

Proposed Design and Construction Standards Revisions to Add Section 2.13, Temporary Traffic Control

(January 30, 2009)

2.13 Temporary Traffic Control

(A) Scope

The provisions of this section shall apply to temporary traffic control measures to be applied to work, work activity, construction and maintenance performed in the public right-of-way or public easements pursuant to an approved right-of-way permit or public project as set forth in Chapter 8-5: Work in the Public Right-of-Way and Public Easements, B.R.C. 1981.

(B) Adoption of Standards in the Manual on Uniform Traffic Control Devices

The Federal Highway Administration 2003 Edition of the Manual on Uniform Traffic Control Devices, Part 6, "Temporary Traffic Control," is hereby adopted by reference in these Standards as the city of Boulder temporary traffic control standards, except as specifically amended or supplemented by the provisions of this section.

(C) Intent

The purpose of this section is to establish standards and methods for handling traffic to be applied when work or work activity in the public right-of-way or public easements impedes or obstructs pedestrian, bicycle, transit, or vehicular traffic pursuant to an approved right-of-way permit, public project, or maintenance operation. These standards are intended to ensure safe and effective work areas, and warn, control, protect, and accommodate pedestrian, bicycle, transit, and vehicular traffic through or around these work areas.

Primary objectives of temporary traffic control measures in work areas are as follows:

- (1) Prevent accidents and injury for both the public and for workers, by providing a safe work area appropriate methods for handling traffic to address necessary detours and transportation related closures,
- (2) Prevent damage to public and private property, including damage to vehicles and construction equipment,
- (3) Mitigate legal exposure for the city of Boulder and licensed contractors performing work in the public right-of-way and public easements,
- (4) Ensure well defined and safe traffic movements through work areas and temporary traffic control zones.
- (5) Efficiently accommodate pedestrian, bicycle, transit, and vehicular traffic,
- (6) Provide effective communication with the public, and
- (7) Ensure conformity with these standards for work zone temporary traffic control.

(D) Preparation of Temporary Traffic Control Plans

A temporary traffic control (TTC) plan shall be prepared and implemented for any work or work activity performed in the public right-of-way or public easements when it is necessary to impede or obstruct pedestrian, bicycle, transit or vehicular traffic and impacts the transportation system, including without limitation vehicle travel lanes, parking, bicycle lanes, sidewalks, and multi-use paths. The TTC plan shall be prepared in conformance with the most current adopted Edition of the Manual on Uniform Traffic Control Devices and these Standards.

The TTC plan shall be prepared under the supervision of an American Traffic Safety Services Association (ATSSA) certified Traffic Control Supervisor (TCS) and implemented under the supervision of a TCS or certified Traffic Control Technician (TCT). It is the responsibility of the TCS preparing the TTC plan to determine the type, nature, extent, duration, and preferred method for handling traffic and any transportation system impacts caused by the proposed work, work activity, maintenance or construction.

(E) Policies

- (1) **General Policy for Handling Pedestrian Traffic:** Pedestrian movements are classified as the primary mode of transportation in the city of Boulder and are to receive the highest consideration with respect to temporary traffic control. Pedestrian facilities shall not be closed without special consideration of multiple alternatives that result in the least inconvenience for pedestrians. Pedestrian facilities shall not be closed for non-construction related activities, such as parking for vehicles and equipment.
- (2) **General Policy for Handling Bicycle Traffic:** Bicycling is classified as a preferred mode of transportation in the city of Boulder and bicycle pass ability shall be maintained through and around all temporary traffic control zones. Local bicycle facilities include dedicated on-street bike lanes, signed bike routes, wide street shoulders, and off-street multi-use paths that accommodate bicyclists, pedestrians, and other non-motorized uses serving a diverse cycling population of all ages and abilities. A temporary traffic control plan that proposes the closure of a bicycle facility shall provide a detour or equivalent facility type.
- (3) **General Policy for Handling Street Traffic:** Streets are to remain passable at all times through and around a temporary traffic control zone, unless permission to close a street is approved by the Traffic Engineer as set forth in these Standards and the B.R.C. 1981.

(F) Standard Closures

Impacts to transportation facilities are defined as either “Standard” or “Non-standard” closures. The requirements for approval for these two different categories of closure are different.

“Standard” closures may be approved pursuant to meeting the temporary traffic control measures outlined in Sub-section D of this document. Persons performing work, requiring work zone traffic control in the City of Boulder shall be responsible for ensuring that contractors and workers follow appropriate city, state and federal policies in determining and implementing the method for handling traffic as part of the closure

The following types of closures are considered “Standard” closures only if it occurs within the weekday hours of 9:00 a.m. to 4:00 p.m., unless the city manager has approved modified construction hours to minimize construction impacts on traffic flow along arterial and collector roadways, or to address environmental and safety concerns associated with the right-of-way work activity, and subject to approval of a sound level variance, if necessary, as prescribed under Chapter 5-9, “Noise,” B.R.C. 1981.

(1) Vehicular travel lane closure that is limited to one of the following types is defined as a “Standard” closure:

- (a) Closure of one lane, where at least one other lane for the same direction or movement will remain open (Example: If there are two southbound through lanes and the project needs to close only one of the lanes), or
- (b) A rolling closure conducting routine maintenance work, which is in periodic motion along a roadway.

(2) Sidewalk closure that meets all of the following conditions:

- (a) A sidewalk adjacent to a roadway classified as local in the Transportation Master Plan,
- (b) A sidewalk not located within the CAGID or UHGID boundary areas,
- (c) A sidewalk closure the duration of which is to occur for one week or less,
- (d) A sidewalk that is not the only sidewalk adjacent to the roadway, and
- (e) A sidewalk that doesn’t require pedestrians to detour to a sidewalk on a separate, parallel roadway.

(3) Bicycle lane closure that meets the following conditions:

- (a) A bicycle lane located along a roadway classified as local or collector in the Transportation Master Plan, with a speed limit of 35 mph or less, and

Note: Any closure of a bicycle lane needs to include the “Method for Handling Traffic (MHT) for Bicycle Lane Closures” policy, provided as **Attachment A**.

(G) Non-standard Closures

Any closure that cannot meet the “standard” closure conditions as set forth in Subsection (F) is defined as a “non-standard” closure. Direct review and consultation with the Traffic Engineer is required to obtain authorization for a non-standard closure. A non-standard closure requires agreement between the Traffic Engineer and the person performing work regarding the preferred method for handling traffic.

Non-standard closures include, without limitation, the following:

(1) Vehicular travel lane closures:

- (a) That occur any weekday outside the 9:00 a.m. to 4:00 p.m. time period,
- (b) That occur on any weekend ,
- (c) Affecting more than one lane in one direction,
- (d) That require a flagging operation,
- (e) That detours traffic to another roadway,
- (f) That requires transit service to detour their route or schedule, or
- (g) That temporarily closes a transit stop.

(2) Sidewalk closures:

- (a) Located adjacent to a roadway classified as other than local in the Transportation Master Plan,
- (b) Located within the CAGID or UHGID boundary areas,
- (c) The duration of which is more than 7 days,
- (d) Where no other sidewalk is adjacent to the roadway,
- (e) That require pedestrians to detour to the sidewalk on a separate, parallel roadway, or
- (f) That temporarily closes a transit stop.

(3) Bicycle lane closures:

- (a) Along a roadway classified as an arterial in the Transportation Master Plan,
- (b) That involve a contra-flow bicycle lane, or
- (c) That requires bicycle traffic to detour to another roadway.

Note: Any closure of a bicycle lane needs to include the “Method for Handling Traffic (MHT) for Bicycle Lane Closures” policy, provided as **Attachment A**.

(4) Multi-use path closures

A designated multi-use path is a transportation facility designed to serve pedestrians, bicyclists, skateboarders and other authorized non-motorized travel. By local ordinance, cycling is permitted only on sidewalks that are designated as multi-use paths or within residential, agricultural, or park land zoning districts. Multi-use paths provide cyclists of all ages and abilities a dedicated travel route separated from vehicular traffic. Because of their unique function, multi-use path closures are always non-standard.

Any proposed detour of a multi-use path onto a facility where bicyclists are prohibited (such as a sidewalk in a commercial area) requires a temporary designation of the detour facility as a multi-use path. Construction detour signing, outlined in **Attachment B**, shall be required as part of the temporary traffic control plan.

Temporary traffic control plans that propose a multi-use path closure must include a cost/benefit assessment of feasible detour options in the following sequential order:

- (a) Construct a temporary detour facility.
 - i. Constructing a temporary facility adjacent to the multi-use path closure or within the boundaries of the project area is the preferred method for handling a multi-use path closure.
 - ii. If a temporary facility is deemed not feasible, a written explanation is required.
- (b) Allocate a roadway lane as a detour facility.
 - i. It may be feasible to provide a multi-use path detour by allocating a vehicular travel lane or parking aisle adjacent to the path.
 - ii. This approach requires a traffic impact analysis for vehicular travel in the corridor.
 - iii. This option must evaluate any negative impacts on transit service in the corridor.
 - iv. This option must consider the impacts barricades may pose for transit stops, construction activities, equipment access and materials delivery and construction staging in the corridor.
- (c) Detour the multi-path use to the other side of the street.
 - i. Determine if bicycling is legally allowed on the sidewalk along the corridor.
 - ii. Determine if the proposed detour facility is wide enough to handle the volume of multi-use path traffic expected.
 - iii. Determine if the detour is an accessible route.
 - iv. This detour option must comply with the standards prescribed in Section (H) of these standards.
- (d) Detour the multi-use path to another corridor.
 - i. Determine if the detour is an accessible route.
 - ii. This detour option may only be considered if all of the options under Subsections (a), (b) and (c) are demonstrated in writing to be not feasible.
 - iii. This detour option must comply with the standards prescribed in Section (H) of these standards.
- (e) Provide signed and marked pedestrian crossing closures.
 - i. Closure using signed and marked pedestrian crossing treatments will result in a detour to a nearby and reasonably safe and efficient pedestrian route.
 - ii. This detour option must comply with the standards prescribed in Section (H) of these standards.

(H) Closures Involving Detours

A method for handling traffic that requires the use of a detour shall include a detour sign and marking plan in the preparation and implementation of the Temporary Traffic Control Plan.

Sidewalk and multi-use path detour signing shall include, without limitation:

- (a) Standard MUTCD signing to inform bicyclists and pedestrians that the sidewalk or path is closed.

- (b) Standard MUTCD directional signing at each decision point along the detour route to guide users around the closure, including “End Detour” signing. An example of a sidewalk detour is provided in **Attachment C**.

(I) Emergency Closures

Emergency situations may create an immediate need to close transportation facilities. The most common include traffic collisions or damage to critical public utilities. When an emergency closure is necessary, appropriate actions should be taken by emergency responders and workers to ensure safety in the emergency response area. Hazards discovered on the transportation facility should be removed immediately where possible. If hazards cannot be immediately removed, appropriate temporary signing, temporary traffic control measures, or the use of emergency vehicles and equipment should be used to preclude access to the hazard by public users of the transportation facility.

If emergency related impacts to a transportation facility present a danger to public safety or require emergency traffic control, emergency personnel (police or fire) shall be contacted immediately to respond. Emergency personnel responding have authority to manage traffic and emergency activities in the affected area.

If an emergency situation causes an overnight closure of the transportation facility, emergency personnel or a representative of the Traffic Engineer shall arrange for appropriate temporary traffic control measures as soon as possible.

(J) Communication of Traffic Control Impacts for Work Activities, Construction and Maintenance

It is important to provide advance notice to the public concerning temporary traffic control impacts to transportation facilities created by work activities, construction projects, and maintenance operations. Advance notice is to be accomplished using both advance notice signing (such as static signs or variable message boards) and public notification resources (such as the “Cone Zones” section in the local newspaper, e-mail group distributions, Web site announcements, broadcast media, and direct mailings, flyers and handouts).

Notification by any method should seek to explain to the public:

- (1) The nature/purpose of the work,
- (2) The time and duration of its execution,
- (3) The anticipated effects upon transportation facility users,
- (4) Any possible or recommended alternative travel routes or modes available, and
- (5) Contact information for the right-of-way permittee, licensed contractor, or project manager responsible for the closure.

Advance notification signing should be placed in visible, safe and appropriate locations. Signing should be in place one week in advance of the closure, or at a minimum, 48 hours in advance of the closure. In

the case of an emergency closure, advanced signing may be needed if the closure is expected to extend long enough to require more permanent work zone traffic control.

(K) Special Events

There are existing policies, separate from these Standards, governing permits for special events in the City of Boulder. In addition to those policies, any closure of a public transportation facility requiring a temporary traffic control plan shall be prepared in conformance with the 2003 Edition of the Manual on Uniform Traffic Control Devices, Part 6, "Temporary Traffic Control," and these Standards.

Attachment A – City of Boulder Method of Handling Bicycle Lane Closures

[Insert diagram detailing signing and striping of typical closure]

Include policy requiring "bike lane closed", bikes merge with traffic" sign; and the mandatory reduction in speed limit for roadway traffic to 25 mph through the closure area.

Attachment B – City of Boulder Method of Handling Temporary Designation of a sidewalk as a multi-use path.

[Insert diagram detailing signing and striping of MHT]

Include policy requiring location of special "Temporary Multi-use Path – Watch for Bikes" signing....OR sign with bike/ped symbol and supplemental message (bikes allowed on sidewalk) sign.

Attachment C – Example of detour plan for a street and sidewalk closure.

Show pedestrians detoured to the other side of the street and on-street vehicles detoured to an adjacent street.
