



MICHIGAN DOT

This material was written entirely by Michigan DOT and submitted to NOCoE.

**TRUNKLINE PROGRAM
OPERATIONS TEMPLATE**

TRUNKLINE PROGRAM OPERATIONS TEMPLATE

An Operational Improvement is any improvement that results in restoring or optimizing theoretical capacity and/or improves travel reliability and safe flow of traffic on the existing number of permanent, through travel lanes within the corridor.

TEMPLATE PURPOSE

This template is intended to provide funding for an integrated program to optimize the performance of existing multimodal infrastructure by implementing systems, services and projects to maximize capacity and/or improve the security, safety and reliability of the transportation system.

The Michigan Department of Transportation (MDOT) employs a two-pronged strategy to accomplish this. First, the department utilizes Transportation Systems Management and Operations (TSMO) strategies and solutions to provide a more efficient use of existing transportation resources by implementing strategies, deploying technologies and integrating systems to address freeway and arterial congestion, improve safety and mobility, and encourage sustainability. TSMO solutions are specifically designed to address nonrecurring issues and include solutions that increase mobility, reliability and safety during incidents, bad weather, work zones and special events by better manag-



Photo by Michigan DOT

ing and operating roads that MDOT has already constructed. TSMO solutions are intended to require relatively little capital investment and are less expensive, less disruptive and much faster to implement.

Secondly, MDOT will develop operational improvements to the existing trunkline system that will optimize the capacity of a roadway and address recurring congestion issues. These types of improvements can be higher-cost fixes that can be coordinated with other projects that address condition and/or safety or can be stand-alone projects that only address operations.

The Safety Template is being brought under the framework of the Trunkline Program Operations Template to better coordinate operations and safety work and maximize the contribution towards improving the safety of the statewide transportation system. The Operations Template does not change the program goal, selection criteria, management or funding associated with the Safety Template. The Safety Template continues to support MDOT's safety goal of reducing fatalities and serious injuries on the state trunkline system in support of Michigan's Strategic Highway Safety Plan and the department's efforts of achieving the vision Towards Zero Deaths. The strategy of the Safety Program is to address correctable fatality and serious injury crashes, with cost effective safety improvements.

Intelligent Transportation Systems (ITS) and traffic signals are not currently part of the CFP, but are being brought under the Operations Template and the CFP approval process. There is no change to the program development and management of the Signs, Pavement Marking or Delineators programs.

The Fiscal Year (FY) 2024 Highway CFP was issued on April 4, 2018. A Congestion Mitigation/ Air Quality (CMAQ) Program for FY 2024 was included in this CFP but has since been rescinded and will no longer be a separate template category. Over the years, MDOT has been using CMAQ as a work program and selecting projects through the CFP process. However, CMAQ is a federal funding apportionment similar to IM, Surface Transportation Program (STP), National Highway Performance Program (NHPP), etc. with restrictions and requirements.

In order to more effectively utilize CMAQ funding within MDOT and better align its intended use, the funding (apportionment and associated obligation authority) will be used as a federal source for the Operations Template. Decisions and project selection for CMAQ funding would still meet federal regulations and eligibility requirements, however they would be governed by program development processes outlined in the following pages.

PROPOSED FUNDING SOURCE(S)

Federal Surface Transportation Program, National Highway Performance Program, Highway Safety Improvement Program (HSIP), CMAQ, and state "M" funds.

EXAMPLES OF ELIGIBLE WORK ACTIVITIES

- New Turn Lanes/Increased Storage Length
- Active Traffic Management Strategies
- Roundabouts/Signal Improvements
- On/Off Ramp Improvements
- Interchange/Intersection Improvements
- Traffic Operation Centers
- MichiVan
- Freeway Courtesy Patrol
- Geometric Improvement
- Horizontal Alignment
- Shoulder Widening
- Connected Vehicle Infrastructure
- Road Weather Information System (RWIS)

- Traffic Signal Intercom and Upgrades
- Dynamic Message Systems
- Closed Circuit Television (CCTV)
- Fiber Optic Cable Installation
- Camera Pole Construction

OPERATIONS TEMPLATE FUNDING AND PROGRAM CATEGORIES

The Operations Template will begin in FY 2019, transitioning to full implementation in FY 2024. The Operations Template would be comprised of the following program categories and initial funding allocation.

Operations Set-Aside	\$14 Million	currently OTT CMAQ F.A.
Intelligent Transportation Systems (ITS)	\$16 Million	currently non-CMAQ F.A.
Non-Freeway Reliability and Operations	\$10 Million	currently MDOT CMAQ
Freeway Operations	\$40 Million	currently non-CMAQ F.A. and MDOT CMAQ
Traffic Signals	\$18.6 Million	currently non-CMAQ F.A.

The plan is to fully implement the Operations Set-Aside, ITS, Non-Freeway Reliability and Operations, and Freeway Operations programs by FY 2024.

OPERATIONS STEERING COMMITTEE

An Operations Steering (OPS) Committee, composed of the Operations Set-Aside, ITS, Non-Freeway Reliability and Operations, Freeway Operations, Safety and Signals System managers and the region TSMO champions listed below, would coordinate the programs under the Operations Template. Their primary responsibility will be to ensure that this comprehensive set of programs are coordinated and contribute to the safety, reliability and operations of MDOT's state trunkline system. In doing this, they will ensure that the individual programs' goals and selection criteria are aligned and contribute to specific, overall template goals for safety and reliability. Furthermore, they will ensure that the projects selected across the template are maximizing the value that the individual programs contribute to the overall safety and reliability of the statewide transportation system. They would also be responsible for reviewing and recommending approval, as appropriate, the programs that go through the Integrated Highway Call for Projects process to the CFP Approval Committee.

REGION TSMO CHAMPIONS

To assure that TSMO solutions are considered in program development, especially the Integrated Highway CFP, TSMO champions have been designated in each region. These champions will be involved in the development of each region's programs and look for opportunities to implement TSMO in the region's CFP submittal. The region TSMO champions are listed below.

CMAQ ELIGIBILITY TEAM

As identified earlier, federal CMAQ funds are intended to be one of several sources of funding for the Operations Template. CMAQ has specific requirements that must be considered prior to a project being eligible for funding. In order to correctly assess funding availability and project eligibility, a CMAQ Eligibility Team will be established. Project level CMAQ eligibility would be determined prior to a program being submitted to the CFP Approval. The CMAQ Eligibility Team will be led by the CMAQ Program Manager, Matt Galbraith.

PROGRAM CATEGORIES

OPERATIONS SET-ASIDE – \$14 MILLION | SYSTEM MANAGER – COLLIN CASTLE

This program will fund statewide activities such as MichiVan, Freeway Courtesy Patrol, and the Southeast Michigan and West Michigan Traffic Operations Centers. These activities have traditionally been CMAQ eligible, therefore we propose to continue to finance this work with CMAQ funds, if still eligible under the new CMAQ requirements. It is anticipated that this program would require increased funding over time as activities are expanded and/or ongoing operations and maintenance (O&M) is increased.

Program needs would be solicited by the system manager. The system manager will review and prioritize the requests consistent with the constrained budget and program direction. The recommended program will be submitted to the CMAQ Eligibility Team to determine which projects are eligible for CMAQ funding. If the project(s) is deemed CMAQ eligible and funding is available, it would receive CMAQ funding; otherwise it would be programmed with another more appropriate federal or state funding source. The program would then be forwarded to the Statewide Transportation Planning Division (STPD) for final constraint and strategic direction review. STPD submits the recommended Operations Set-Aside program to the Operations Set-Aside System manager for final approval.

ITS – \$16 MILLION | SYSTEM MANAGER – COLLIN CASTLE

This program will fund the Statewide Traffic Operations Center (STOC), connected vehicle infrastructure and integration; RWIS; DMS; CCTV; communication, power, and maintenance; camera pole construction; fiber optic cable installation; etc. This program includes capital and ITS O&M costs. O&M costs that are no longer CMAQ eligible, but are required to support the program, will be funded from other federal or state funds.

Program needs should be identified by each region and project candidates submitted to an ITS subcommittee annually. The subcommittee will also review and recommend projects and ensure the program/project is meeting goals, strategic direction and funding targets. Candidates will be prioritized, and recommendations forwarded to the Oper-

ations Steering Committee for review. If CMAQ funding is being requested, the CMAQ Eligibility Team will review the project for funding eligibility. If the project(s) is deemed CMAQ eligible and funding is available, it would receive CMAQ funding; otherwise it would be programmed with another more appropriate federal or state funding source. Because ITS is now part of the CFP process, recommended candidates will be forwarded to the CFP Approval Committee for approval with final selections announced by MDOT's chief administrative officer (CAO) and chief operations officer (COO).

NON-FREEWAY RELIABILITY AND OPERATIONS – \$10 MILLION | SYSTEM MANAGER – JASON FIRMAN

This program will focus on improving travel reliability and safe flow of traffic on the existing permanent, through travel lanes along non-freeway state trunkline corridors. This would be a statewide competitive program primarily focusing on Tier 3 (non-freeway National Highway System [NHS]) and Tier 4 (non-NHS trunkline) corridors, although it does not preclude operational improvement on Tier I or II freeway corridors.

Eligible work activities under this program would include new turn lanes, increased storage length, roundabouts, signal improvements, interchange and intersection improvements, and active traffic management strategies. At a minimum, a benefit/cost threshold would be required for projects eligible for this funding.

Project selection will occur through the annual Highway CFP process. A Non-Freeway Reliability and Operations subcommittee of the CFP would be established to review and recommend projects and ensure the program/project is meeting goals, strategic direction and funding targets.

The subcommittee composed of central office and region members will develop criteria for project evaluation. Regions should submit candidate projects for consideration annually as part of the CFP. The subcommittee submits the program to the Operations Steering Committee for review. Concurrent with this review, the CMAQ Eligibility Team will review the proposed program prior to submission to the CFP Approval Committee. If projects are deemed eligible and CMAQ funding is available, they would be programmed accordingly; otherwise they would receive the appropriate

federal or state funding. The recommended candidates should be forwarded from the Operations Steering Committee to the CFP Approval Committee for approval with final selections announced by MDOT's CAO and COO.

FREEWAY OPERATIONS – \$40 MILLION | SYSTEM MANAGER – JASON FIRMAN

This program will focus on improving travel reliability and safe flow of traffic on Tier I (Interstate) and Tier II (Non-Interstate Freeway) state trunkline corridors. This program will be part of the annual Highway CFP and run competitively statewide with selection based primarily on the benefit/costs of the project. It is anticipated that funding would complement MDOT Road Rehabilitation and Reconstruction (R&R) and/or bridge projects, rather than fully funding a project. A Freeway Operations CFP Subcommittee will be established with members from central office and the regions. The subcommittee would develop criteria for project evaluation.

The Statewide and Urban Travel Analysis Section of the Bureau of Transportation Planning will work with the region systems managers and planners to identify travel issues within their geographic areas. The region requesting funding will submit a scoping document and application/funding request to the Freeway Operations CFP Subcommittee for consideration during the annual CFP. The Freeway Operations subcommittee will review the candidate projects and make recommendations consistent with the programs goals, strategic direction, and funding. The subcommittee submits the program to the Operations Steering Committee for review. Concurrent with this review, the CMAQ Eligibility Team will review the proposed program prior to submission to the CFP Approval Committee. If projects are deemed eligible and CMAQ funding is available they would be programmed accordingly, otherwise they would receive the appropriate federal or state funding. The recommended candidates should be forwarded to the CFP Approval Committee for approval with final selection and announcement made by MDOT's CAO and COO.

SAFETY – \$21.5 MILLION | SYSTEM MANAGER – MARK BOTT

The focus of this program is to reduce fatalities and serious injuries on the state trunkline system. Projects that address both spot locations and systemic fixes are encouraged. The safety program is well established and has been part of the Highway Call for Projects for many years. This program is also a means for MDOT to support the goals of the Michigan Strategic Highway Safety Plan. Regions are allocated funding and a small statewide discretionary fund is also available on a competitive basis. Funding targets are set based on vehicle miles traveled and lane miles in relation to the percentage of fatalities and serious injuries in each region.

Proposed projects must be supported by the region's Toward Zero Deaths Implementation Plan and meet specified Time of Return requirements. Projects are identified by the regions and submitted to the subcommittee for consideration during the annual CFP. The Safety subcommittee will review the candidate projects and make recommendations consistent with the programs goals, strategic direction and funding. The subcommittee submits the program to the Operations Steering Committee for review. The recommended candidates should be forwarded to the CFP Approval Committee for approval with final selection and announcement made by MDOT's CAO and COO.

TRAFFIC SIGNALS – \$18.6 MILLION | SYSTEM MANAGER – HILARY OWEN

The Traffic Signals program is focused on the modernization of existing traffic signals and the installation of new traffic signal devices at locations that meet established traffic signal warrants. Operations and maintenance for traffic signals is not funded from this program. For the signal modernization portion of the program, Lansing Operations Field Services Systems Operations Section identifies signal locations that are eligible for modernization funding and sets statewide priorities. The regions and Transportation Service Centers (TSCs) are consulted during the selection of the devices that will be modernized to better coordinate signal work with other capital programs in the region. To better coordinate this work with the rest of the MDOT, the Traffic Signal Modernization Program is included in the annual Integrated Highway CFP.

SIGNAL MODERNIZATION

Project candidates for modernization projects will be identified using the current process. A Signal subcommittee of the CFP will be established to review and recommend projects and ensure the program/project is meeting goals, strategic direction and funding targets. The subcommittee submits the program to the Operations Steering Committee for review. The subcommittee will include central office and region members. The CMAQ Eligibility Team will review the proposed program prior to submission to the CFP Approval Committee. When funding is available, projects deemed eligible for CMAQ funding would be programmed accordingly, otherwise they would receive the appropriate federal or state funding. Signal modernization is part of the CFP process and recommended candidates should be forwarded to the CFP Approval Committee for approval with final selections announced by MDOT's CAO and COO.

NEW SIGNALS

The installation of new traffic signals is identified through requests from various sources that are filtered through the TSCs. These requests are then forwarded to the Office of Field Services (OFS) for further study to see if particular locations meet one or more of the various traffic signal warrants and qualify for the installation of a traffic signal. Due to the more random nature of this type of work, it is recommended that the installation of new traffic signals remain outside the Integrated Highway CFP process.

OPERATIONS TRANSITION PLAN

MDOT currently has several investment templates and project commitments that support funding and operations of state trunklines. To facilitate an orderly transition from these existing mechanisms to the new Operations Template, the transition plan in the table below will be implemented. The uncommitted funding is anticipated to be utilized for new projects submitted through the CFP process beginning in FY 2019.

The FY 2018 Highway Program contains \$20 million for additional operations work. To date this funding is uncommitted. These funds will be allocated to the new Operations Template in the following manner: \$5 million to the Non-Freeway Reliability and Operations Program and \$15 million to the Freeway Operations Program. In order to provide sufficient time to develop and select projects for the Non-Freeway Reliability and Operations Program, funding for FY 2018 (\$5 million) may need to be combined with FY 2019 funding (\$5 million) and the first year of implementation begin in FY 2019. To provide enough time to develop and select projects for the Freeway Operations Program, funding for FY 2018 (\$15 million) and FY 2019 (\$22 million) may need to be combined with FY 2020 (\$30 million) and the first year of implementation begun in FY 2020.

Projects that are proposed to have operations funding supplement other funding sources will have to be submitted to both the Operations Steering Committee and the other program subcommittees for approval. Since Operations funding is competitive statewide, projects seeking full or partial funding from the Operations Template will need approval in advance of other funding templates, similar to the Freeway Resurfacing Program. Proposed operations projects should be approved before the preliminary submittal for other programs.

The FY 2024 Highway CFP was issued on April 4, 2018. A CMAQ Program for FY 2024 was included in this CFP but has since been rescinded and will no longer be a separate template category. Over the years, MDOT has been using CMAQ as a work program and selecting projects through the CFP process. However, CMAQ is a federal funding apportionment similar to IM, STP, NHPP, etc., with restrictions and requirements. In order to more effectively utilize CMAQ funding within MDOT and better align its intended use, the funding (apportionment and associated obligation

authority) will be used as a federal source for the Operations Template. Decisions and project selection for CMAQ funding would still meet federal regulations and eligibility requirements, however they would be governed by program development processes outlined in the previous pages.

The Operations Transition Plan would not impact funding of the Safety or Traffic Signals programs. They will continue with the funding established by the existing Highway Investment Strategy.