

AASHTO

Transportation Operations Manual

First Edition



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AASHTO

Transportation Operations Manual

1st Edition

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Preface

Introduction

The *Transportation Operations Manual*, first edition (2023), commonly called the TOM, provides a holistic view of transportation system management and operations (TSMO) and encompasses a broad range of topics and tactics that exist within this discipline. Its ultimate goal is to serve as the authoritative source for developing, deploying, and sustaining the operational capabilities and strategies necessary to preserve and optimize transportation system performance. The Manual was created to actively guide transportation agencies as a resource they can utilize to define and support their TSMO efforts.

23 U.S.C. § 101 defines TSMO as “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.” According to the Federal Highway Administration (FHWA) Office of Operations’ *Enhancing Transportation: Connecting TSMO and Planning* (2018), TSMO allows “agencies to target the underlying operational causes of congestion and unreliable travel through innovative solutions that typically cost less and are quicker to implement than adding capacity. TSMO expands the range of mobility choices available to system users, including shared mobility and nonmotorized options.”

Development and Intended Value

The idea of a transportation operations manual began to coalesce in 2015. The second Strategic Highway Research Program (SHRP2; 2006–2015) conducted several research projects to establish a taxonomy of TSMO strategies, technologies, and services. These collective efforts enhanced the management of an agency’s road infrastructure assets while reminding transportation professionals of how complex but worthy and achievable the challenge was to ensure the safety and mobility of the traveling public and the goods and services they benefited from.

AASHTO’s Committee on Transportation System Operations (CTSO; previously known as the Subcommittee on Systems Operations and Management) continued to advance the study of TSMO. The Committee strategically framed the purpose of TSMO by convening practitioners and leading TSMO experts to discuss, prioritize, and capture the practices state and local agencies were developing under the emerging TSMO mantra.

The National Operations Center of Excellence (NOCOe), the brainchild of AASHTO, ITE, and ITS America in partnership with the Federal Highway Administration, helped to further champion and mature TSMO through storytelling and compiling of TSMO practices and impacts. Thus, the TOM is not state DOT-centric, but rather speaks to the innovations taking place across the entire TSMO community—public and private, state and local.

The original project proposal led to approval for National Cooperative Highway Research Program (NCHRP) funding in 2018 with the objective “to research, outline, and begin writing an Operations Manual that would inform, guide, and organically reflect and mainstream TSMO practices.” AASHTO believes the first edition of the TOM has lived up to its charge. The Manual’s authors and TSMO-practitioner reviewers have produced a multi-chapter electronic first edition. This living document will now serve as the common denominator for TSMO professionals to discuss, elaborate, share, apply, evaluate, and improve what their work is all about.

How to Use the TOM

The TOM is more than a one-time product. It offers a framework for transportation leaders and practitioners to enhance safety and mobility, and it can play a key role within surface transportation for the TSMO community. The Manual complements the transportation sector’s family of guidance resources, and it can serve as an authoritative

companion to AASHTO's Green Book (*A Policy on Geometric Design of Highways and Streets*), AASHTO's *Highway Safety Manual*, TRB's *Highway Capacity Manual*, FHWA's *Manual on Uniform Traffic Control Devices* (MUTCD), and other accepted industry guidance manuals.

The TOM serves as a single reference for all elements of TSMO—strategic, programmatic, and tactical. Previous practice relied on numerous, often disparate sources and procedures, which were developed by various agencies and organizations independently of one another. Many references were singular in nature or fragmented in approach and did not span the entire breadth of TSMO functions. This Manual provides agencies and their partners a single, organized, and aligned resource to help them gain knowledge and familiarity with generally accepted operational improvements and provides a platform to further engage the industry in developing appropriate future applications. The TOM is both a document unto itself and a source of links to recommended supplemental materials that represent another level of detail into the state of practice for specific application areas. In sum, the TOM expands current practice through a more cohesive approach.

The TOM is intended to serve as a comprehensive reference manual but is not intended to be prescriptive in nature or supersede the judgment and decision making of TSMO professionals, informed by their own unique settings.

Governance and Future Editions

Recognizing the complexity of the transportation system and the evolving capabilities necessary for effective management, this first version is intentionally broad, an initial step in a continuing process of guidance development, expansion, and detailing. Like other AASHTO manuals, a technical committee will oversee revisions to the TOM to ensure the Manual will be a living document.

A new committee, the Transportation Operations Manual Technical Committee (TOM TC), has been organized under the CTSO Steering Committee with relationships to other relevant AASHTO committees and partner organizations. This committee has been established to guide and oversee future updates to this Manual. The Technical Committee will identify and consider new effective practices and oversee the development and documentation of additional key concepts, content, and references in this single, formally recognized source. For example, it is anticipated that the industry and technology trends section of the Manual will continue to evolve with advancements in technology and industry capabilities. These are not technologies for their own sake; they reflect the diligence of the TSMO community to establish use cases and evaluative tools to ensure their effective application and viable impact.

Finally, the Manual—by synthesizing an array of operational tactics that have evolved over time—identifies how important it is that areas like freight operations, public transit, and other dimensions of surface transportation be more front-of-mind in organizing and integrating TSMO priorities and practices. The TOM is an important starting point, and future editions will benefit from this more coordinated approach.

It is hoped that this first edition will serve as a basis for future revisions that reflect the needs of the TSMO community as their needs change and evolve. To accomplish this, TSMO professionals around the country are encouraged to communicate with AASHTO and the TOM Technical Committee to offer feedback. What is useful? What should future editions correct or add? Are there ways to better navigate the document as a useful tool among practitioners? How can the TOM stay current to embrace emerging and best practices to help address the challenges of the future?