

## 16.0 TRANSPORTATION MANAGEMENT PLAN

This Section 16 includes the requirements for the Transportation Management Plan Work for the R2B2 Design Build Project (Project). This Work shall be completed in accordance with the Contract Documents.

The Transportation Management Plan (TMP) defines the strategies for managing the Work zone impacts of the Project. The TMP shall include a Maintenance of Traffic (MOT) Plan, a Traffic Operations Plan (TOP), and Traffic Control Plans (TCP); and shall incorporate the coping elements of the Public Information Plan (PIP) detailed in Book 2, Section 4.

### 16.1 Administrative Requirements

#### 16.1.1. Standards

The Contractor shall design and construct the Project in accordance with the requirements of the standards in the documents listed in Table 16-1 and those referenced in Book 3. The Contractor shall use the latest adopted edition at the time of the Proposal Due Date.

**Table 16-1 Standards**

| Author or Agency  | Title  |
|---|--|
| American Association of State Highway and Transportation Officials (AASHTO) | <i>Roadside Design Guide</i>   |
| American Association of State Highway and Transportation Officials (AASHTO) | <i>Highway Safety Manual</i>   |
| American Traffic Safety Services Association (ATSSA)                        | <i>Quality Guidelines for Work Zone Traffic Control Devices</i>                                |
| ATSSA   | <i>Guidelines on the Use of Positive Protection in Temporary Traffic Control Zones</i>         |
| Colorado Department of Transportation (CDOT)                                | <i>Guidelines for the Use of Positive Protection in Work Zones</i>                             |
| CDOT  | <i>M&amp;S Standard Plans</i>  |
| CDOT  | <i>Standard Specifications for Road and Bridge Construction (CDOT Standard Specifications)</i> |
| CDOT  | <i>Roadway Design Guide</i>  |
| CDOT  | <i>Guidelines for Developing Traffic Incident Management Plans for Work Zones</i>              |
| CDOT  | <i>The Colorado Supplement to the Federal Manual on Uniform Traffic Control Devices</i>        |
| CDOT  | <i>Sign Design Manual</i>  |

|                                       |   |
|---------------------------------------|---|
| CDOT                                  | Work Zone Safety and Mobility Program:<br><a href="http://www.codot.gov/library/traffic/lane-close-work-zone-safety/work-zone-safety">http://www.codot.gov/library/traffic/lane-close-work-zone-safety/work-zone-safety</a> |
| CDOT                                  | <i>Work Zone Safety and Mobility Rule</i>   |
| CDOT                                  | <i>Region 2 Lane Closure Strategy</i>   |
| Federal Highway Administration (FHWA) | <i>Manual on Uniform Traffic Control Devices (MUTCD)</i>  |
| FHWA                                  | <i>Standard Highway Signs (with supplements)</i>  |

## 16.2 Transportation Management Plan

The Contractor shall prepare a TMP that 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, county Road and local Road closures, Bridge closures, construction phasing and staging, numbers and type of major traffic shifts, detours, typical section requirements, pullout requirements, emergency and construction access, pedestrian impacts, and detours. The TMP is a planning and policy guide that the Contractor shall use to develop and execute the Project MOT program.

The TMP shall be submitted to CDOT for CDOT Acceptance prior to the Second Notice to Proceed (NTP2). No Work that impacts traffic shall commence until the TMP is Accepted.

The major aspects of the TMP shall include, but are not limited to:

1. An overview and description of the proposed construction, including maintenance of traffic during construction, and major traffic shifts.
  - 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. A detailed approach to the development of TCPs and Methods of Handling Traffic (MHT) on the Project per Book 2, Section 3. MHT plans shall be submitted to CDOT for Approval 5 Days prior to the implementation of each MHT.
3. A list of known or potential Roadway, ramp, and lane closures and traffic shifts, including the following information:

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- A. Description of traffics shift.
  - B. Description of detour:
    - i. Specific routes used.
    - ii. Identification of detour limits to be used in each construction phase.
    - iii. Contractor’s identification and coordination with other construction projects within the vicinity of the proposed detour route. The impact of these construction projects shall be incorporated into the detour route planning and scheduling.
  - C. Number of shifts expected.
  - D. Duration of shifts and detours.
4. An approach to the use of existing and temporary Variable Message Sign (VMS) boards and traffic signals, including coordination with CDOT and the Contractor’s representative.
5. The Contractor’s plan for coordinating the TMP Activities with those Activities required under Book 2, Section 4.
- A. A checklist identifying specific items that shall be provided both to the Contractor’s Public Information Manager (PIM) and to CDOT every Thursday by 10:00 a.m. for public information data collection and management Activities on the Project. The checklist shall include supporting information relevant to coping messages and public awareness and shall be included in the PIP required in Book 2, Section 4.
  - B. An approach to night Work that addresses the night work requirements of Book 2, Section 5. Any night Work will require written preapproval from the local governing county and Approval from CDOT.
6. Additional Elements:
- A. An approach to coordination and cooperation with construction being performed by other projects along US 350, US 24, CO 239 and CO 9.
  - B. Approach to coordination and cooperation with construction being performed by Utility Companies or other Utility Relocations, as required in Book 2, Section 7.
  - C. An approach to traffic access management, including commercial vehicles and restrictions, bicycles, pedestrians, and potential impacts to handicapped mobility.

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- D. Relevant portions of the Incident Management Plan (IMP) described in Section 16.2.2.2.
  - E. An approach to handle oversized loads through the Project.
  - F. An approach to coordination with US Army Pinyon Canyon Maneuver Site.
  - G. If needed, approach to coordinate local county pit access routes.
7. Typical section requirements.
8. Emergency requirements:
- A. Pull-out locations.
  - B. Emergency access.
  - C. Colorado State Patrol (CSP)
  - D. Traffic Incident Management Plan
    - i. Plan per segment and county
9. Temporary closure scenarios:
- A. Location
  - B. Time and duration
10. Access:
- A. Business/home/property
  - B. Work site (area)
  - C. Pedestrian/Bike
11. Construction zone temporary speed reduction: Temporary speed reduction, if warranted, must be authorized by a Form 568 approved by the Region 2 Traffic Engineer or designee. Temporary speed reduction may be authorized during the construction phasing of the Project.
- A. The Contractor shall submit a Form 568 to CDOT for Approval 7 Days prior to the date when speed reduction is to be implemented.

12. MHT Requirements

13. Traffic control device maintenance:

- A. A Work plan to meet the requirements of Section 16.4.2 shall to be provided to CDOT. This Work plan shall include, at a minimum, detailed staff commitments and contacts, along with a plan to deploy equipment and resources.

**16.2.1 Maintenance of Traffic Plan**

The following elements shall be considered part of the MOT plan and shall be addressed in the TMP.

**16.2.1.1 Transportation Management Plan Task Force**

The Contractor shall establish a TMP task force to assure proper coordination with affected Local Agencies. The TMP Task Force shall include, at a minimum, the Contractor's PIM, the Contractor's TCS, the Contractor's superintendent, representatives from CDOT, cities, counties, and others as needed if Local Agency facilities are impacted. The Design-Build Project Manager or the Project Construction Manager shall be designated as the main point of contact for the MHT's, MOT's, and traffic control related issues. The Contractor shall submit the proposed list of TMP task force members to CDOT for Acceptance within 30 Days after NTP1.

The TMP task force shall be included in the weekly status meetings as required in Book 2, Section 2 and shall be an integrated element of the Public Information Plan (PIP).

In addition to regular weekly status meetings, the Contractor shall schedule and conduct TMP task force meetings to present and discuss Contractor-prepared narratives identifying processes and critical elements of all lane closures and coordination Activities.

Within 14 Days after CDOT's Acceptance of the TMP task force members, the Contractor shall convene a TMP kick-off meeting. The meeting shall be used to develop an agreed-upon level of detail required for the TMP, as described in this Section 16.

**16.2.1.2 Business and Private Access**

The Contractor shall maintain public and private access to the local Street and Highway systems at all times. Temporary signage to business entrances shall be provided during construction to draw attention to Highway access points. TCPs and MHTs shall incorporate Stakeholder information from the PIP outlined in Book 2, Section 4, available surveys, and other pertinent studies relating to business and private access to the local Street system and the Highway. At a minimum, the Contractor shall communicate and document the following information relevant to business and private access:

1. Access point impacted by a particular construction phase or stage.
2. All notifications of affected business and land owners.
3. Schedule of closures and estimated durations.

4. Site-specific access or delivery requirements for local business (deliveries, wide load vehicles, etc.).
5. Proposed access mitigation efforts.

### 16.2.1.3 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 or *Region 2 Lane Closure Strategy Guide*. 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 that cannot be met and the reason(s) for not being able to meet them.
3. Public notification methods and schedule.
4. List of affected emergency services and the schedule for notification.
5. List of affected Local Agencies or private owners and the method(s) and schedule for notification.
6. Description of additional public information surveys to be performed, if required.
7. List of any potential safety hazards to which the public may be exposed.
8. Proposed revisions to the Accepted TCP or current MHT.
9. Proposed duration of closure, detour, or phasing change for which a variance is requested.

The Contractor shall allow CDOT a minimum of 14 Days for Review and Approval of any MOT variance requests. The Contractor shall obtain Local Agency approval for detours utilizing non-State-owned facilities. If Local Agency approvals are necessary, they shall be obtained prior to submittal of the MOT to CDOT.

### 16.2.1.4 Detour Routes

There are no approved detour routes. Full ~~lane-highway~~ closures will not be allowed. The Contractor may propose alternate detour routes within the MOT variance process.

Detour route options have been analyzed for each structure and are shown in the Traffic Memorandum's for each structure in the Reference Documents.

### 16.2.1.5 Bicycle Impacts

If existing bicycle accommodations exist along CO 9, CO 239, US 350, and US 24, they shall be maintained at all times.

## 16.2.2 Traffic Operations Plan

The TOP shall address the operations and management of the transportation system in the Work zone impact area. The TOP shall address the components described below.

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### 16.2.2.1 Variable Message Signs

Public notices shall be provided through VMS boards to warn motorists of major traffic shifts, detours and Road closures 1 week prior to and 2 weeks after a change in the traffic pattern. The VMS boards shall be placed on the affected route in advance of the construction zone.

The existing VMS boards and ITS system within the Project are available to assist the Contractor in completing the Work. The Contractor shall submit written requests for review 14 days prior to requested date for modification for all support Activities, including the following information:

1. VMS message text and board location.
2. Implementation dates, times and duration of modifications.
3. Reference TCP or MHT approval date.
4. Name, title and contact information of person requesting the modification.

The JOC is available to the Project to modify VMS messages 24 hours a day, 7 days a week, and may be contacted at (719) 562-5555.

The Contractor shall coordinate with CDOT and the JOC for emergencies in accordance with the Accepted IMP.

### 16.2.2.2 Incident Management Plan (IMP)

The Contractor shall develop a detailed IMP by each segment and county as a companion to the TOP to manage traffic incidents and emergency operations on the Project Site. Emergency service providers shall be contacted and provided an access plan during construction to minimize delays and response times for emergency services.

The IMP shall comply with the CDOT Guidelines for Developing Traffic Incident Management Plans for Work Zones.

At a minimum, the IMP shall include the following components:

1. Coordination with the PIP, as described in Book 2, Section 4.
2. Incident detection and identification.
3. Incident response.
4. Incident Site management.
5. Incident clearance.
6. Dissemination of traveler information regarding incidents.
7. Emergency services notification, including local area police departments, the Colorado State Patrol, local area fire departments, ambulance services, and any other emergency response providers.
8. Notification of local school districts about possible impacts to school bus routes, student drop-offs, and/or pedestrian facilities.
9. Geographic and other special constraints.
10. Available resources.
11. Operational procedures.

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The IMP shall be submitted to CDOT for Acceptance within than 30 Days prior to NTP2. No Work that impacts traffic shall commence until the IMP is Accepted.

### **16.2.2.3 Contractor Response Time**

The Contractor shall have at least 1 employee(s) on call 24 hours a day, 7 days a week via cell phone, who shall respond to an incident within 30 minutes, 24 hours a day, 7 days a week. Upon arrival at the incident site, that employee shall assess the situation, shall be authorized to direct Work, and shall immediately notify the appropriate personnel to implement the IMP. Upon notification of the incident, the Contractor shall immediately undertake actions necessary to restore traffic operations to the maximum extent practicable.

### **16.2.2.4 Special Events**

The Contractor shall coordinate with CDOT, the local agencies, and the Public Information Officer as specified in Book 2, Section 4 – Public Information to develop a list and schedule of special events. The Contractor shall update the list as events are identified or scheduled. The special event calendar shall be a standing agenda item at the Transportation Management Task Force meetings.

The Contractor shall identify and implement necessary changes in Work progress to accommodate traffic to and from special events. No lane closures on US 350, US 24, CO 9, CO 239, ramps, county roads and local roads shall be permitted on any day(s) of the event unless Approved by CDOT. Work outside the travel lanes, ramps and shoulders will be permitted during special events.

Contractor shall make necessary adjustments when possible to accommodate traffic on US 24 and CO 9 when I-70 or US 285 is closed due to winter storms.

### **16.2.2.5 Coordination with Adjacent Projects**

Other projects along CO 9, CO 239, US 350, and US 24 may occur during the construction of this Project. The Contractor shall coordinate construction traffic and detour impacts with CDOT and contractors on those projects to minimize simultaneous closures or impacts to adjacent or alternate routes.

### **16.2.3 Communications Plans**

The TMP shall reference the appropriate sections of the PIP and the Crisis Communications Plan developed in accordance with Book 2, Section 4.

## **16.3 Design Requirements**

The Contractor's Engineer in responsible charge of the MOT design shall prepare, review, and approve the TCP, Released for Construction (RFC) Documents, and Field Design Changes. These plans shall be in conformance with the TMP described in this Section 16.

Additional Requested Elements (AREs): The Contractor shall submit proposed compliance of all MOT design requirements in this Section 16 – Transportation Management Plan for AREs to CDOT for Approval.

**16.3.2 Traffic Control Plans**

The Contractor shall prepare TCPs to control traffic on the Project. The TCPs shall conform to the requirements specified herein, the CDOT *Standard Specifications for Road and Bridge Construction (CDOT Standard Specifications)*, and the most current version of the Manual on Uniform Traffic Control Devices (MUTCD). The TCPs shall generally describe all lane and Shoulder configurations, including widths, traffic control signing, pavement markings, traffic control devices, temporary signalization, flagger locations, construction access, construction parking, emergency access, Work areas, and pedestrian/bicycle requirements necessary for each construction phase.

The TCP shall be submitted to CDOT for Acceptance 14 Days prior to implementation of the particular TCP.

Any major revision to a TCP, as determined by CDOT, shall require submission of a new TCP for Acceptance.

**16.3.3 Method of Handling Traffic**

The Contractor shall prepare MHT’s in accordance with the Special Provisions included in Book 2, Sections 19 and 20.

Temporary traffic signals shall be installed in conformance with standards set forth in Book 2, Section 14 – Signing, Pavement Marking, Lighting and ITS, and Section 20 – Project Special Provisions.

**16.3.4 Design Vehicle**

The design vehicle shall be as described in Book 2, Section 13 – Roadways.

**16.3.5 Temporary Work Zone Design Speed and Posted Speed**

Minimum design and posted speeds for Work zones shall conform to those listed in Table 16-2.

Design speeds shall in all cases be equal to or greater than the posted speed. The Contractor shall provide existing design and posted speed whenever it can be reasonably maintained. In the event speed reductions are required, the Contractor shall submit Form 568 to CDOT for allowable speed reductions as shown in Table 16-2.

**Table 16-2 Design and Posted Speeds for Work Zones**

| <u>Structure Location</u> | <u>Highway</u> | <u>Mile Post</u> | <u>Design Speed (mph)</u> | <u>Construction Posted Speed (mph)</u> |
|---------------------------|----------------|------------------|---------------------------|--|
| <u>J-15-G</u>             | <u>CO 9</u>    | <u>15.97</u>     | <u>25</u>                 | <u>25</u>                              |

|                     |               |               |            |            |
|---------------------|---------------|---------------|------------|------------|
| <u>J-14-C</u>       | <u>CO 9</u>   | <u>20.11</u>  | <u>40</u>  | <u>40</u>  |
| <u>G-12-C</u>       | <u>CO 9</u>   | <u>71.44</u>  | <u>50</u>  | <u>45</u>  |
| <u>I-13-G</u>       | <u>US 24</u>  | <u>227.10</u> | <u>40</u>  | <u>40</u>  |
| <u>I-13-H</u>       | <u>US 24</u>  | <u>229.47</u> | <u>50</u>  | <u>45</u>  |
| <u>H-13-N</u>       | <u>US 24</u>  | <u>240.69</u> | <u>50</u>  | <u>45</u>  |
| <u>I-15-T</u>       | <u>US 24</u>  | <u>271.69</u> | <u>40</u>  | <u>40</u>  |
| <u>I-15-AO</u>      | <u>US 24</u>  | <u>271.90</u> | <u>40</u>  | <u>40</u>  |
| <u>I-17-X</u>       | <u>US 24</u>  | <u>295.45</u> | <u>N/A</u> | <u>N/A</u> |
| <u>O-19-D</u>       | <u>US 350</u> | <u>10.29</u>  | <u>50</u>  | <u>45</u>  |
| <u>N-21-C</u>       | <u>US 350</u> | <u>47.13</u>  | <u>50</u>  | <u>45</u>  |
| <u>N-21-F</u>       | <u>US 350</u> | <u>48.74</u>  | <u>50</u>  | <u>45</u>  |
| <u>M-21-C</u>       | <u>US 350</u> | <u>50.58</u>  | <u>50</u>  | <u>45</u>  |
| <u>M-21-B</u>       | <u>US 350</u> | <u>51.68</u>  | <u>50</u>  | <u>45</u>  |
| <u>M-21-J</u>       | <u>US 350</u> | <u>57.07</u>  | <u>50</u>  | <u>45</u>  |
| <u>M-22-Y</u>       | <u>US 350</u> | <u>57.47</u>  | <u>50</u>  | <u>45</u>  |
| <u>M-21-I</u>       | <u>US 350</u> | <u>56.45</u>  | <u>50</u>  | <u>45</u>  |
| <u>M-22-U</u>       | <u>US 350</u> | <u>69.82</u>  | <u>50</u>  | <u>45</u>  |
| <u>P-19-G Minor</u> | <u>CO 239</u> | <u>1.74</u>   | <u>30</u>  | <u>25</u>  |

### 16.3.6 Minimum Lane and Shoulder Requirements

#### 16.3.6.1 Lane and Shoulder Restrictions

Before any travel lanes or Shoulders are closed, the Contractor shall submit an appropriate MHT or TCP to CDOT for Acceptance.

The Contractor shall submit lane restrictions to CDOT by Thursday 10:00 a.m. of the week prior to the Work (for Work Sunday through Saturday), unless required by construction emergencies or other reasonably unforeseen events.

Minimum lane and Shoulder widths during construction shall be according to Table 16-3.

**Table 16-3 Minimum Lane and Shoulder Widths**

| Location           | Travel Lanes | Shoulder |         |
|--------------------|--------------|----------|---------|
|                    |              | Inside   | Outside |
| All State Highways | 11 ft.       | 2 ft.    | 2 ft.   |
| All County Roads   | 10 ft.       | 0 ft.    | 0 ft.   |

When lane closures are Approved, and mainline lanes are reduced to a single lane in one direction, the Contractor shall provide a minimum clear width of 15 feet.

### **16.3.6.2 Lane Closures**

Before any lanes are closed, an appropriate MHT shall be approved by the Contractor, the Traffic Control Supervisor, and Accepted by CDOT. Lane closures shall be submitted to CDOT for Acceptance at least 7 Days in advance of the closure, unless required by construction emergencies or other reasonably unforeseen events.

Any changes to closures, restrictions, and/or times to the requirements herein shall be submitted to CDOT. Contractor Request shall be prior to the Final submittal due date for all ACC and ATC's. CDOT Approval or Denial of request shall occur prior to Final RFP addendum.

All lane closures shall be in accordance with CDOT *Region 2 Lane Closure Strategy*. To perform lane closures outside of the CDOT *Region 2 Lane Closure Strategy* restrictions, approval from CDOT shall be obtained. All highway mainlines shall maintain traffic flow throughout the duration of the project.

### **16.3.6.3 Local Roads**

All variances for local Street lane closures and lane reductions shall be approved by CDOT and the local respective jurisdiction.

## **16.4 Construction Requirements**

### **16.4.1 Temporary Traffic Control Devices**

The Contractor shall install, maintain, and remove all temporary traffic control devices.

#### **16.4.1.1 Construction Signing**

Construction signing within the Project limits and all detours shall comply with CDOT Standard Specifications, the MUTCD, and all other applicable standards. The Contractor shall maintain all existing guide signs, warning signs, and regulatory signs during construction. Construction signing and construction signing maintenance shall be the responsibility of the Contractor.

All signs in place for more than 3 Days shall be post-mounted.

#### **16.4.1.2 Temporary Barriers**

The Contractor shall maintain a clear zone in accordance with the AASHTO Roadside Design Guide. When clear zone cannot be obtained, the Contractor shall use barriers to positively separate traveled lanes from Work zones. All Work zone traffic control devices, barriers, crash cushions, and impact attenuators MASH TL-3 requirements.

Temporary barriers within the Project limits and all detours shall comply with CDOT Standard Specifications, CDOT M&S Standards, and the AASHTO Roadside Design Guide. All barrier termini within the clear zone shall have an approved end treatment. Barrier shall be installed per CDOT Standard M-606-14 when adjacent to roadside Work zone, obstructions, obstacles,

hazards, and vertical drop-offs. Pinning of temporary barriers into new permanent pavement will not be allowed.

Temporary barriers shall be located so as to not negatively affect temporary drainage in current or future phases.

#### **16.4.1.3 Temporary Marking Paint and Signs**

The Contractor shall furnish, apply, and remove temporary pavement marking paint in accordance with CDOT Standard Specifications. Temporary paint striping shall meet the conformity of lines (including no overspray), dimensions, patterns, locations, retroreflectivity, and details established in the Contractor's TCP and MHT.

All temporary edge line shall be a minimum of 4 inches wide.

1. Temporary pavement paint striping shall be restriped as required to meet retroreflectivity standards and maintain safe traffic operations.
2. Hydroblasting, or other methods that do not result in scaring of permanent pavements shall be used for removal of temporary striping.
3. For temporary alignments in place for 3 months or more, modified epoxy striping shall to be used.

Barrier reflector strips shall be installed on all temporary barrier when barrier is within 4 feet of the traffic, per the CDOT Standard S-612-1. The spacing between each 3-foot panel shall be no more than 50 feet.

Delineation shall be placed and maintained through all phases of Work, including lighted areas.

#### **16.4.1.4 Temporary Traffic Signals**

Temporary traffic signals shall comply with the Project Special Provisions.

Upon discovery of a signal malfunction, the Contractor shall have a representative on site within 30 minutes to resolve the malfunction. Signal timing shall satisfy the queue requirements.

#### **16.4.2 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 and county Road systems. All traffic control devices shall meet MUTCD requirements, including retroreflectivity standards, and shall meet the acceptable standard as defined by the ATSSA *Quality Guidelines for Work Zone Traffic Control Devices*. All devices shall be cleaned a minimum of every 2 weeks. If any traffic device's reflectivity is not in accordance with the most recent MUTCD, the Contractor shall replace the traffic control device within one (1) day of notification form CDOT.

#### **16.4.3 Detour Pavement**

The Contractor shall provide a paved surface for all detours. Design and construction of detour pavement shall conform to the requirements of Book 2, Section 10. Detour pavement locations shall be generally described in the Contractor's TMP and detailed in the Accepted TCP.

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, at CDOT's sole discretion, detour pavements are determined to be in poor condition. Detours that use existing Roads 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.

Cross slope breaks between existing pavements, detours, and crossovers shall not exceed 4.0%.

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

#### **16.4.4 Queue Delays During Construction**

The Contractor shall monitor queue lengths and durations on all Roads within the Project limits whenever a lane closure is in effect. If the queue times exceed 20 minutes, the Contractor shall notify CDOT and adjust the detours, lane closures, and traffic control devices, including advanced warning signage, to minimize delay. If queue lengths extend beyond the location of the advance warning signs, the Contractor shall adjust the detours, lane closures, traffic control devices, including advanced warning signage; and shall provide advance warning to motorists of stopped traffic.

#### **16.4.5 Working Time Violation Incidents**

If there is a violation of the working time limitations for traffic control as allowed for in this Section 16, the contractor will first be issued a written notice to stop Work at the start of the next Day. Work shall not resume until the Contractor ensures CDOT, in writing, there will not be a reoccurrence of the working time violation. Subsequent Incidents, beyond this first written notice, will be assessed a price reduction. The working time violation incident (WTVI) price reduction charges shall be reflected on the Contractor's Monthly Invoice. Price reductions will not be considered a penalty, but will be a price reduction for failure to perform traffic control in compliance with the Contract.

A WTVI is any violation up to 30 minutes in duration. Each 30 minutes or increment thereof will be considered a WTVI. A price reduction will be assessed for each successive or cumulative 30-minute period in violation of the working time limitations, as determined by CDOT.

WTVI charges shall be as follows:

1. \$310 per WTVI for US 350, US 24, CO 239, and CO 9.
2. \$310 per WTVI for all local and county roads.

**16.4.5 Uniformed Traffic Control**

If the Contractor chooses to utilize uniformed traffic control for the project, the Contractor shall contract with either the Colorado State Patrol or a uniformed police agency, for uniformed traffic control services and vehicles needed or desired in the execution of the Work. The Contractor shall provide a copy of the Contract with either the Colorado State Patrol or a uniformed police agency to CDOT for Review.

The officer shall have completed “The Safe and Effective Use of Law Enforcement Personnel in Work Zones” Training Course. The Contractor shall provide copies of documentation to CDOT certifying the officer’s successful completion of this course.

If a uniformed police agency is used, the traffic control vehicles shall be white sedans furnished with Class 1 SAE certified light bar and control panel for exclusive use by uniformed police agency officers while performing Uniformed Traffic Control. The light bar shall have the following configuration:

- (1) A minimum of 44 inches in length, and shall be either permanently or temporarily attached to the top of the vehicle.
- (2) A flash red on the driver side and blue on the passenger side.
- (3) Equipped with an amber-colored directional device in the rear of the bar.
- (4) Have alley and takedown lights.
- (5) The control panel shall be capable of controlling the front of the bar and the rear of the bar separately.
- (6) The traffic advisor shall be controlled separately.

The light bars shall be mounted on traffic control vehicles, and shall be maintained in good operating condition at all times. The Contractor shall obtain a permit from the police or sheriff department, as appropriate, for the use of the light bars. The Contractor shall keep the light bars covered at all times when the traffic control vehicle is being used by someone other than the authorized uniform police agency officer.

**16.5 Deliverables**

At a minimum, the Contractor shall submit the following to CDOT (and Local Agencies when applicable) for Review, Acceptance, or Approval:

**Table 16-5 Deliverables**

| Deliverable                          | Review, Acceptance, or Approval | Schedule                  |
|--------------------------------------|---------------------------------|---------------------------|
| Transportation Management Plan (TMP) | Acceptance                      | Prior to NTP2             |
| TMP task force members               | Acceptance                      | Within 30 Days after NTP1 |

|  |            |   |
|--|------------|---|
| Requests to CDOT for modifications to VMS messages | Review     | By 10:30 a.m. on Thursday of the week prior to when the VMS boards will be needed |
| Incident Management Plan (IMP)                     | Acceptance | Within 30 Days prior to NTP2  |
| CDOT Form 568 for temporary speed reduction        | Approval   | 7 Days prior to the date when speed reduction is to be implemented.               |
| Traffic Control Plan (TCP)                         | Acceptance | At least 14 Days prior to implementation of each TCP                              |
| Method of Handling Traffic (MHT)                   | Acceptance | At least 5 Days prior to implementation of each MHT                               |
| Maintenance of Traffic (MOT) Variance request      | Approval   | 14 Days prior to implementation of MOT  |
| Lane closure request                               | Acceptance | 7 Days prior to implementation of   |

## 16.6 Exhibits

Exhibit 16-A: CDOT Form 568 Temporary Speed Limit Reduction