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## Florida Department of Transportation Research

# Expanding Transportation Systems Management and Operations (TSM&O) from Planning to Construction Primer

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### Current Situation

Florida's increasing population leads to more road users of all types: pedestrians, cyclists, public transit, trucks, and automobiles. Because funds and right-of-way are often unavailable to increase highway capacity through expansion, effectively deploying Transportation Systems Management & Operations (TSM&O) can increase the capacity and efficiency of existing roads.

TSM&O is a program used by the Florida Department of Transportation (FDOT) to maximize the safety, reliability, and efficiency of all modes of the transportation system. TSM&O has most often been employed by traffic engineers focusing on optimal efficiency and operations for existing infrastructure. FDOT believes that TSM&O can be usefully extended to planning and design disciplines; however, no process for this extension is currently defined.



*FDOT seeks to involve TSM&O in every phase of roadway development, from planning to maintenance.*

### Research Objectives

University of Central Florida researchers developed a primer to provide detailed guidance on applying TSM&O to all phases of a general transportation project, from planning to construction.

### Project Activities

In a section titled "Keys to a Good TSM&O Program," the researchers surveyed the state of the TSM&O practice throughout the U.S. They report on several state departments of transportation – including Colorado, Tennessee, Maryland, and others – that have begun to implement TSM&O in planning and design phases, detailing a number of success stories. Efforts at FHWA and in many FDOT districts are also described.

The researchers created an inventory of best practices through a series of specific case studies in a variety of professional settings. For each one, the background, benefits, and lessons learned of each program under examination are described and detailed.

With this background, the researchers then describe how to develop a TSM&O program. A key to TSM&O is establishing performance measures which, when correctly defined, provide essential guidance toward desired outcomes. This section of the primer describes the goals, performance measures, functional areas, and benefits of a TSM&O program, with sample performance measures provided.

The primer then describes the TSM&O project cycle, how the program is built into each phase of project development and construction. Because these activities imply extra staff or extra staff time, the primer concludes by describing financial assistance programs that may be essential for acquiring the potential additional funds needed to implement a TSM&O program.

### Project Benefits

TSM&O can help engineers develop more capacity and efficiency on existing roadways. Through the primer developed in this project, these benefits can be extended to planning, design, construction, and maintenance phases.

*For more information, please see [dot.state.fl.us/research-center](http://dot.state.fl.us/research-center)*