

Special & Planned Event Management



TRANSPORTATION SYSTEMS MANAGEMENT & OPERATIONS TOOLS

Transportation Systems Management & Operations, or TSMO, focuses on cost-effective strategies that prioritize the safety, access, and reliability of the multimodal transportation system.



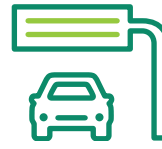
PLANNING AND POLICY DEVELOPMENT



TRANSPORTATION OPERATIONS



COOPERATIVE AUTOMATED TRANSPORTATION & TECHNOLOGY



INTELLIGENT TRANSPORTATION SYSTEMS (ITS)



TRANSPORTATION DEMAND MANAGEMENT

Transportation Operations focuses on moving people and goods safely and efficiently. Coordinated signalized pedestrian crossings is a multimodal operations strategy for corridor traffic management.

ITS refers to the integration of advanced communications technology into the transportation infrastructure, like adaptive signal timing, that enhances mobility and safety across all modes.

Transportation Demand Management influences traveler choices with the goal of reducing or mitigating congestion causing events.

Why use ITS with Special & Planned Event Management?

A special or planned event generates a significant increase in pedestrian and vehicle demand within a short period of time, negatively impacting operations throughout the transportation system. Special & Planned Event Management is a coordinated approach to understand the characteristics of the event, assess how the event will affect transportation operations, and develop a response plan to manage and mitigate event impacts on the transportation system.

BENEFITS:

- Improve relationships with partners and increase collaboration
- Incremental approach to problem solving with technology
- Congestion and demand management
- A multimodal and interagency partnership approach directly affecting communities
- Positive community relations
- Pedestrian safety
- Multimodal mobility



Event Coordination Center

Case Study

Leavenworth's Pedestrian Crossing Improvements • Leavenworth, Washington

The Christmas Lighting Festival in downtown Leavenworth takes place the first three weekends in December. The 2018 event generated significant backups along US 2 of up to four miles at peak visiting times impacting the Leavenworth community. The highest amount of vehicle and pedestrian volumes occurred during the first night of the Lighting Festival known as the “Flip the Switch” ceremony when there were high volumes of pedestrians rushing across US 2 to observe the lights being turned on.

This case study summarizes the TSMO coordination and technology strategies that were made incrementally and intentionally from 2018 through 2021 to minimize community impacts.

THE PROBLEM:

The Christmas Lighting Festival generated a considerable amount of pedestrian, vehicle, and event traffic that affect Leavenworth residents and vehicles passing through US 2 that are not attending the event.

Pedestrians: Increased pedestrian volumes led to unsafe movements such as crossing US 2 at unprotected locations. The constant stream of pedestrians walking also resulted in conflicts with vehicles trying to find parking or travel through the downtown area.

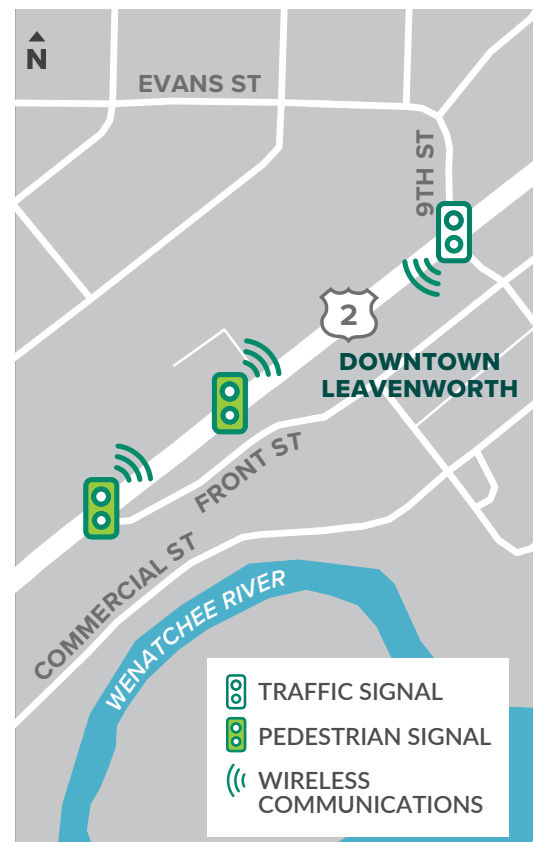
Vehicle Delay: Difficulty finding parking, long traffic queues, and bus loading and unloading contributed to the overall delay across US 2.

Emergency Response Preparedness: The combination of high pedestrian volumes and delays in traffic increased the potential for secondary crashes, increased response times, and limited situational awareness throughout all parts of the event.

TSMO Implementation Details:

A partnership with the city of Leavenworth, Washington State Patrol, and WSDOT allowed for joint exploration of ITS technology, operations, and demand management solutions that crossed jurisdictions.

The table on the following page shows the incremental changes made to continuously observe and improve the performance through this stretch of roadway for pedestrians, traffic operations, situational awareness, and TSMO planning. Signal performance measures were used to help the transportation engineers identify operational strategies.



	2018	2019	2020	2021
ITS TECHNOLOGY	Added protected crossings with Rectangular Rapid Flashing Beacons (RRFB)	Upgraded RRFBs to High Intensity Activated CrossWalk (HAWK) beacons	Upgrade HAWK beacons to pedestrian signals	Pedestrian signals in operation
OPERATIONAL STRATEGIES	Flagger control, social media, travel alerts, portable VMS signs	Remote signal pre-emption to flush traffic. Improved signal controls/camera feeds	Pedestrian crossing and signal coordination	Responsive signal control
SITUATIONAL AWARENESS	Radio communications for signals in place	Camera feeds, real-time data, established Incident Command post with WSDOT, City, and emergency services	Installed updated detection and added additional camera	Improved processes and communications
TRANSPORTATION DEMAND MANAGEMENT			Discontinued the "Flip the Switch" ceremony	

Results, Benefits, and Lessons Learned

The project partners came together and found success by:

- Mutually contributing to deployment cost
- Setting clear roles & responsibilities
- Sharing the goal to improve operational conditions for the Leavenworth community

The partners evaluated, identified, improved, monitored performance, and continued to make improvements to address event challenges while also making it safe and enjoyable for all visitors.

LESSONS LEARNED INCLUDE:

- Installation of hardwired control equipment is recommended as solar power supported by batteries do not perform well during colder, winter months.
- Coordinated pedestrian signals with a signalized intersection reduced delay for vehicles along the corridor while maintaining ample crossing time for pedestrians.

MULTIMODAL MOBILITY IMPROVEMENT TRENDS:

+3,500

DURING THE FIRST THREE WEEKS OF DECEMBER, ON AVERAGE, 3,500 MORE VEHICLES PER DAY WERE ACCOMMODATED AND ABLE TO EXPERIENCE THE FESTIVAL

4 MINUTES



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.

ADDED BENEFIT: THE IMPROVEMENTS MADE ALSO IMPROVE OPERATIONS DURING HIGH TOURISM PERIODS AND REROUTES DUE TO PASS CLOSURES.

QUESTIONS? CONTACT:

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TO LEARN MORE ABOUT TSMO VISIT: <https://tsmowa.org>