

WHAT DOES TSMO MEAN TO WSDOT AND THE WENATCHEE AREA?

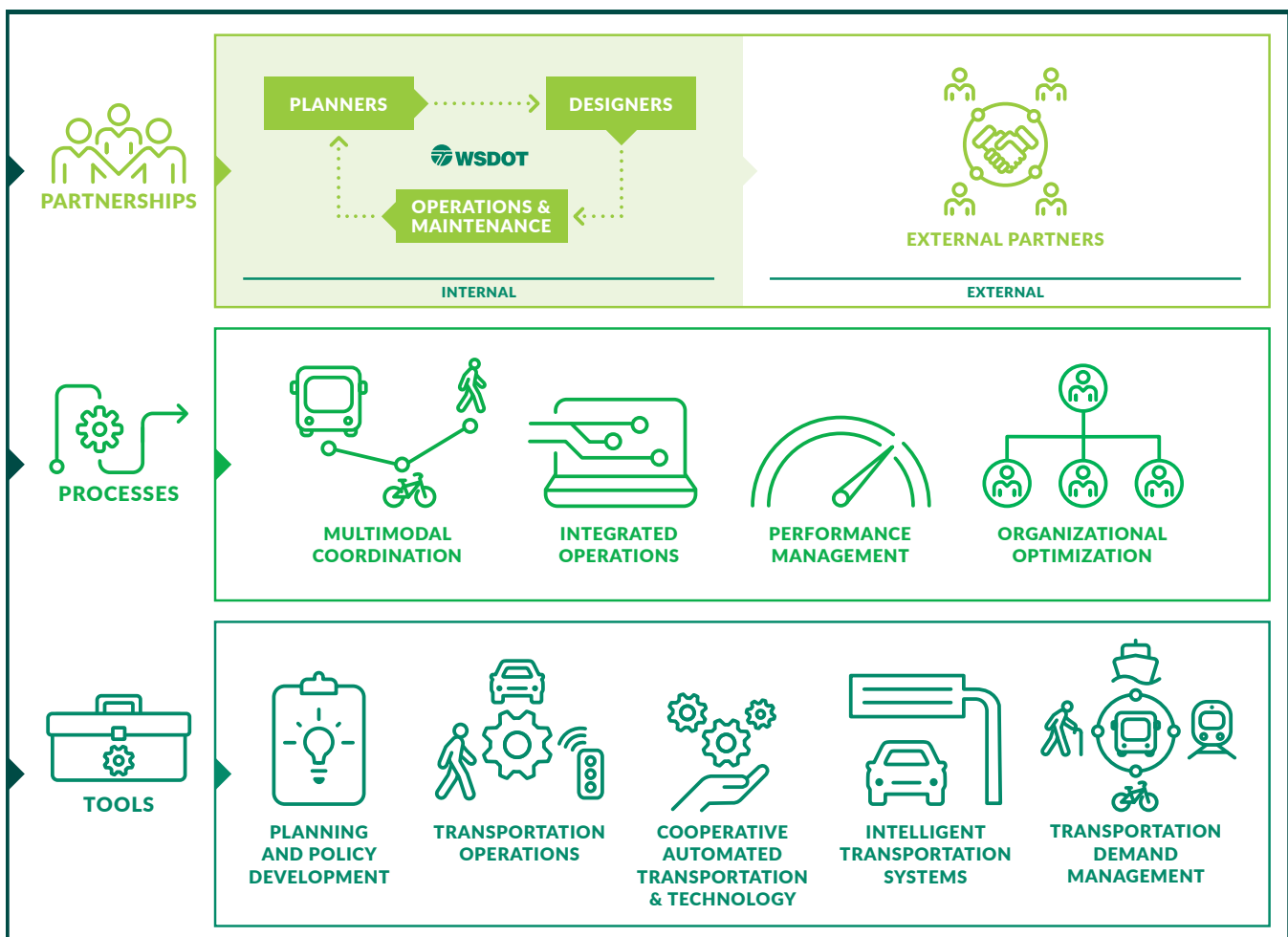
What is TSMO?

"Integrated strategies to optimize the performance of existing infrastructure through the implementation of multimodal and intermodal, cross-jurisdictional systems, services, and projects designed to preserve capacity and improve security, safety, and reliability of the transportation system"

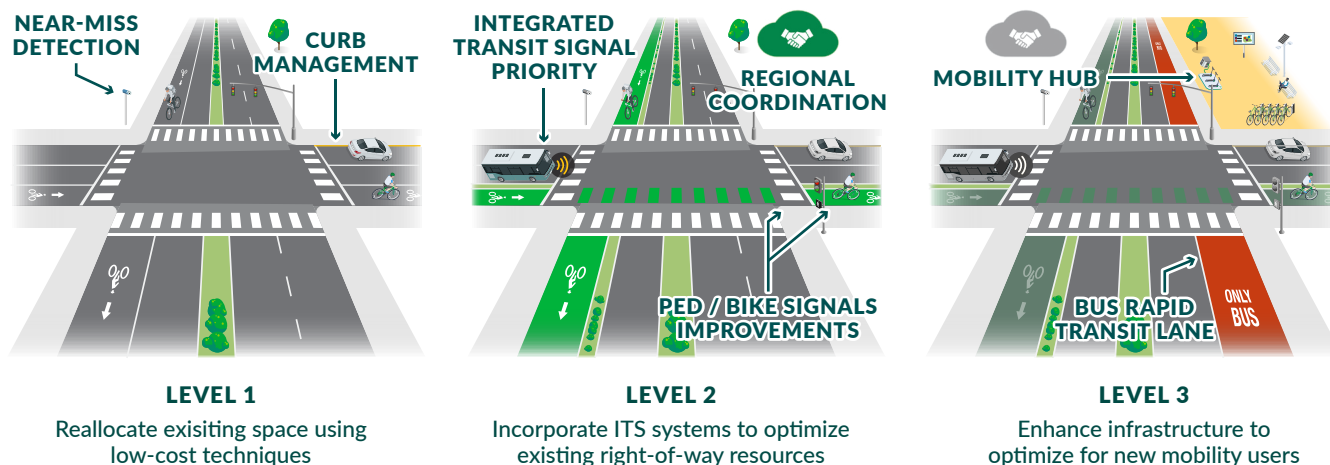
(Federal Legislation "MAP-21")

- Improve multimodal safety and mobility
- Smoother and more reliable flow of people through corridors and intersections
- Align future projects for federal grant opportunities
- Maximize return on funding

TRANSPORTATION SYSTEMS MANAGEMENT & OPERATIONS



EXAMPLES OF TSMO STRATEGIES IN URBAN AREAS AND TOWN CENTERS:



POTENTIAL BENEFITS OF TSMO IMPLEMENTATION¹:

Florida DOT implemented Integrated Corridor Management, including a Regional TMC, TIM teams, real-time (active) signal operations on arterials, and express lanes. This resulted in 8 minute reduction in average incident clearance time, reduced congestion, fewer secondary crashes, fewer fatalities, and over \$42 million saved.



TSMO projects including communications infrastructure, wrong way driver detection and curve departure warning were implemented on I-85/I-40 route in North Carolina. This resulted in travel time reliability savings of \$36 million for a total Benefit/Cost ratio of 2.95.



A cloud-based emergency call-taking platform was found to significantly improve the pinpointing of stranded motorists. The dispatch time was cut from 23 minutes to just 3 minutes as reported by Georgia DOT.



In 2022, Washington's Incident Response Teams provided an estimated \$87.9 million in statewide economic benefit by reducing the effects of incidents on drivers.¹



Based on WSDOT's budget for incident response, every one dollar spent on the statewide program provided drivers at least \$13.60 in economic benefit to the State of Washington during each quarter of 2022.¹

WSDOT worked with the City of Leavenworth to use TSMO tools and strategies to minimize community impact due to the Christmas Lighting Festival. WSDOT implemented **ITS technology such as pedestrian signals, operational strategies such as portable VMS signs, remote signal pre-emption and signal coordination, and tools to improve situational awareness such as establishing Incident Command post with WSDOT, City, and emergency services.** During the first three weeks of December, on average, 3,500 more vehicles per day were accommodated and able to experience the festival. During high demand times, the adaptive traffic control system would hold the pedestrian crossing phases for up to four minutes each cycle allowing for safe and efficient pedestrian movements.

¹ WSDOT Gray Notebook, 2022 – 2023 Quarter 1

² Washington Incident Tracking System

TSMO Approaches

Complete Streets Approach

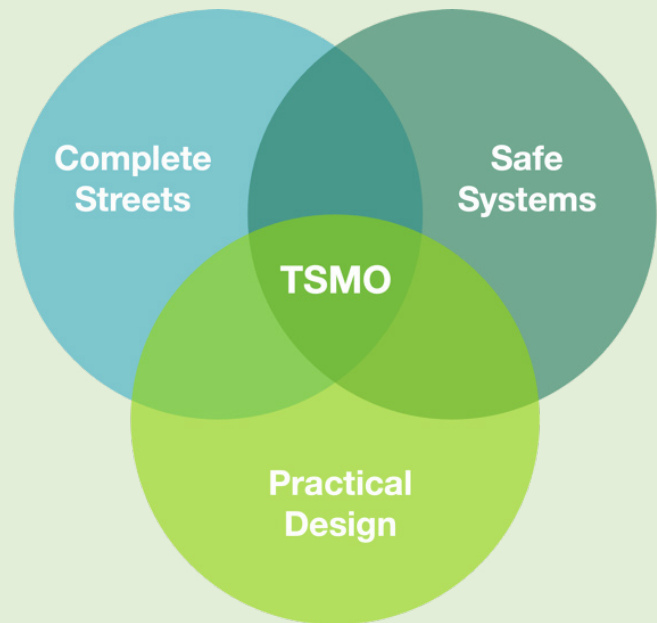
- Design transportation networks for all modes, including pedestrians, bicyclists, transit riders, and motorists

Safe System Approach

- Identify locations where there is potential for crashes and proactively improve conditions to minimize harm

Practical Design Approach

- Use appropriate performance metrics, stakeholder input, and agency risk management practices to identify and design efficient solutions



TSMO Strategies

Integrated Corridor Management

- Use multimodal vision to manage corridors

Traffic Incident & Event Management

- Detect, respond to, and clear incidents to restore traffic flow
- Improve communication and collaboration with emergency service providers during major events such as bridge closures

Active Traffic Management

- Reduce incidents related to congestion and blocked lane using overhead electronic signs and other tools

Work Zone Management

- Manage traffic during construction to minimize delays, and maintain driver and worker safety

Smart Mobility

- Use technology and innovation to manage the transportation network

Road & Weather Management

- Improve operational performance and traveler information during winter weather events

Existing & Programmed Investments

Major Planned Projects in the Wenatchee area:

CONFLUENCE PARKWAY

Create a north/south route connection, add a bridge for pedestrians, bicyclists, and motorists across Wenatchee River, remove existing bridge; improve safety for pedestrians, bicyclists, and transit operations

SR 285/N WENATCHEE AVE

Install ITS improvements such as transit queue jumps and upgraded signal controllers, add access control curbing, construct sidewalk improvements

SR 28/SUNSET HIGHWAY SAFETY IMPROVEMENTS

Build multilane roundabouts at several intersections, widen SR 28 to construct sidewalks and bike lanes, enhance pedestrian/bicyclist connection to the Apple Capital Loop Trail

MCKITTRICK ST/ BNSF UNDERPASS

Add a new traffic signal at North Wenatchee Ave and McKittrick St, extend McKittrick St East under BNSF railroad tracks

SOUTH END BIKE/ PEDESTRIAN ACCESS BRIDGES

Add pedestrian bridges west of and east of the Columbia River to provide a pedestrian/bicyclist route separate from motor vehicles

US 2/97 EASY ST ROUNDAABOUT

Construct multilane roundabout with transit pullouts and pedestrian crossings

STAKEHOLDERS



Wenatchee Area Map



Scenarios and Needs That WSDOT Should Consider

Consider avenues to engage project partners on existing use cases:



Filling the Gaps and Future Visioning

Opportunities to include TSMO in programmed projects:

- Connect pedestrian and bicyclist routes with protected crossings
- Extend fiber network to connect agencies and field devices
- Hold meetings across different project teams to discuss connection points and manage overlapping work zone impacts
- Create interagency agreements to improve coordination between agencies
- Provide traveler information via overhead VMS signs
- Install cameras at high incident areas (e.g. bridges)
- Consider integrated corridor management strategies and operational improvements including incident and event based timing plans for WSDOT and local signals
- Incorporate Advance Traffic Controller (e.g. Automated Traffic Signal Performance Measures) at signalized intersections

Next Steps & Opportunities

As WSDOT receives buy in from project partners, WSDOT can advance TSMO in the areas of planning, project development and maintenance and operations in the following ways:

PLANNING

PROBLEM IDENTIFICATION:

Identify problems that can be addressed by TSMO solutions (such as bottlenecks) in the planning process

SCOPING:

Ensure TSMO and ITS elements are included in project scope

GRANT OPPORTUNITIES:

Consider which TSMO programs and projects are competitive for IJJA competitive grant opportunities including PROTECT, ATTAIN, SS4A Demonstration and Supplemental Planning and SMART

PERFORMANCE METRICS:

Ensure performance metrics are appropriate for evaluating TSMO projects

PROGRAMMING

FUNDING TSMO:

Evaluate approach to selecting and funding TSMO projects including maintenance and operations

CONSIDER:

- TSMO funding set aside: Set aside funding for TSMO projects such that a portion of funding is restricted and spent on TSMO projects or TSMO elements in other projects
- TSMO projects compete with other types of projects for funding. The merits of each project are evaluated using criteria that address broad transportation needs such as the performance metrics developed in the planning column
- Hybrid Approach: A combination of set aside funding for some types of projects, but TSMO projects can compete for other funding. For example, a roundabout is a TSMO solution that could also compete for safety funds

MAINTENANCE & OPERATIONS

INTERAGENCY AGREEMENTS:

Develop agreements on how the transportation network can be mutually operated

- Shared WSDOT and City of Wenatchee TMC
- Shared signal operation and maintenance agreements
- Detour agreements
- Mutual Aid for maintenance resources during emergencies

LOW-COST IMPROVEMENTS:

Improvements that can be done using existing budgets and existing resources

- Traffic Incident Management Teams
- Joint Agency Emergency Planning
- Restriping
- Signal Retiming