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.

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 April 17, 2015.

REFERENCES:

Permitted Lane Closure Schedule (PLCS) website: [http://plcm.dot.state.oh.us](http://plcm.dot.state.oh.us)
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.

DEFINITIONS:

Allowable Queue Length Threshold: Queue lengths on freeways and expressways shall not exceed the allowable queuing thresholds. The allowable queuing thresholds are as follows:
Predicted Queue Length | Maximum Duration
------------------------|------------------------
≤ 0.75 miles            | Allowable for unlimited duration

> 0.75 miles            | 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 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(YY)).

**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 MOTAAs.

**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 sub-committee of the PIAC appointed by the Deputy Director of Engineering.

**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.

**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/PIAC, 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 is a committee appointed by the ODOT Chief Engineer to consider policy exception requests that are anticipated to be longer in duration or more impactful than those considered by the 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 Thresholds or a project that otherwise requires approval from the MOTEC or PIAC.

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


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 MOTEC or PIAC as described below. DWZTM shall consult with the Office of Roadway Engineering if in doubt of the need for MOTEC or PIAC 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 MOTEC or PIAC, as appropriate, 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 Thresholds, then the lane closures may move forward as contemplated without MOTEC or PIAC approval;

   b. Except as permitted in Section VI, if the analysis predicts queues that will exceed the Allowable Queue Length Thresholds then the contemplated lane closures are not acceptable and, depending on the magnitude of the predicted resulting queues, an exception request shall be submitted for approval to either the MOTEC or PIAC as described in Sections VII and VIII.

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 or PIAC approval is not required for road work on these facilities, except as described in Section VIII.B.

V. RAMP CLOSURES

   A. Service Ramps may be closed as necessary with Proper Coordination and PI;

   B. System Ramp closures with a duration of 72 consecutive hours or less may be implemented at the discretion of the Deputy Director after careful consideration and with Proper Coordination and PI. Closures during peak travel times should be avoided;

   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 the adjacent mainline sections (non-ramp) on the same facility.

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

The District Deputy Directors, at their discretion, may approve lane closures without MOTEC or PIAC approval that will exceed the allowable queue thresholds 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 or PIAC authority as defined by this Procedure.

VII. MAINTENANCE OF TRAFFIC EXCEPTION COMMITTEE (MOTEC) APPROVALS

The DWZTM shall petition the MOTEC for exceptions to the Allowable Queue Length Threshold in the following circumstances:

A. When the required queue analysis predicts a queue length greater than 0.75 miles and less than or equal to 5 miles; or

B. When System Ramp closures have a planned duration more than 72 consecutive hours; or

C. Overnight or weekend full closures of an urban freeway or expressway (or Mainline ramp) with nearby and available alternate freeways or expressways that allow for minimal impact to traffic and have been previously approved by the PIAC. (e.g., 670/71/315 in Columbus, 71/75/562/126 in Cincinnati, 76/77/277 in Akron, etc.).

VIII. PROJECT IMPACT ADVISORY COUNCIL (PIAC) APPROVALS

A. The DWZTM shall petition the PIAC for exceptions to the Allowable Queue Length Threshold in the following circumstances:

1. When the queue analysis predicts a queue length greater than 5 miles; or

2. When there are planned full freeway or expressway (including Mainline ramp) closures beyond the scope of the MOTEC approval as described in section VII.C.

B. In addition to the exception requests as outlined above; the DWZTM shall consult the PIAC “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 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 PIAC 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 PIAC will adversely affect the project file or sale date.

IX. SUPPLEMENTAL FUNDING FOR POLICY COMPLIANCE

For projects funded primarily by District Allocation, the DWZTM may request supplemental funding from the PIAC 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 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 or PIAC approvals involving full closures on the interstate system (in accordance with FHWA Ohio Division Memorandum dated June 26, 2015) and again upon implementation notification from the DWZTM as required in X.I.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, PIAC 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 – Summary of Procedure Requirements:

**MOT Procedure Exception Approval Requirements**

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<tr>
<th>Ramp Closures</th>
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<tbody>
<tr>
<td>A. District Deputy Director</td>
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<td>B. MOTEC</td>
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<td>C. PIAC</td>
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<tr>
<th>Lane Closures That Exceed Allowable Queue Threshold</th>
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<tr>
<td>D. District Deputy Director*</td>
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<td>E. MOTEC</td>
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<td>F. PIAC</td>
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<th>Mainline Full Closures</th>
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<td>G. MOTEC</td>
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<td>H. PIAC</td>
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<tr>
<th>Other Situations</th>
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<tr>
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<td>J. PIAC</td>
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*With appropriate TMP components addressed (per Section X) and advance notification to MOTEC per Section XI of Standard Procedure 123-001(SP)