

Approved:



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Standard Procedure No.: 123-001(SP)

Effective: December 24, 2020

Responsible Division: Engineering

Supersedes Standard Procedure: 123-001(SP)

Dated: September 9, 2019

TRAFFIC MANAGEMENT IN WORK ZONES

PROCEDURAL STATEMENT:

Work zones have the potential to be a major source of delay to commerce and the motoring public. The Ohio Department of Transportation will systematically determine the impacts created by work zones and will eliminate, minimize or mitigate these impacts to the greatest extent practical. Ultimately this will enhance mobility and safety and maintain customer satisfaction while traveling through ODOT work zones and Federal-aid highway projects.

AUTHORITY:

The Director of Transportation's authority to establish rules as conferred by *5501.02 of the Ohio Revised Code*. This Standard Procedure is issued under the direction of Policy 21-008(P) dated December 24, 2020.

REFERENCES:

Permitted Lane Closure Schedule (PLCS)

Highway Capacity Manual (HCM)

Ohio Manual of Uniform Traffic Control Devices (OMUTCD)

23 CFR Part 630 Subpart J; Work Zone Safety and Mobility

23 CFR Part 630 Subpart K; Temporary Traffic Control Devices

ODOT Traffic Engineering Manual (TEM)

ODOT Project Development Process (PDP) Manual

ODOT Location and Design (L&D) Manual, Volume 3

ODOT Construction and Materials Specifications (C&MS)

ODOT Policy 21-008(P) "Traffic Management in Work Zones"

ORC 4511.01

SCOPE:

This Standard Procedure applies to work zones (contract construction, county maintenance or permit) on all ODOT maintained highways and on all Federal-aid highway projects.

DEFINITIONS:

Allowable Queue Length Threshold: Queue lengths on freeways and expressways shall not exceed the allowable queuing threshold. The allowable queuing threshold is as follows:

Predicted Queue Length ≤ 0.75 miles > 0.75 milesMaximum Duration

Allowable for unlimited duration

Not allowable

Where queues are normally present without lane closures, the threshold should compare existing queues to predicted queues caused by lane closure(s).

District Work Zone Traffic Manager (DWZTM): An individual appointed by the District Deputy Director (DDD) responsible for implementation of this Standard Procedure.

Expressway: A divided arterial highway for through traffic with full or partial control of access with an excess of fifty percent of all crossroads separated in grade (ORC 4511.01(ZZ)).

Freeway: A divided multi-lane highway for through traffic with all crossroads separated in grade and with full control of access (ORC 4511.01(Y)).

Maintenance of Traffic Alternatives Analysis (MOTAA): The purpose of the MOTAA is twofold. First, it provides ODOT with information for use in determining if a part-width, crossover or contra-flow construction scenario is better for a given work zone. Second, it identifies potential problems, i.e., “constraints”, with the various maintenance of traffic (MOT) scenarios and allows ODOT to make an informed decision on how to address these problems prior to detailed design of plans. See TEM Section 630-5 for more detailed information on how and when to prepare and submit MOTAAAs.

Mainline Ramp: A ramp serving as a mainline continuation between sections of the same route numbered freeway (or expressway).

Maintenance of Traffic Exception Committee (MOTEC): The MOTEC is a committee appointed by the Chief Engineer and typically includes: Deputy Director of Engineering, Deputy Director of Construction Management, Administrator of Roadway Engineering and the Traffic Control Design Engineer. Additional committee members may be added on a case-by-case basis based on technical needs, potential traffic impacts or financial considerations of the request being considered.

Maintenance of Traffic (MOT) Plan: Also known as Temporary Traffic Control (TTC) Plan. See the PDP, L&D Manual Volume 3, Section 1306 and the TEM Section 641 for additional information on preparing and submitting MOT plans.

Permitted Lane Closure Schedule (PLCS): The PLCS is a web based searchable data base tool that provides a quick and efficient method for identifying which hours of the day lane closures should not result in the Allowable Queue Length Threshold being exceeded. Links to launch the applicable PLCS system can be obtained from the following ODOT website:

<https://www.transportation.ohio.gov/wps/portal/gov/odot/working/data->

[tools/resources/permitted-lane-closure](#) This webpage can also be found by searching ODOT's main webpage for "PLCS".

Project Development Process (PDP): A project management and transportation decision-making tool that outlines project development from concept through completion. Depending on the size, complexity, and/or potential impact to the environment, ODOT transportation projects are categorized as following one of five paths (Path 1-5). All projects must advance through a series of sequential phases.

Proper Coordination: Communicating in advance and in a timely manner with others who may be impacted by the closure including but not limited to other ODOT offices (e.g., other Districts, Traffic Management Center, District Public Information Office, District Highway Maintenance, Central Office Hauling Permits, MOTEC, etc.), other public agencies, emergency management services, local school districts, contractors, permit holders, business owners, special event coordinators and the like to ensure that the closure does not conflict with previously scheduled closures/events or that any impacts of such closures/events can be mitigated.

Project Impact Advisory Council (PIAC): The PIAC was a former committee appointed by the ODOT Chief Engineer to consider Policy exception requests that were anticipated to be longer in duration or more impactful than those considered by the MOTEC. The duties of this former committee have been transferred to the MOTEC with the December 24, 2020 effective date of this Standard Procedure. Former decisions rendered by PIAC remain in effect, as previously approved. Any changes necessary to former decisions rendered by PIAC shall now be considered by MOTEC.

Public Information (PI): Specific effort to provide the public with information related to an impending or ongoing construction project. The level of PI should be commensurate with the anticipated work zone impacts to the public. Public relation campaign tools include, but are not limited to, consideration of stakeholders' needs during the decision-making process, public meetings, news releases, dedicated web sites, social media and media alerts.

Service Ramp: Interchange ramps between freeways (or expressways) and non-freeways (or non-expressways). These ramps provide access (connections) between freeways/expressways and other principal/minor arterials, collectors or local roads.

Significant Project: A project that is anticipated to cause sustained work zone impacts greater than the Allowable Queue Length Threshold or a project that otherwise requires approval from a DDD or the MOTEC.

System Ramp: Interchange ramps (or connectors) between freeways (or expressways) and freeways (or expressways).

Temporary Traffic Control (TTC) Plan: See Maintenance of Traffic (MOT) Plan.

Transportation Management Plan (TMP): Overall strategy for accommodating traffic during maintenance, construction and force account projects. Elements of the TMP include Temporary Traffic Control (TTC) plans and addresses both Transportation Operations (TO) and Public Information (PI) component. For projects that are not considered Significant, the TMP may only include the TTC plan.

Transportation Operations (TO): The employment of various strategies to mitigate impacts of the work zone on the operation and management of the transportation system is required for Significant Projects. Strategies include, but are not limited to, incident management schemes, identification of alternate routes and work zone Intelligent Transportation Systems (ITS) or retiming of traffic signals affected by the work zone.

Urban: For purposes of this Standard Procedure, the “Urban Areas” boundaries layer within Transportation Information Mapping System (TIMS) will be used to identify the urban portions of freeways and expressways.

PROCEDURES:

I. DISTRICT WORK ZONE TRAFFIC MANAGER (DWZTM)

Each District Deputy Director shall appoint a DWZTM within their district to be responsible for implementing this standard procedure. The DWZTM should possess a working knowledge of highway capacity theory; maintenance of traffic strategies and performance; ODOT manuals, standards and practices; and traffic flow modeling tools. Field experience on multi-lane construction projects is desirable. Information regarding the duties of the DWZTM can be found Section 601-3 of Traffic Engineering Manual (TEM).

II. APPROVALS OF EXCEPTIONS TO THIS POLICY

Where the financial, constructability or schedule impacts of adhering to these Policy requirements are, in the opinion of the District, excessive or impractical a Policy exception request may be submitted to the District Deputy Director or MOTEC as described below. DWZTMs shall consult with the Office of Roadway Engineering if in doubt of the need for a Policy exception request approval.

III. MAINTENANCE OF TRAFFIC ALTERNATIVES ANALYSIS (MOTAA)

An MOTAA shall be performed as per the ODOT PDP and TEM Section 630-5. The purpose of the MOTAA is to identify the most efficient alternative of maintaining traffic (part width, cross-over, contraflow) for a given project by identifying the benefits and constraints of each alternative.

Preferred alternatives identified by the MOTAA that exceed the thresholds established in Policy 21-008(P) “Traffic Management in Work Zones” will require an exception to be

approved by the District Deputy Director or MOTEC, as applicable, prior to advancing to detailed design.

IV. LANE CLOSURES

Capacity restrictions caused by lane closures shall be evaluated as described below to identify when traffic volumes may cause delays and/or backups during lane closures.

A. For Freeways and Expressways Covered by the PLCS:

1. Proposed lane closures that adhere to the PLCS may move forward without further analysis or approval.
2. Proposed lane closures that contemplates exceeding times allowed in the PLCS shall be analyzed to determine the predicted resulting queues. Analysis requirements are provided in TEM Section 640-13.2.
 - a. If the analysis predicts queues within the Allowable Queue Length Threshold, then the lane closures may move forward as contemplated without MOTEC approval;
 - b. Except as permitted in Section VI, if the analysis predicts queues that will exceed the Allowable Queue Length Threshold then the contemplated lane closures are not acceptable and a Policy exception request shall be submitted for approval to the MOTEC as described in Section VII.

B. For Other Major Roadways Not Covered by the PLCS:

TEM Section 640-13 provides traffic volume thresholds and guidance for two lane and multi-lane facilities where additional consideration of mitigating potential work zone impacts should be exercised. Mitigation efforts should be commensurate to the expected impacts. MOTEC approval is not required for road work on these facilities; MOTEC consultation is required as described in Section VII.B.

V. RAMP CLOSURES

- A. Service Ramps may be closed as necessary with Proper Coordination and PI (Policy exception request not required);
- B. System Ramp closures with a duration of 72 consecutive hours or less may be implemented with District Deputy Director approval (without MOTEC approval), after careful consideration and with Proper Coordination and PI. Closures during peak travel times should be avoided.

In cases when the District Deputy Director chooses to exercise this authority the DWZTM shall provide written notification to the MOTEC upon approval and then again in accordance with Section XI in advance of the closures being implemented. This authority is discretionary, and the District Deputy Director may opt to seek MOTEC authority as defined by this Procedure. Appropriate TMP components shall be addressed (per Section X) as a Significant Project;

- C. System Ramp closures with planned durations longer than 72 consecutive hours require approval of the MOTEC;
- D. Mainline Ramp closures shall be evaluated the same as a full mainline closure on the adjacent mainline sections (non-ramp) on the same facility, as described in Section VII.A.3.

VI. DISTRICT DEPUTY DIRECTOR AUTHORITY TO APPROVE EXCEPTIONS TO THE ALLOWABLE QUEUE LENGTH THRESHOLD:

The District Deputy Directors, at their discretion, may approve lane closures without MOTEC approval that will exceed the allowable queue length threshold for the following durations:

- A. 72 consecutive hours or less in a 7-day period; or
- B. Two consecutive weekends with lane closures not to exceed 72 hours in duration per weekend

In cases when the District Deputy Director chooses to exercise this authority the DWZTM shall provide written notification to the MOTEC upon approval and then again in accordance with Section XI in advance of the closures being implemented. This authority is discretionary, and the District Deputy Director may opt to seek MOTEC authority as defined by this Procedure. Appropriate TMP components shall be addressed (per Section X) as a Significant Project.

VII. MAINTENANCE OF TRAFFIC EXCEPTION COMMITTEE (MOTEC) APPROVALS

- A. The DWZTM shall petition the MOTEC for exceptions to the Allowable Queue Length Threshold in the following circumstances:
 - 1. When the required queue analysis predicts a queue length greater than 0.75 miles; or

2. When System Ramp closures have a planned duration more than 72 consecutive hours; or
 3. When there are planned full freeway or expressway (including Mainline Ramp) closures.
- B. In addition to the Policy exception requests as outlined above; the DWZTM shall consult the MOTEC “as soon as practical” during project development, on any roadway type, when:
1. A project is planning on utilizing incentives/disincentives of \$50,000 or more; or
 2. An impactful project of regional significance which has the potential to be controversial or otherwise might be susceptible to negative public or political scrutiny.

“As soon as practical” is the point in project development when sufficient information, based upon the topic, can be gathered and presented to the MOTEC in order for the committee to make thoughtful considerations. It should not be so late in the project development process that plan changes required by the MOTEC will adversely affect the project file or sale date.

VIII. PROJECT IMPACT ADVISORY COUNCIL (PIAC) APPROVALS

The duties of this former committee have been transferred to the MOTEC with the December 24, 2020 effective date of this Standard Procedure.

Former decisions rendered by PIAC remain in effect, as previously approved. All other sections of this Standard Procedure (including but not limited to X, XI, etc) continue to apply as with any other approved Policy exception request. Any changes necessary to former decisions rendered by PIAC shall now be considered by MOTEC.

IX. SUPPLEMENTAL FUNDING FOR POLICY COMPLIANCE

For projects funded primarily by District Allocation, the DWZTM may request supplemental funding from the MOTEC to assist with the cost of compliance with Policy 21-008(P) “Traffic Management in Work Zones” and this Procedure. Typical costs can include:

- A. Additional bridge widening necessary solely for the purposes of MOT.
- B. Incentives designed to minimize MOT impacts.
- C. Work zone ITS.

D. Innovations for minimizing MOT impacts.

E. Required improvements to alternate routes to accommodate diversions.

X. TRANSPORTATION MANAGEMENT PLAN (TMP)

All projects shall incorporate the necessary component(s) of a TMP, as defined under Definitions, in accordance with the project's significance designation.

XI. NOTIFICATIONS

A. The DWZTM shall notify the Office of Roadway Engineering in writing a minimum of two calendar days (excluding weekends and holidays) in advance of implementation of all District Deputy Director, MOTEC or former PIAC approved lane closures, full closures and/or System Ramp closures. The notification shall include:

1. Project ID number, if applicable.
2. County-Route-Section.
3. Date and time of approved closure(s).

B. The Office of Roadway Engineering will initially notify the Ohio Division of Federal Highway Administration of MOTEC approvals involving full closures on the interstate system (in accordance with FHWA Ohio Division letter dated July 30, 2020) and again upon implementation notification from the DWZTM as required in XI.A. The Office of Roadway Engineering will also notify the Ohio Division of Federal Highway Administration of former PIAC approvals involving full closures upon implementation notification from the DWZTM as required in XI.A.

TRAINING:

The Office of Roadway Engineering will provide training to districts as necessary and to consultants via the ODOT Traffic Academy.

FISCAL ANALYSIS:

The cost associated with this standard procedure depends heavily on the circumstances of each individual project and will be evaluated on a project by project basis by the District and/or MOTEC. A determination will be made if the financial, constructability or schedule costs of standard procedure compliance is commensurate with the predicted work zone impacts to the motoring public.

Appendix A: Standard Procedure 123-001(SP) Quick Reference Summary ¹		
Applies to:		Work Zones (contract construction, county maintenance or permit) on all ODOT maintained highways and on all Federal-aid highway projects.
Procedures		
I.	Implementation:	Each DDD shall appoint a DWZTM to be responsible for implementing this standard procedure.
II.	Policy Exception Requests:	Policy exception requests may be submitted for consideration. <i>See references below to Appendix B.</i>
III.	MOTAA:	Shall be performed per ODOT PDP and TEM Section 630-5. Any preferred alternative that exceeds the thresholds established by the Policy will require approval by the DDD or MOTEC, as applicable, prior to advancing to detailed design.
IV.	Lane Closures:	<u>Freeway/Expressways on PLCS:</u> - Adhering to PLCS: May move forward without further analysis. - Exceeding times allowed in PLCS: Analyze to determine predicted queue lengths per TEM Section 640-13.2. Predicted queue lengths: - Within the Allowable Queue Length Threshold may move forward as contemplated. - Exceeding the Allowable Queue Length Threshold are not acceptable. Requires a Policy exception request approval. <i>See Lane Closures in Appendix B.</i> <u>Other Major Roadways not covered by the PLCS:</u> - Thresholds and guidance in TEM Section 640-13. MOTEC approval is not required; MOTEC consultation is required as described in Section VII.B.
V.	Ramp Closures:	<u>Service Ramps:</u> May be closed as necessary with Proper Coordination and PI. (Policy exception request not required.) Notifications per Section XI do not apply to Service Ramp closures. <u>System Ramps:</u> Requires Policy exception request approval. <i>See Ramp Closures in Appendix B.</i> <u>Mainline Ramps:</u> Requires Policy exception request approval. <i>See Mainline Full Closures in Appendix B.</i>
IX.	Supplemental Funding for Policy Compliance:	Projects funded primarily by District Allocation may request supplemental funding from MOTEC to assist with the cost of compliance with the Policy and Standard Procedure. <i>See Appendix B.</i>
X.	TMP:	All projects shall incorporate the necessary components of a TMP in accordance with the project’s significance designation.

¹ This is a quick reference and is not intended to convey all information within Standard Procedure 123-001(SP). All references to Sections (I through XI or Appendices) without a specific document reference preceding it relate to Standard Procedure 123-001(SP).

Appendix B: Policy Exception Request Approval Quick Reference Summary¹		
Ramp Closures		
V.B.	DDD ^{2, 3}	System Ramp Closure Duration $\leq$ 72 Consecutive Hours
V.C. & VII.A.2.	MOTEC ^{2, 4}	System Ramp Closure Duration $>$ 72 Consecutive Hours
V.D.	MOTEC ^{2, 4}	Mainline Ramp closures are the same as full mainline closures. <i>See Mainline Full Closures below.</i>
Lane Closures where the Predicted Queues Exceed the Allowable Queue Threshold		
VI.	DDD ^{2, 3}	Predicted queue length >0.75 , and: • Lane closure duration is ≤ 72 hours in a 7-day period, or; • Lane closure duration is ≤ 2 consecutive weekends not to exceed 72 hours in duration per weekend
IV.A.2.b. & VII.A.1.	MOTEC ^{2, 4}	Predicted queue length >0.75 (if not approved by DDD per Section VI)
Mainline Full Closures		
VII.A.3.	MOTEC ^{2, 4}	All mainline full freeway or expressway closures (including Mainline Ramps)
Other Situations		
VII.B.1.	MOTEC ⁵	Projects with incentive/disincentives of \$50,000 or more
VII.B.2.	MOTEC ⁵	An impactful project of regional significance which has the potential to be controversial or otherwise might be susceptible to negative public or political scrutiny
IX.	MOTEC	Projects funded primarily by District allocation may request supplemental funding to assist with the cost of compliance with the Policy and Standard Procedure. Typical costs can include: Additional bridge widening necessary solely for the purposes of MOT; Incentives designed to minimize MOT impacts; Work zone ITS; Innovations for minimizing MOT impacts; Required improvements to alternate routes to accommodate diversions.

¹ This is a quick reference and is not intended to convey all information within Standard Procedure 123-001(SP). All references to Sections (I through XI, or Appendices) without a specific document reference preceding it relate to Standard Procedure 123-001(SP).

² With appropriate TMP components addressed (per Section X) as a Significant Project.

³ DWZTM to notify MOTEC in writing upon DDD approval *and* then again in advance of the closure(s) being implemented per Section XI.

⁴ DWZTM to send notification in advance of the closure(s) being implemented per Section XI.

⁵ Consult MOTEC “as soon as practical”, as defined in Section VII.B.