Although maintenance and operations services in Michigan have taken place since the 1950s, Michigan Department of Transportation (MDOT) efforts to advance Transportation Systems Management and Operations (TSMO) formally started in 2013 when MDOT hosted statewide training on the TSMO Capability Maturity Model (CMM) via the FHWA Second Strategic Highway Research Program (SHRP 2). This workshop was an important milestone and resulted in a series of initial actions to advance TSMO in the state, which included increasing TSMO awareness and understanding both internally and externally through outreach and communications. Following the CMM workshop, initial outreach efforts included meeting with the Michigan Transportation Planning Association (MTPA) to raise awareness of TSMO within the planning community and holding a second Detroit Metro-specific CMM workshop hosted by the Southeast Michigan Transportation Operations Center (SEMTOC) in 2015.

These initial efforts helped solidify a strong foundation for TSMO in Michigan and identify a core group of TSMO champions, including several in senior leadership roles at MDOT. With this momentum in 2015, MDOT began to develop five TSMO business cases tailored to key stakeholder groups, which drove the MDOT TSMO Implementation and Strategic Plan.

**TSMO Planning, Strategies, and Deployment**

MDOT identified five key stakeholder groups as the primary audience for the five TSMO business cases and outreach: 1) the public, 2) state legislators, 3) transportation partners, 4) MDOT senior management and leadership, and 5) MDOT technical staff.

A two-step approach was employed in the development of these five TSMO business cases. First, MDOT identified the content and messages that would be consistent across all the business cases. This included conducting research into the benefits and costs of TSMO strategies, documenting the range of existing and planned TSMO activities across Michigan and collecting input from MDOT staff across the agency on the best content and messaging for the business cases. Second, MDOT tailored this content to use readily understandable language, relevant examples, and varying levels of detail to best meet the needs of each audience.

For example, the business case for the public was a one pager with infographics to engage as many people as possible. For the public, acronyms
and industry jargon were avoided and TSMO improvements were discussed in terms of services (e.g., traveler information or freeway service patrol services) and outcomes (e.g., improved traffic conditions). On the other hand, the business case for MDOT technical staff was four pages, and provided both more technical details and discussions on how MDOT was advancing TSMO programs within the agency and state. This business case highlighted the importance of TSMO to the work of every MDOT employee and the overall strategic direction of MDOT. Tailoring the business case to each unique audience promoted both a broader understanding of TSMO and underlines the key message that TSMO is for the benefit of everyone.

COMMUNICATIONS PLANNING AND EXECUTION
The five MDOT TSMO business cases were developed in conjunction with the MDOT TSMO Implementation and Strategic Plan and were informed through robust outreach efforts. This outreach included a three-day MDOT TSMO workshop in the early stages of both efforts (that engaged over 60 MDOT staff from across the agency to identify priority actions for the TSMO program and to build consensus for the TSMO strategic direction. Finally, MDOT communications staff provided significant input and graphics support, and helped make the business cases engaging outreach and education tools.

OUTCOME, BENEFIT AND LEARNINGS
Both the five TSMO business cases and the TSMO Implementation and Strategic Plan were published in early 2018 and are available on the MDOT website at www.michigan.gov/tsmo. Since being published, the business cases have reached a large number of people and have been circulated broadly within the national community of TSMO practitioners.

As expected, there was a significantly larger number of views during the first month of publication (808 views), then tapered off to a lower but stable number of monthly views. The TSMO business cases and associated outreach was a commonality area identified within the MDOT TSMO Implementation and Strategic Plan for continued action. MDOT recently held a TSMO Plan Maintenance Workshop in October 2018, in which participants shared plans to evaluate the initial usage of the business cases and further promote them as a tool for outreach and education to diverse stakeholders across the department and the state. The implementation of the TSMO business cases will be a focus for continual improvement in Michigan to support efforts in Michigan to improve transportation safety, reliability, and efficiency.

FURTHER INFORMATION
NOCoE Knowledge Center: https://transportationops.org/knowledge-center
https://www.michigan.gov/tsmo