NOCoE
National Operations Center of Excellence

CASE STUDY

REGIONAL OPERATIONS PLANS

By Pennsylvania Department of Transportation

IN THIS CASE STUDY YOU WILL LEARN:

1. How Regional Operations Plans were developed with cooperation with stakeholders including MPOs and RPOs, FHWA, PennDOT Central Office & District Planning & Programming staff, PennDOT District Safety, Design, and Construction Engineers, PennDOT County Maintenance Departments, the Pennsylvania Turnpike Commission, as well as local emergency responders, transit agencies, universities, and the local National Weather Service office.
2. How the Regional Operations Plans play an important role in regional Long-Range Transportation Plan (LRTP) and Transportation Improvement Plan (TIP) processes by helping to secure future capital funding for projects incorporating TSMO solution.
3. How using a wide range of stakeholders for the Plans resulted in strong relationships with planning partners and buy- in and funding support.

BACKGROUND

To integrate Transportation Systems Management & Operations (TSMO) solutions into the project planning process, PennDOT recognized the need to develop comprehensive and current Regional Operations Plans (ROPs) to align with each of the four Regional Traffic Management Centers (RTMC). The ROPs play an important role in regional Long-Range Transportation Plan (LRTP) and Transportation Improvement Plan (TIP) processes by helping to secure future capital funding for projects incorporating TSMO solutions. Existing Intelligent Transportation Systems (ITS) and Operations infrastructure, needs, vision and goals were identified to ultimately prioritize future operations-focused projects and performance measures in harmony with regional, state, and federal policies.

The PennDOT Central Office (CO) Team led the development of the ROP documents across the Commonwealth, which address reliability, mobility, and congestion through prioritized documents of potential projects and initiatives related to traffic operations and ITS. The Central RTMC ROP was the first of four plans to follow the PennDOT TSMO Strategic Framework, beginning in January 2018. ROPs for the Western and Eastern RTMC Regions have also been completed as of November 2020. The final ROP for the Southeastern RTMC Region is scheduled to be completed in 2021.

TSMO PLANNING, STRATEGIES AND DEPLOYMENT

The TSMO Program in Pennsylvania consists of three major elements: TSMO Strategic Framework, TSMO Program Plan (and associated Action Plan), and the TSMO Guidebook. TSMO Strategic Framework is designed to make the case for TSMO in Pennsylvania to improve mobility and reliability, safety, and funding dedicated to operations. This document is intended to be used by PennDOT in Planning Organizations, and also with stakeholders, but should also be used as a public- facing tool to increase awareness on the benefits of TSMO. Each

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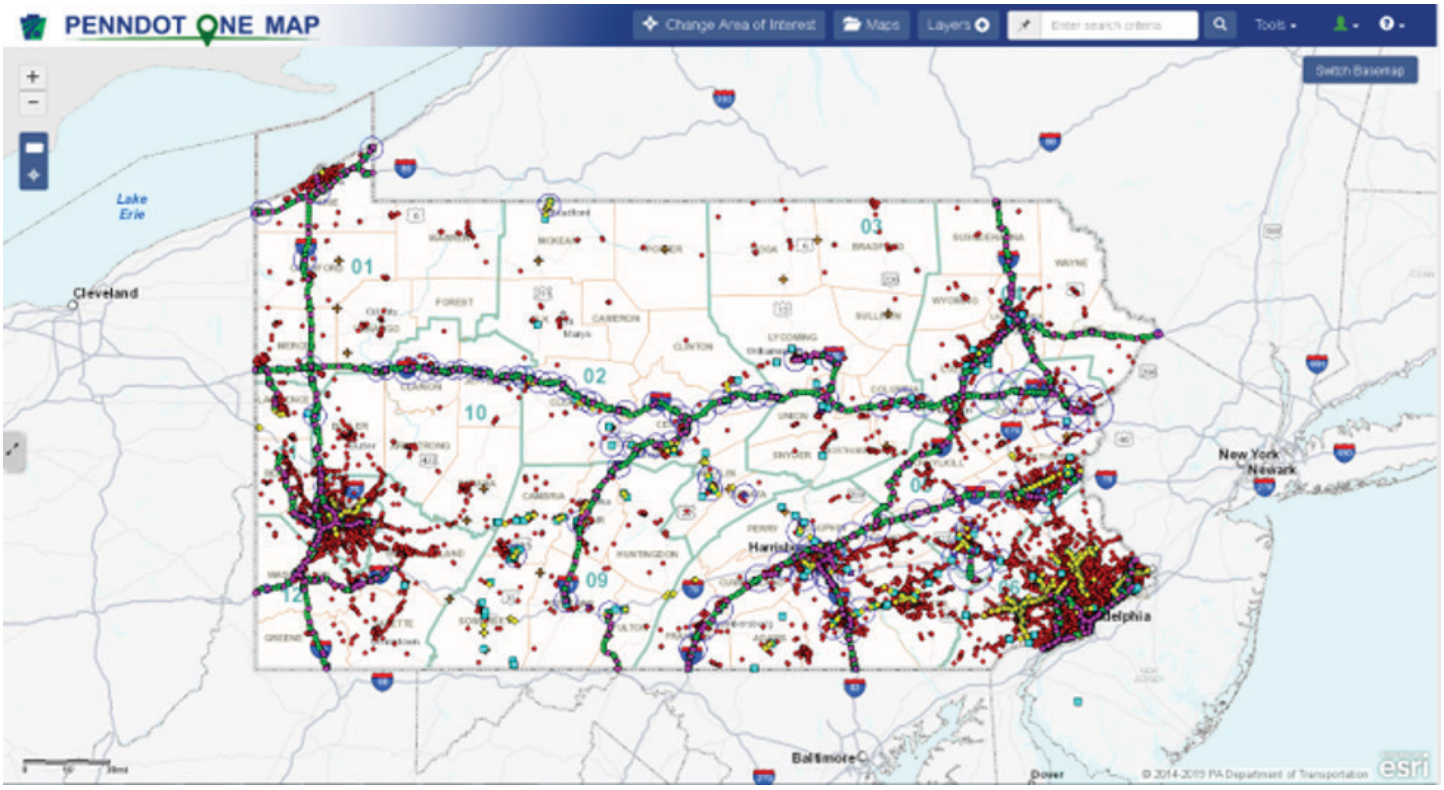

page of this document was designed so that it could be used as a standalone fact sheet.

The approach is based on needs, strategies, and actions that were created during stakeholder outreach and are specific to the development and advancement of the TSMO program in Pennsylvania. The TSMO Program Plan also includes an Action Plan to advance each Capability Maturity Model (CMM) dimension by delegating responsibilities to the PennDOT Business Areas. The plan also identifies what dimension it will advance, dependencies with other strategies, and a listing of additional resources needed to accomplish the strategy/action. This document is intended to be used by PennDOT CO and Districts to help identify what actions are necessary from business areas and PennDOT Units to advance the CMM.
TSMO Guidebook Part I: Planning, seeks to strengthen and provide a clear connection between planning processes such as the Congestion Management Process (CMP), LRTP, ROPs, and the TIP. Both standalone TSMO projects as well as the implementation of TSMO solutions in other projects will benefit from a strong connection to the TIP, and, as a result, can be prioritized during project planning. The audience of this document includes the professionals responsible for transportation planning and operations within the state working for or on behalf of PennDOT, MPOs, RPOs, or local municipalities. It is intended that these stakeholders use this guidance document throughout the development and implementation of their transportation operations plans and programs.

COMMUNICATIONS PLANNING AND EXECUTION

The ROPs included an extensive stakeholder process with three rounds of meetings in each of the PennDOT Districts located in the corresponding RTMC Region. A wide- ranging group of stakeholders were involved, including the MPOs and RPOs, FHWA, PennDOT CO & District Planning & Programming staff, PennDOT District Safety, Design, and Construction Engineers, PennDOT County Maintenance Departments, the Pennsylvania Turnpike Commission, as well as local emergency responders, transit agencies, universities, and the local National Weather Service office.

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The goals of each round of meetings were as follows:

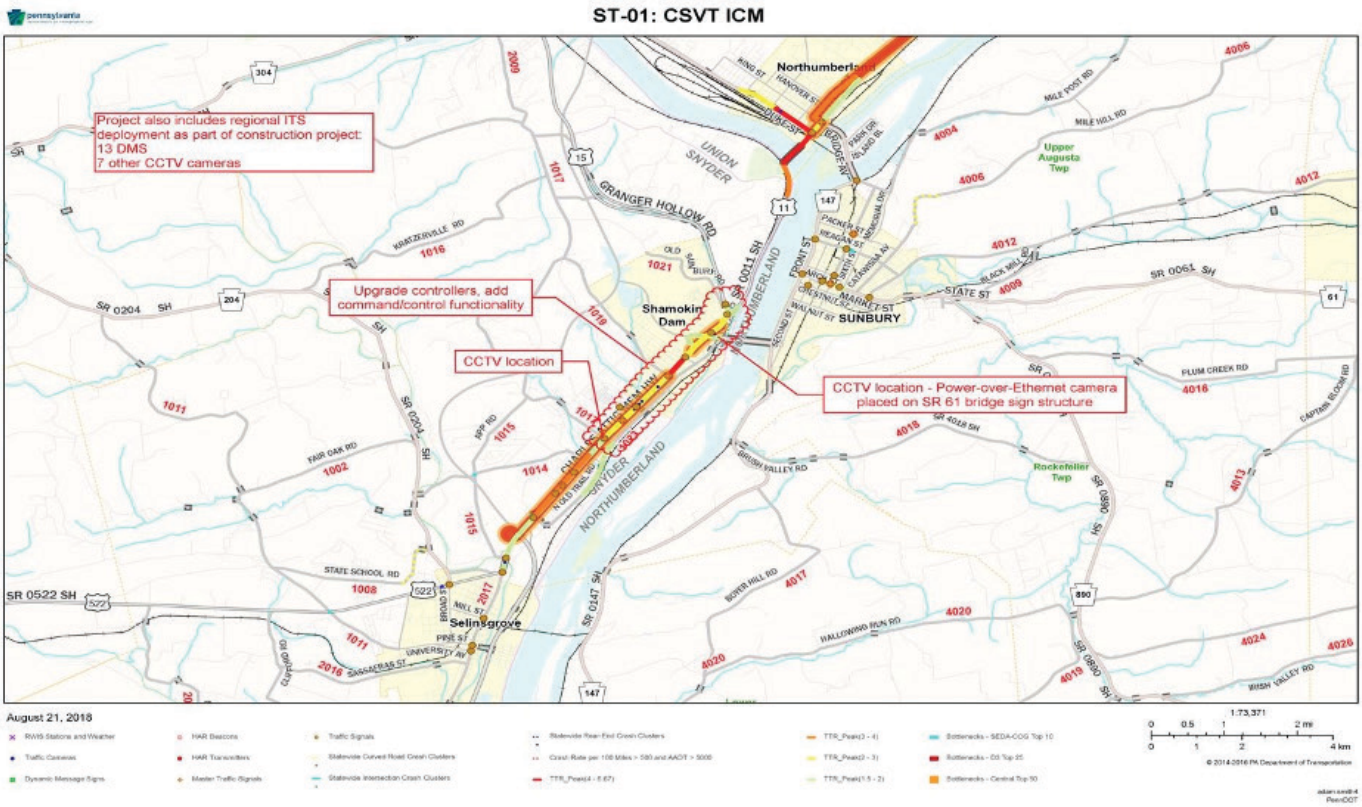
1. Discuss focus topics and needs in transportation
2. Discuss potential TSMO strategies to mitigates these issues
3. Develop projects based on these issues/strategies

A steering committee was also utilized to guide the process and assist with overarching priorities for the region. This group included the PennDOT Bureau of Maintenance and Operations (BOMO), the PennDOT Districts, the FHWA Pennsylvania Division, and representation from the MPOs/RPOs. In addition to stakeholder feedback, much of the ROP process was guided by data. PennDOT recently released a publicly facing website, OneMap, which provides extensive data on the region's operations through a GIS- based interface. This was used to pinpoint the existing congestion and safety issues to discuss during the first round of stakeholder meetings. Later, the determined project focus areas could be analyzed in more detail to determine the most applicable TSMO strategies. In the future, this data can be used as a benchmark to measure effectiveness of the projects once implemented.

OUTCOME, LEARNINGS AND PUBLIC BENEFIT

To date, 193 projects have been included in the ROP documents. These include Integrated Corridor Management (ICM) projects which seek to improve incident management and maximize use of available capacity on important parallel corridors, particularly to the Interstates, and safety-related TSMO projects including Dynamic Curve Warning systems, and Queue Warning systems. Projects were prioritized on three categories: Comparative Need, Regional Impact, and Expected Benefit. Need was based on congestion and crash cluster data available on the PennDOT One Map website. Regional Impact utilized the TSMO Roadway Tiering system to quantify regional importance and impact of each project roadway.

Finally, the benefit was developed as a qualitative measurement, based on a review of available TSMO benefit guidance, such as the Crash Modification Factor (CMF) Clearinghouse. The completed ROP will play an important role in regional long- range planning by helping to secure



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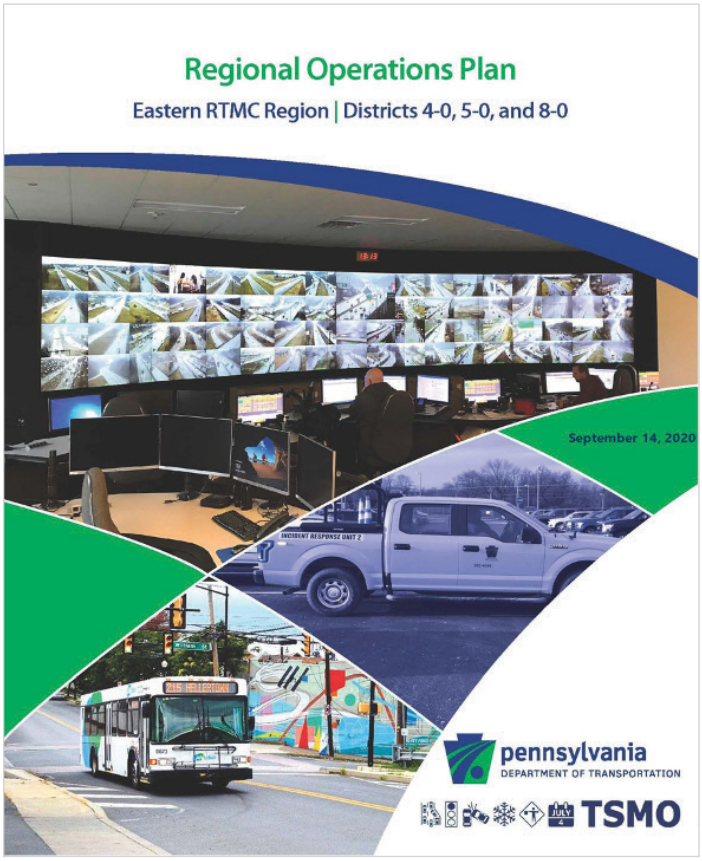
future capital funding for projects incorporating TSMO solutions. This will lead to more cost- effective, beneficial transportation improvements which will provide greater benefit to the safety and mobility of the region's residents and visitors. In addition to the numerous projects that have been identified in each of the ROPs, the creation of the TSMO Funding Initiative (TFI) was one of the highlights of the entire effort. The TFI was established with the cooperation of the PennDOT Center for Program Development and Management as a means to provide matched funding to regional projects that focused on TSMO solutions. This program dedicates $10M over a 2-year cycle, and since the first round of applicants were selected in 2019, the applications for qualified TSMO projects have nearly tripled.



As each region's ROP was completed, the team identified lessons learned to carry forward for the development of the ROP for the next RTMC region in the state. Chief among them was to increase focus on other modes of transportation such as rail, transit, bicycle, and pedestrians. As the TSMO philosophy is centered around maximizing available capacity, it is vital to provide improvements for more efficient modes than passenger vehicles.

Other lessons included the importance of broad and diverse stakeholder groups, particularly when determining the operational issues of the region and gaining executive buy- in from the inception to ensure organizational support. Building strong relationships with planning partners also helps with buy- in and funding support so that the identified projects and their respective benefits can be realized and implemented moving forward. As the ROPs have gained credibility, so has the request from various MPOs/RPOs to present on the importance of the ROP for their region.