, Wheeler

Other Success Stories

2019 LANDSLIDE ON US20 AT SANTIAM PASS

- **Rerouted truck traffic using VMS**

INCIDENT MANAGEMENT FOR VARIOUS CRASH LOCATIONS

- **Rerouted traffic using VMS**
- **Managed the event with ITS:**
  - TripCheck
  - Cameras
  - Road/weather system
  - iPems travel time information
  - Integrated 911, and more

Other Active Planning Efforts

Other Active Planning Efforts

Completed

- Oregon Statewide TSMO Program Performance Management Plan (2017)
- Oregon Statewide Operations Program Plan (2018)
- ODOT R4 Data Management System (2019)
- Regional 911 Plan/Architecture

Other Active Planning Efforts

Active or Upcoming

- Bend TSP/MTP (2019)
- Traffic Signal Management Plan (2019)
- Mt Bachelor TSMO/Operations Plan (June 2019)
- Potential Corridor Evaluations (US 20, North Corridor, Parkway)
- Transit Applications (STIF Statewide Transit Network Program)

2020 ITS Plan Strategies

Proposed Strategies

TRAFFIC OPERATIONS AND MANAGEMENT:

- Multi-agency transportation and emergency operations center
- Signal Phase and Timing (SPaT) data shared via the internet
- Active traffic management/ variable speeds
- Traffic monitoring cameras
- Integrated corridor management
- Special event traffic plans
- Advanced railroad grade crossing information
- Advanced Transportation Controller (ATC) upgrades
- Automated Signal Performance Measures (ATSPMs)
- Communications infrastructure gap closure
- Intersection safety analytics system
- Technology for bicycle and pedestrian safety, including bicycle detection and counting, and bicycle signal timing
- Accessible pedestrian signals (APS)
- Ramp metering
- Truck signal priority

PUBLIC TRANSPORTATION MANAGEMENT:

- Mobility management
- Transit signal priority
- Flexible park and rides during special events and throughout the summer
- Real-time transit arrival information
- Fleet electrification plan
- Transit pass bundled with other products and electronic payment system enhancements
- Automated passenger counting

TRAVELER INFORMATION:

- Variable message signs
- Regional parking information systems
- En route traveler info with various media (text, 511, etc.)
- Connected vehicles
- Pre-trip information

INCIDENT AND EMERGENCY MANAGEMENT:

- Scenario planning for emergency response
- Strategic planning with signifcant power loss
- Information about roadway constraints on diversion routes
- Rapid response situational awareness capabilities (e.g. drones)
- Centralized emergency vehicle preemption (EVP)
- Evacuation planning, route designation, and enhancements

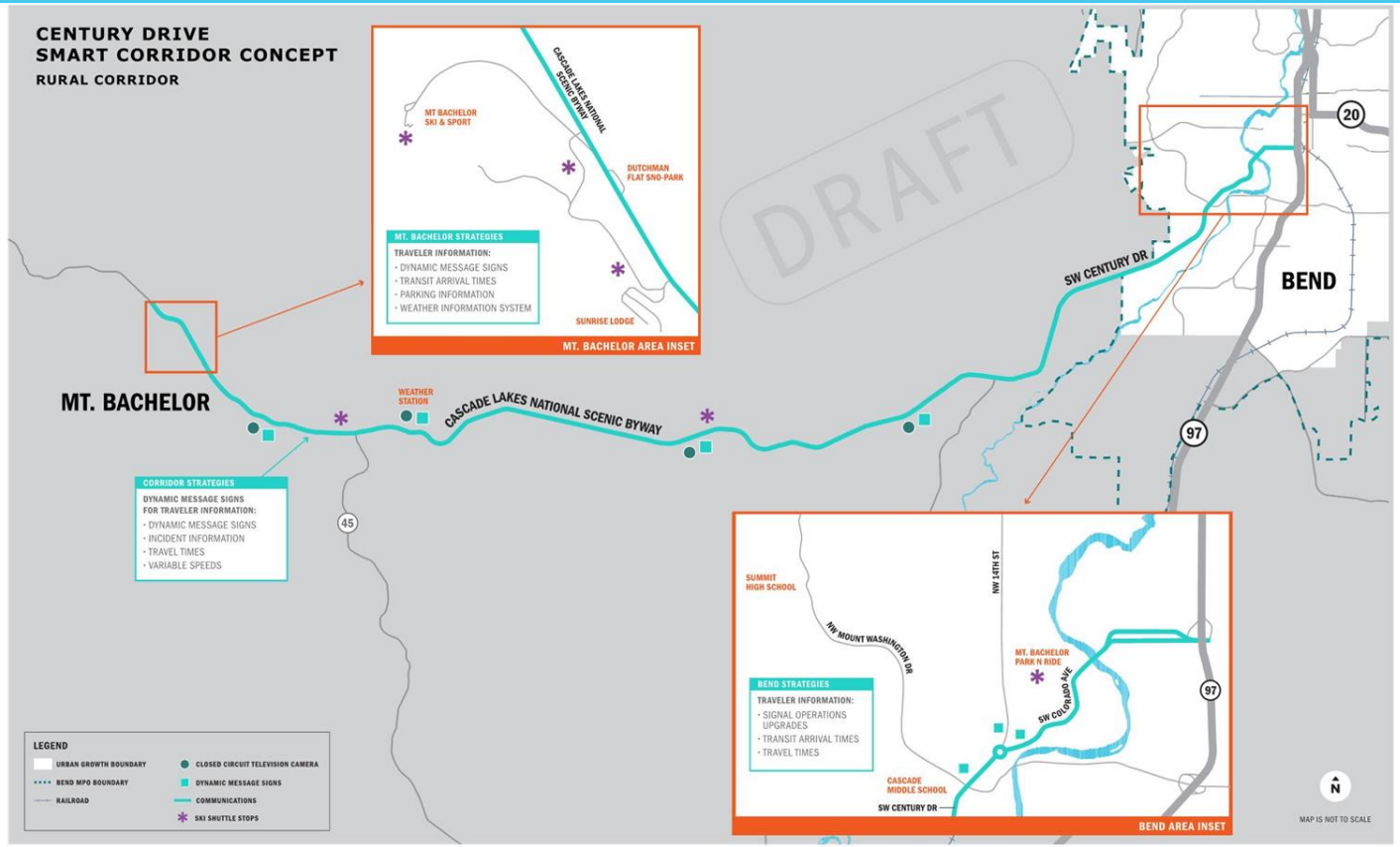
MAINTENANCE AND CONSTRUCTION MANAGEMENT:

- Smart work zone system (en route warnings)
- Regionwide construction work zone and detour management and monitoring
- Infrastructure monitoring technology
- Enhanced snow plow operations
- Winter road status and work zone status information sharing system

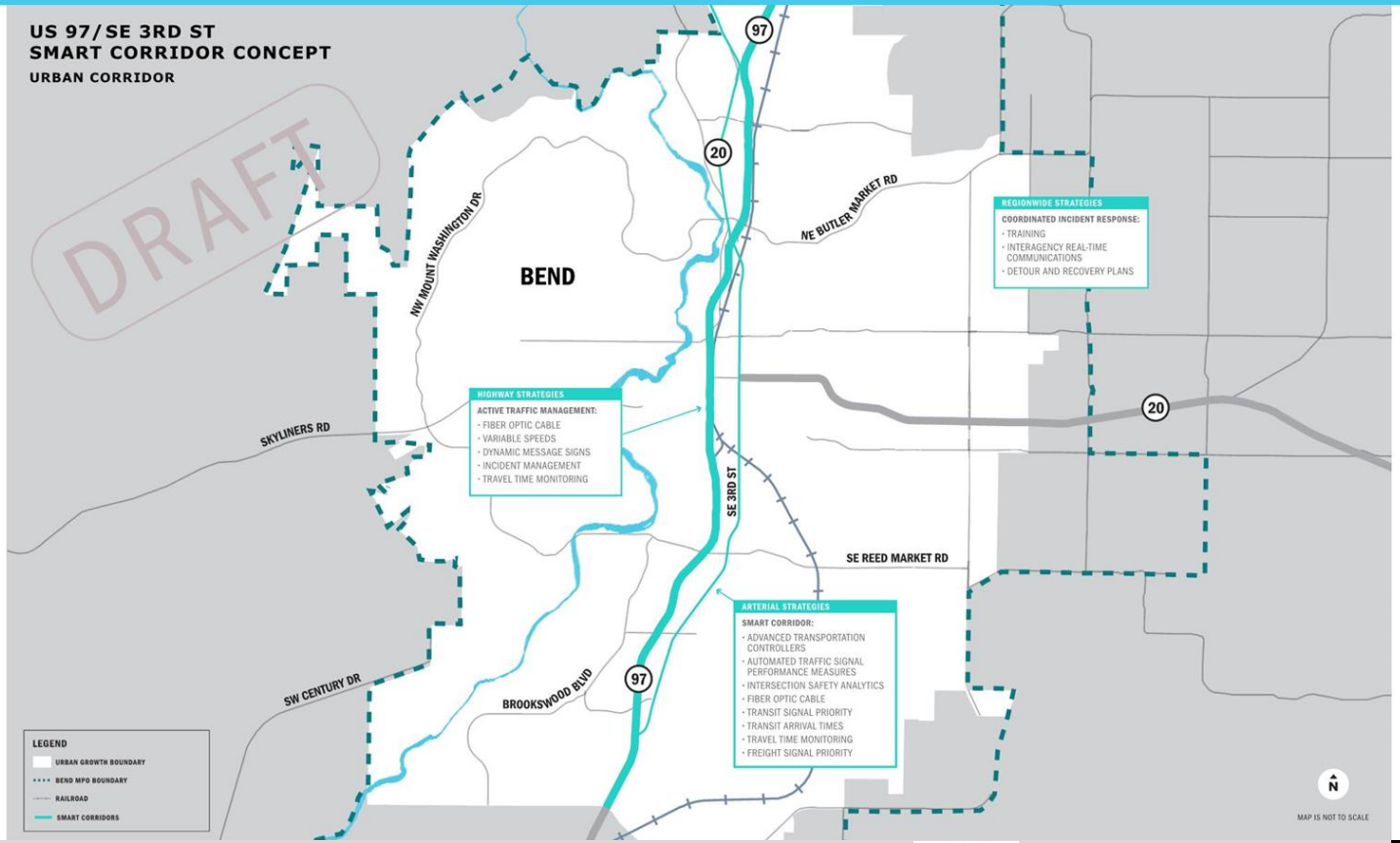
DATA MANAGEMENT AND PERFORMANCE MEASUREMENT:

- Dashboard for regional data warehouse
  - Automated data collection
  - Automated performance reporting
  - Travel time monitoring system
- Open data sharing with statewide clearinghouses
- Open transportation data sharing with regional partner agencies
- Data integration with third-party transportation data providers
- Traffic monitoring video sharing with other agencies

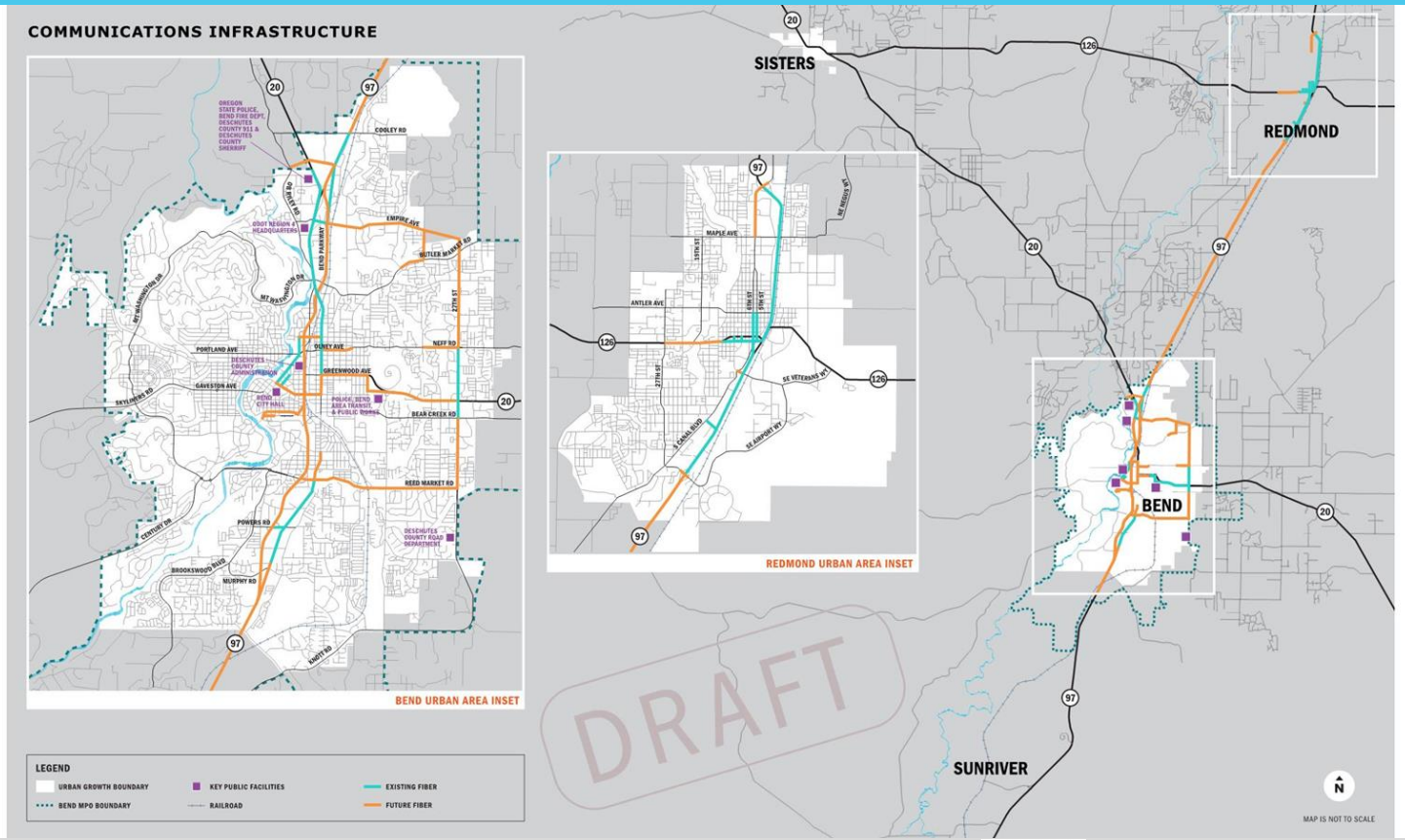
Strategy: Century Drive Corridor



Strategy: US 97 Corridor



Strategy: Communications



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Bend Smart Cities Strategy

SMART CITIES

Credit: Graphic farm/Shutterstock.com

Smart cities:

- Use data and technology to improve the quality of life for residents and visitors
- Treat data as a valuable and strategic asset
- Use performance measures that are focused on measuring benefits to the community
- Have broadband infrastructure that is accessible
- Take a collaborative approach
- Learn from each other

Smart Cities Strategy

Creating a common vision for Bend

Internal

- Define
- Elevate and expand
- Communicate and collaborate

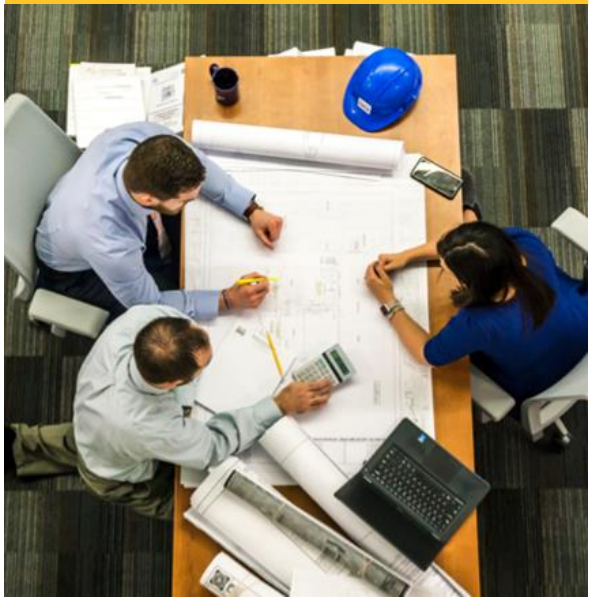
External

- Define
- Explore opportunities
- Communicate and collaborate

Smart Cities Strategies

What Can Public Agencies Do To Get Ready?

PLANNING



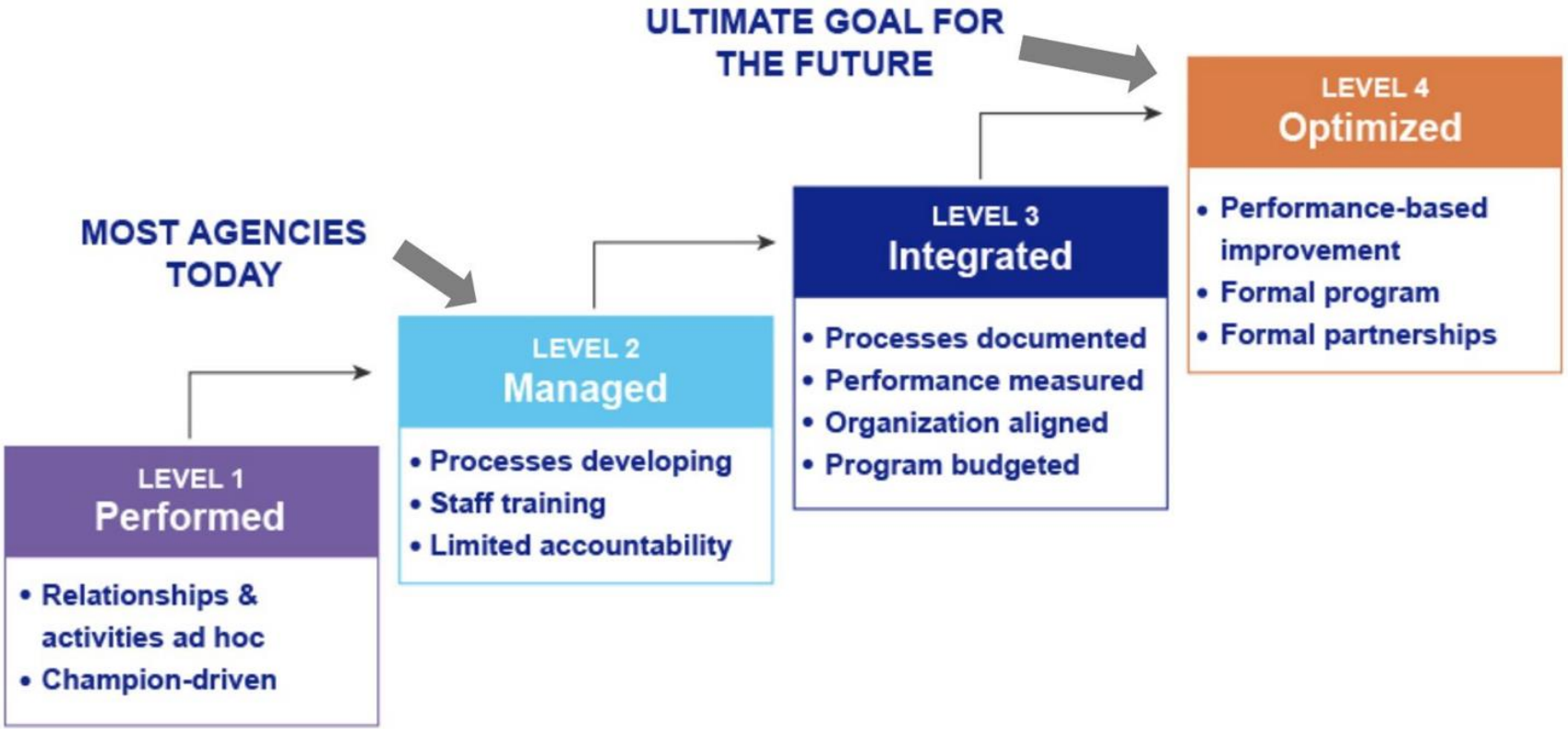
DESIGN

MANAGE

Incorporate TSMO in Planning

Source: Bartz/Stockmar

Mainstream Management & Operations

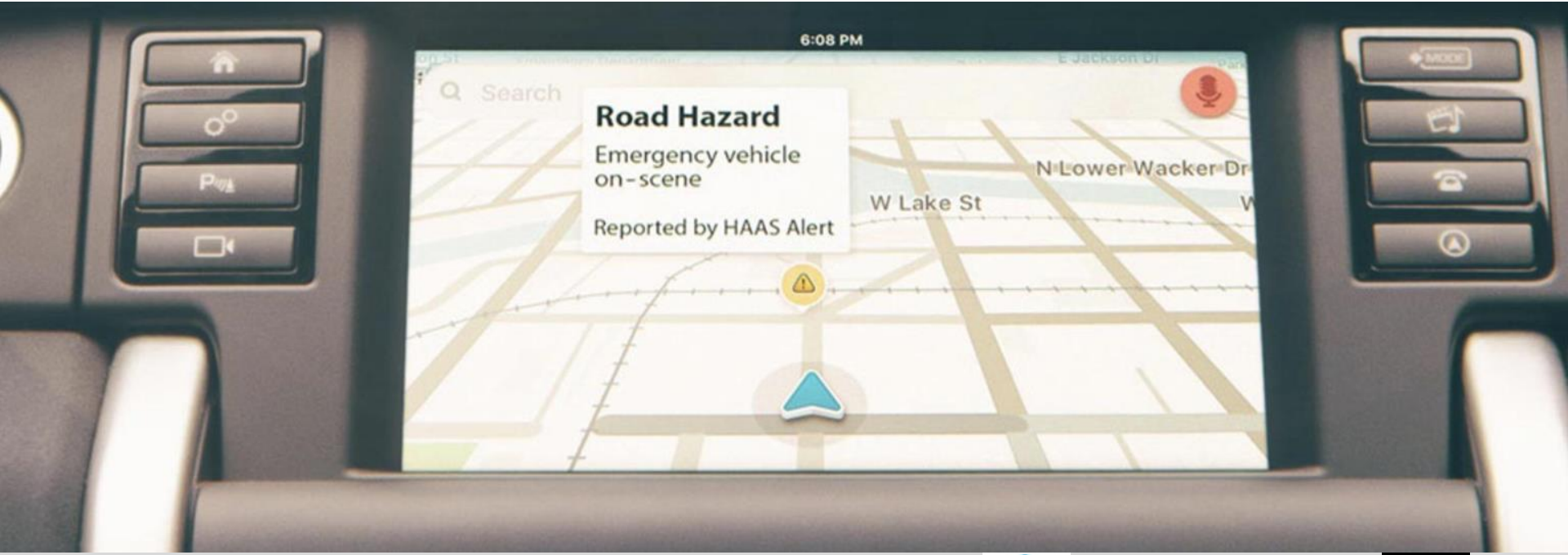


Prepare for Digital Infrastructure

Source: U.S. DOT

Be Opportunistic

HAAS ALERT



Source: Haas Alert

Collaborate with Partner Agencies

Since 2014, Washington County delivered

$17M

in projects for only

$5.6M

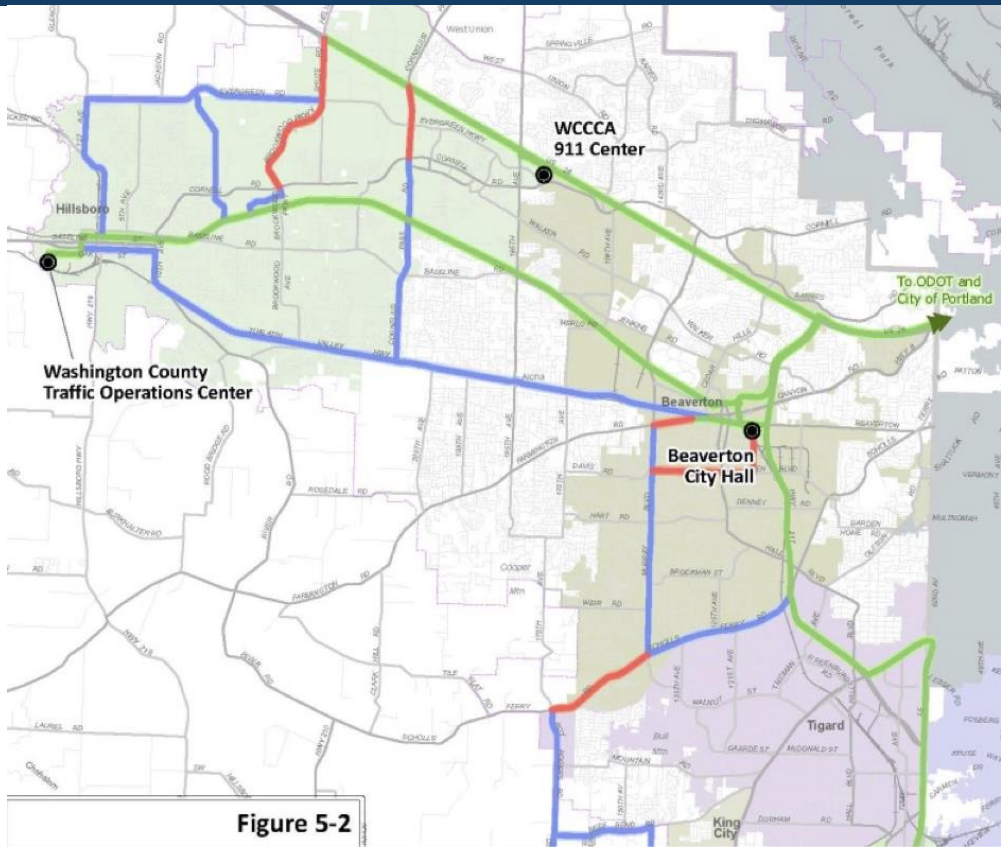


Figure 5-2

Breakout Sessions

Small Groups

1. Multimodal and Emerging Mobility

1. Data: Big Data, Analytics, Dashboards, Warehouse

1. Incident Management, Emergency Response, Resiliency

1. Connected and Autonomous Vehicles

Small Group Questions

- What are the overarching goals and needs to address for this area? I.e., what should relevant concepts and ideas be trying to accomplish?
- What needs to be in place to support/achieve these concepts? Specific policies, agreements, and/or technologies?
- Who are the partners and stakeholders? Potential champions?
- What are the potential Next Steps?

What’s Next?

Key Milestones and Expectations

- **TAC Meeting #3 – January 2020**
  - Review proposed deployment plan

Shaping a smarter transportation experience.™

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