
MAINTENANCE OF TRAFFIC

The Contractor shall conduct all Work necessary to meet the requirements associated with Maintenance of Traffic (MOT), including provisions for the safe and efficient movement of people, goods and services through and around the project while minimizing impacts to local residents and business and commuters.

Traffic Operations

Maintenance of Traffic Task Force

The Contractor shall establish a MOT task force to assure proper coordination with affected agencies. The MOT task force shall include, as a minimum, the Contractor's public information officer, and representatives from CDOT, the United States Air Force Academy (USAFA), Utility Companies, when applicable, and all applicable Local Agencies. The Contractor shall submit the proposed list of task force members to CDOT for Acceptance within 30 Days after the First NTP.

The MOT Task Force shall meet weekly, and shall be an integrated element of the Public Information Plan (PIP) Activities. An initial task for the MOT task force shall be to develop the Traffic Management Plan (TMP) in conformance to the requirements specified herein.

Traffic Management Plan

The Contractor shall prepare a Traffic Management Plan (TMP) which defines the strategic plan for traffic management on the Project. The TMP shall address major aspects of the Work for individual construction areas, phases, and stages as defined herein. These aspects shall include, but are not limited to, interchange closures, construction phasing and staging, numbers and type of major traffic shifts, detours, typical section requirements, pull out requirements and emergency access. The TMP shall be submitted to CDOT for Approval at least 30 Days prior to beginning the first phase or stage of construction.

Within -20 Days after NTP¹ the contractor will convene a TMP kick off meeting with CDOT, USAFA, and Local Agency representatives. The meeting will be used to develop agreement upon the level of detail required for the TMP as identified in this Section. The TMP is a planning and policy guide which shall be used by the Contractor to develop and execute the project MOT program.

Key components of the TMP shall include the following:

1. Overview and description of the proposed construction, subdivided, as applicable, into the following components:
 - A. Area: a specific grouping of Work along the Project defined by the Contractor which creates segments of the Project for the purpose of planning and executing the Work consistent with segments identified and included in the Contractor's Proposal, if any.
 - B. Phase: a specific sequence of the construction Work in an area during which a major traffic movement is redirected (e.g., a detour) and left in place until the Work is complete and traffic is redirected to another location. This is the level for

each specific Traffic Control Plan (TCP). In some cases, multiple TCPs may be required at this level.

- C. Stage: a subdivision of Work within a phase which combines similar components of Work to maintain efficiency. Sub-division below this level is at the Contractor's convenience. This is the level for individual (or sets) of Method of Handling Traffic (MHT) plans.
2. Detailed approach to the development of TCPs and MHTs on the Project.
 3. List of known or potential ramp and lane closures.
 4. Proposed detour routes.
 - A. Identification and, if available, planned schedule of other construction projects, within the vicinity of the proposed detour route. These construction projects shall be incorporated into the detour route planning and scheduling.
 - B. Identification of detour limits to be used in each construction phase.
 5. Approach to the use of Intelligent Transportation System/Variable Message Sign (ITS/VMS) boards and traffic signals, including coordination with the Local Agency or the CDOT Traffic Operations Center (TOC).
 6. Approach to Public Information.
 - A. The TMP shall include a checklist identifying specific items that shall be provided to the Contractor's public information officer on a regular basis for public information data collection and management Activities on the Project. The checklist shall provide the inclusion of supporting information relevant to coping messages and public awareness and shall be included in the Public Information Plan (PIP) as required in the Public Information Section.
 - B. The Contractor plan for coordinating the TMP Activities with those Activities required under the Public Information Section.
 7. Additional Elements.
 - A. Approach to coordination and cooperation with construction being performed by Utility Companies or other utility relocations, as required in the Utility Section.
 - B. Approach to coordination and cooperation with construction being performed by local agency projects.
 - C. Approach to coordination with transit and bus stop relocations.
 - D. Approach to traffic access management, including commercial vehicles and restrictions, bicycles, pedestrians, and potential impacts to handicapped mobility.
 - E. Relevant portions of the Incident Management Plan, described below.

- F. Approach to the use of emergency pullouts and the courtesy patrol.
- G. Approach to special event coordination.

Traffic Operation Center Coordination

The existing traffic signals, VMS boards and ITS system within the Project are available to assist the Contractor in completing the Work. Any physical work required for the existing traffic signals, VMS boards and the ITS system shall be the Contractor's responsibility.

The Contractor shall submit a written request for all support Activities, including the following information:

1. Traffic signals to be modified, either by Local Agencies or the Contractor.
2. VMS message text and board location.
3. Implementation dates, times and duration of modifications.
4. Reference TCP or MHT approval date.
5. Name, title and contact information of person requesting the modification.

CDOT Traffic Operations Center (TOC)

The Contractor may coordinate directly with the CDOT TOC in Denver for after-hours operation of VMS boards and ITS information only. The TOC is available to the Contractor to modify VMS messages 24 hours a day, 7 days per week, and may be contacted at (303) 512-5826.

Incident Management Plan (IMP)

The Contractor shall develop a detailed IMP as a companion to the TMP to manage traffic incidents and operations on the Project. The IMP shall, at a minimum, comply with the CDOT Guidelines for Developing Traffic Incident Management Plans for Work Zones.

As a minimum the IMP shall include the following components:

1. Public Information Plan.
2. Incident detection and identification.
3. Incident response.
4. Incident site management.
5. Incident clearance.
6. Motorist information and notification.
7. Courtesy patrol.
8. Emergency services notification (Local Police Departments, Colorado State Patrol (CSP), Local Fire Departments, ambulance services, and other emergency response providers)

9. Notification of school Districts with possible impacts to their school bus routes, student drop-offs and/or pedestrian facilities.
10. Geographic and other special constraints.
11. Available resources.
12. Operational procedures.

The IMP shall be submitted to CDOT for Acceptance within 90 Days after NTP.

Business and Private Access

The contractor shall make all reasonable efforts to maintain business and private access to the local street system.

Traffic Control Plans (TCPs) and Methods of Handling Traffic (MHTs) shall be developed incorporating stakeholder information from the PIP, available surveys and other pertinent studies relating to business and private access to the local street system and the interstate facility. The PIP identifies communication efforts to be used by the Contractor. At a minimum, the Contractor shall communicate and document the following information relevant to business and private access:

1. Identify access points impacted by a particular construction phase or stage.
2. Notify affected businesses and land owners and document all communications.
3. Schedule of closures and estimated durations.
4. Identify site-specific access or delivery requirements for local businesses. (deliveries, wide load vehicles, etc.)
5. Identify proposed mitigation efforts.

Maintenance of Traffic Variance Process

The Contractor may request a MOT variance for any closure, detour or other restriction beyond the specified limits defined herein. Variance requests should be submitted when safety is a concern and/or other project goals and criteria can be maximized. The following information shall be included in each MOT variance request;

1. Summary of the variance request.
2. Justification for the variance request including a list of the criteria which cannot be met and the reasons for not meeting that criteria.
3. Public notification methods and schedule.
4. List of emergency services and the schedule for their notification, if required.
5. List of affected agencies or private owners and the method(s) and schedule for their notification, if impacted.
6. Description of additional public information surveys to be performed, if required.
7. List of potential safety hazards to which motorists and citizens may be exposed, if any.
8. Proposed revisions to the Accepted TCP or current MHT, if required.

The Contractor shall allow CDOT a minimum of 7 Days for review and Approval of any MOT variance requests. CDOT may extend the review time if additional public information surveys are required or if revisions are requested. Local Agency approval will be required for detours utilizing local streets not specified within this section.

Contractor Response Time

The Contractor shall have at least one employee on call, via cellular phone, that can respond to an incident within 30 minutes. Upon arrival at the incident site, that employee shall assess the situation and immediately notify the appropriate personnel to implement the IMP. Upon notification of the incident, the Contractor shall immediately undertake actions necessary to restore full traffic operations.

Special Events

The Contractor shall identify and implement necessary changes in Work progress to accommodate traffic to and from special events, including but not limited to the following:

United States Air Force Academy (USAFA) graduation

USAFA sports events (football, basketball, etc.)

Local high school graduation ceremonies

Other events as determined by the PIP

No lane closures will be permitted on the day of the event. However, Work outside the travel lanes and shoulders will be permitted during special events.

Design Requirements

Work zone design criteria shall meet the requirements specified herein.

Traffic Control Plans

The TCP shall conform to the requirements specified herein and shall generally describe all traffic control signing, pavement markings and traffic control devices, and temporary signalization, including pedestrian and bicycle requirements necessary for each construction phase. Temporary traffic signals shall be installed in conformance with standards set forth in the Section 14.

Design Vehicle

The design vehicle shall be as described in the Roadway Section.

Design Speed and Posted Speed

Minimum design and posted speeds for Work zones shall conform to the following table:

TABLE 16-I

Location	Design Speed (mph)	Posted Speed (mph)
I-25 Mainline	65	55
I-25 Ramps	25	25
Local Streets	25**	25**

** : Contractor shall provide existing design and posted speed whenever it can be reasonably maintained on the local system.

Minimum Lane Requirements for Work Zones

Mainline

Two (2) lanes in each direction of mainline shall remain open between the hours of 5:30 AM and 8:30 PM, unless otherwise allowed herein. This Work time window shall allow for permitted interchange closures and progressive lane closures as identified herein.

Minimum lane widths for travel lanes on the mainline shall be 11 feet. Minimum outside shoulder widths on mainline shall be 8 feet.

Inside shoulder widths shall be a minimum of 2 feet.

When lane closures are approved, and mainline laneage is reduced to a single lane in one direction, the Contractor shall provide a minimum clear width of 16 feet to accommodate oversized vehicles.

Ramps

Minimum lane widths for ramps shall be 11 feet. Minimum shoulder width is 2 feet. A minimum of one lane shall remain open on all ramps.

Local Roads

For the purpose of this Section, local roads are defined as any portion of Highway excluding mainline and ramps.

Minimum lane widths for local roads shall be 11 feet. Minimum shoulder width is 2 feet. One lane in each direction shall remain open at all times.

Courtesy Patrols

The Contractor shall provide courtesy patrols within the project limits as part of the implementation of the IMP. The following measures shall be required for the courtesy patrol element of the IMP:

1. Coverage shall be on mainline, its ramps and within the Project limits.
2. Service shall be on-Site and provided during the following times:
 - A. Monday thru Friday, 7:00 AM to 9:00 AM and 3:00 PM to 6:00 PM.
 - B. Special events as defined herein.
3. The courtesy patrol vehicle shall be a tow truck vehicle meeting DOT standards. The patrol vehicle shall provide cellular phone use for stranded motorists. Phone service shall be provided at no cost to the vehicle operator.
4. The courtesy patrol operator shall be in contact with the TOC and the Contractor, via cellular phone, during all hours of courtesy patrol operation. Courtesy Patrol must be on-call and respond within 30-minutes on Saturday and Sunday.
5. The courtesy patrol shall respond immediately upon discovery of a disabled vehicle.

The courtesy patrol shall tow, at no cost to the vehicle operator, the disabled vehicle to a location identified in the IMP. Courtesy patrol hours shall be communicated as part of Contractor's coping messages.

Lane Closures

Before any lanes are closed, an appropriate MHT shall be approved by the Engineer and Accepted by CDOT. No lane closures, ~~other than the interchange closures previously defined~~ will be allowed from 5:30 AM Friday morning through 8:30 PM Sunday night. Lane restrictions below must be acknowledged and Accepted by CDOT at least 5 working Days in advance of the closure, unless required by construction emergencies or other reasonably unforeseen events. The following closures will be allowed during weekdays:

1. One lane closure in each direction – 8:30 PM to 5:30 AM.
2. Full closure – 10:00 PM to 5:00 AM (with Approved detour).

Detour Routes

Unless otherwise specified, only state highways shall be used for detour routes. Local Agency routes available for use as detours must be Approved by the Local Agency. Detour routes shall be the shortest length possible.

The Contractor may propose alternate detour routes within the MOT variance process.

Construction Requirements

The Contractor shall provide installation, maintenance, and removal of all temporary traffic control devices.

Temporary Traffic Control Devices

Construction Signing

Construction signing within the Project limits and all detours shall comply with CDOT Standard Specifications, the MUTCD and all other applicable standards set forth herein.

Temporary Traffic Signals

Temporary Traffic Signals shall comply with Section 14. Upon discovery of a signal malfunction, the Contractor shall immediately notify the entity responsible for the signals.

Temporary Marking Paint and Signs

The Contractor shall furnish, apply and remove temporary pavement marking paint in accordance with the Standard Specifications. Temporary paint striping shall meet the conformity of lines, dimensions, patterns, locations and details established in the Contractor's TCP and MHT.

1. Temporary pavement paint striping shall be re-striped a minimum of once a month, and as required to maintain safe traffic operations.
2. No epoxy-based paint shall be allowed on concrete pavement surfaces for temporary striping.
3. Hydro blasting, or other methods that do not result in scaring of permanent pavements shall be used for removal of temporary striping.

Wood signposts will be allowed for installation of temporary signs. Temporary wood light poles will be allowed for installation of temporary lighting.

Maintenance of Temporary Traffic Control Devices

The Contractor shall be responsible for the maintenance of all temporary traffic control devices within the Project limits, including the local street system.

Detour Pavement

The Contractor shall provide a paved surface for all detours. Detour pavement locations shall be generally described in the Contractor's TMP and detailed in the Accepted TCP. The Contractor shall determine the type and thickness of pavement that shall be used to accommodate existing traffic loadings.

The Contractor shall maintain the detour pavement for the entire period that it is open to the traveling public, including all temporary approaches, accesses, crossings and intersections with adjacent Roads and Streets. Detour pavements shall be maintained in good operating condition devoid of potholes, uneven surfaces and rutting. CDOT may direct the Contractor to repair or replace detour pavements if, in their sole discretion, detour pavements are determined to be in poor condition. Detours that use existing streets pavements shall be subject to pavement repair or replacement where it is determined that the condition of the existing pavement has noticeably deteriorated over the duration of its use as a detour.

The Contractor shall be responsible for the complete removal and disposal of all temporary detour pavement.

Temporary Lighting

The Contractor shall maintain temporary lighting at a level equivalent to existing lighting provided on mainline, ramp gores, ramp intersections and local streets.

Project Special Provisions

The following specifications modify and take precedence over the Standard Specifications.

Construction Zone Traffic Control

Section 630 of the Standard Specifications is hereby revised for this project as follows:

Subsection 630.09 shall be deleted and replaced with the following:

630.09 Traffic Control Plan. The Contractor shall prepare a Traffic Control Plan (TCP) to control traffic on the Project. To implement the TCP, the Contractor shall develop and submit a method for handling traffic (MHT), described below, for each different stage of construction which shows the Contractor's proposed construction staging and proposed traffic control devices consistent with the TCP. If at any time the Contractor desires to change the MHT, it shall be considered a different stage requiring a new MHT. The TCP shall be submitted to CDOT for Acceptance at least 7 Days prior to implementation of the particular TCP. CDOT may extend review time if revisions are necessary.

Any major revision to the Traffic Control Plan (TCP), as determined by CDOT, shall require submission of a new TCP for Acceptance.

Except where lane closures are not proposed, each proposed MHT shall be approved in writing by the Engineer before the corresponding stage of construction will be allowed to begin. Those stages of construction which require a lane closure, as defined herein shall also require an Accepted MHT by CDOT. The Contractor shall submit MHTs requiring CDOT Acceptance at least 7 Days prior to implementation of the particular MHT. CDOT may extend review time if revisions are necessary.

The proposed MHT shall include as a minimum the following:

1. A detailed diagram which shows the location of all traffic control devices, including advance construction signs and speed limit signs; method, length and time duration for lane closures; and location of flaggers and time duration of the flagging operation. Lane closures shall be kept to a minimum in both length and duration, and cause a minimum of interference to the traveling public, consistent with the Work being performed.
2. A listing of all traffic control devices shown in the detailed diagram including, but not limited to: construction signs; vertical panels; vertical panels with light; type 1 and type 2 barricades; type 3 barricades; cones, drum channelizing devices; concrete barrier (temporary); advance warning flashing or sequencing arrow panels.
3. The Contractor shall furnish supporting references from documents such as the MUTCD, Standard Plans, etc. for any devices incorporated into the MHT which are not consistent with the Accepted TCP for that phase of the Work.
4. An access maintenance plan for all properties requiring access during construction. This plan shall also indicate the areas where equipment will be stored, vehicles parked, and construction signs and materials stored, if within the Project limits. The Contractor shall ingress and egress the Project at existing access points, including median crossings, shown on the Accepted TCP, unless otherwise Approved by CDOT.
5. A plan for maintaining and controlling pedestrian, bicycle and other non-vehicular traffic.
6. A plan for emergency vehicle access.

Deliverables

The Contractor shall submit the following to CDOT for Approval and/or Acceptance:

Deliverable	Acceptance or Approval	Schedule
List of MOT task force members	Acceptance	Within 30 Days following First NTP
Traffic Management Plan (TMP)	Approval	30 Days prior to start of 1 st phase or stage of work
Incident Management Plan (IMP)	Acceptance	Within 90 Days after First NTP
MOT variance request	Approval	7 Days prior to the requested date for the change
Traffic Control Plan (TCP)	Acceptance	At least 7 Days prior to implementation of the TCP
Method of Handling Traffic (MHT)	Acceptance	At least 7 Days prior to implementation of the MHT requiring a lane closure

All deliverables shall also conform to the requirements of Quality Section.