



INDIANA DEPARTMENT OF TRANSPORTATION

Design Memo 26-09

April 2, 2026

TO: All Design Personnel and Consultants

FROM: /s/ John McGregor
John McGregor
Traffic Operations Director

SUBJECT: Positive Protection and Mitigation Strategies for Maintenance of Traffic

EFFECTIVE: Lettings on or after December 1, 2026

This memo serves as a means of compliance with the Federal Highway Administration's final rule amending 23 CFR 630, Subparts J and K, which govern traffic safety and mobility in work zones. The guidance established herein defines INDOT's minimum requirements and may exceed the minimum regulatory requirements. This guidance applies to both INDOT and LPA federal aid projects.

Regulatory Requirement Summary

The final rule requires state Departments of Transportation to

1. "Use positive protection devices in work zones with high anticipated operating speeds that provide workers no means of escape from motorized traffic intruding into the work space unless an engineering study determines otherwise."
2. Consider positive protection devices "...in other situations that place workers at increased risk from motorized traffic and where positive protection devices offer the highest potential for increased safety for workers and road users, such as:
 - Work zones that provide workers no means of escape from motorized traffic (e.g., tunnels, bridges, etc.).
 - Long-duration work zones...resulting in substantial worker exposure to motorized traffic.
 - Projects with high anticipated operating speeds..., especially when combined with high traffic volumes.
 - Work operations that place workers close (e.g., within one lane width) to travel lanes open to traffic.
 - Roadside hazards, such as drop-offs or unfinished bridge decks, that will remain in place overnight or longer."

INDOT Document Revisions

Revisions to the INDOT *Policies, Processes, and Procedures for Work Zone Safety and Mobility* document (Work Zone Policy) are in process. *Indiana Design Manual* Section 503-3.05(02), Use of Positive Protection, has been revised to add the regulatory requirements listed above. Additional revisions are expected when the Work Zone Policy is finalized.

Selecting Positive Protection Devices

A decision matrix has been developed for selecting appropriate positive protection devices based on duration, anticipated drop-off depth, and the lateral buffer (offset) from traffic to the work space. The guidance is presented in two tables at the end of the memo, along with definitions of terms and project examples.

These tables are intended to promote consistency in work zones through uniform statewide application. INDOT expects to improve driver expectancy, provide a uniform experience for workers within work zones, and to more reliably plan for the associated project costs.

- *Table 1 - Positive Protection and Mitigation Strategies for MOT* is a general decision matrix that may include several strategies and is for use on all projects.
- *Table 2 - Positive Projection and Mitigation Requirements for Freeway and Interstate Patching Projects* is a prescriptive positive protection set up for use on freeway and interstate patching projects. See Illustrations 2 and 3.

Use of the appropriate table is required for all projects that include a temporary traffic control plan, except for full closures.

Selection Criteria

Table 1 outlines four criteria for establishing a recommended MOT strategy. In many cases, more than one strategy is listed. Using a single strategy for the entire project length is not required. For long work zones with multiple discrete work sites, a unique combination of strategies should be considered for each area. Criteria are as follows:

1. Duration of Work. Identifying the duration for each worksite and work space helps assess exposure and risk. The table uses duration definitions consistent with the *Indiana Manual for Uniform Traffic Devices* (IMUTCD).
 - **Long-Term Stationary**. Work that occupies a location for more than 3 days.
 - **Intermediate-Term Stationary**. Work that occupies a location for more than one daylight period up to 3 days, or nighttime work lasting more than 1 hour.
 - **Short-Term Stationary**. Work that occupies a location for more than one hour within a single daylight period. Short-Term Stationary is grouped with the Short Duration and Mobile categories and represents the longest duration among the three.

For Interstates, restrictions and times are subject to the Interstate Highways Congestion Policy (IHCP).

2. Condition. Condition is either a drop-off depth or a duration when workers are present.

When determining drop-off depth for a work space, the objective is to reduce risk by minimizing the impact of potential lane departure crashes. Consider drop-off depths for work spaces during active work periods and when temporary traffic control remains in place, but no active work is occurring (e.g., concrete curing). Drop-off considerations are:

- 5 in. or less
- Greater than 5 in.

Duration when workers are present is used for Intermediate-Term Stationary applications only and is either greater than or less than 24 hours.

3. Lateral Buffer Distance. This is the distance from the inside edge of the travel lane open to traffic to the closest edge of the work space. It includes the lateral shy distance (offset), the width of the channelizing device or barrier, and any additional space between the back of the device or barrier and the work space. It directly affects worker exposure if an errant vehicle leaves the traffic lane. INDOT risk assessment is as follows:

- < 2 ft: Highest risk of encroachment.
- 2 - 12 ft: Moderate risk of encroachment.
- > 12 ft: Low risk of encroachment.

For short-term or intermediate-term applications where available space and traffic conditions allow, consideration should be given to restricting additional lanes to provide greater separation between traffic and the workers.

Additionally, worker means of escape should be identified for each work space. Areas that provide no means of escape, such as bridge decks, retaining walls, soundwalls, other significant drop-offs, or obstructions adjacent to a work space, will require a temporary traffic barrier.

4. Speed Limit. Use the regulatory speed prior to construction. There are two categories for speed limits.
 - High speed – 50 mph or higher. Higher speed roadways generally carry a greater risk resulting from work zone crashes or work space intrusions.
 - Low speed – 45 mph or lower. Where anticipated operating speed is greater than 45 mph, consideration should be given to using the high-speed strategy.

Selecting an MOT Strategy

Once each of the criteria have been identified, the table provides a numbered hierarchy of the available options. When using Table 1 and multiple options are provided, the designer should select the appropriate device(s) based on the specific conditions of each work space. Consider lane merge and shifts, reduced lane widths, and other circumstances that can impact driver behavior and increase the potential of vehicles intruding into a work space.

When using Table 2, the strategy shown is intended to be used as stated.

For projects on the interstate, the options listed in either Table 1 or Table 2 do not preclude the requirements of the IHCP. Use of queue trucks, portable changeable message signs, and other intelligent work zone devices is not covered herein but may be considered. See the INDOT [Intelligent Work Zone Design and Implementation Tool Kit](#).

Implementation and Documentation

The MOT strategies outlined in this memo and Tables 1 and 2 are required for contracts letting on or after December 1, 2026. These strategies are strongly encouraged for contracts let prior to the effective date.

Scoping. To the extent practical, the MOT strategy should be determined and documented during the scoping phase to reliably plan for the associated project costs.

Validation. The MOT strategy should be discussed and documented during the preliminary field check. It should be revisited once temporary traffic control plans are finalized to ensure that the assumed scope of work has not changed significantly enough to require modifications to temporary traffic control devices.

For projects in design that are beyond the field check stage, include documentation of the MOT strategy review with the next Stage submittal.

For design-build or other alternate procurement methods, ensure the appropriate requirements are included in the contract technical provisions.

Design Computations. Designers should include the appropriate positive protection table with the project design computations file. The table should be annotated with the strategy selected. Any deviations should be documented as a Level Two design exception, including:

- An explanation of the project constraints and why traffic control devices other than those presented in the table are proposed.
- All positive protection strategies considered.
- The duration of the exception.

Questions

For questions related to this design memo, please contact DesignManualInquiries@indot.in.gov.

Definitions

The following definitions describe work zone components considered part of the temporary traffic control design. These definitions are consistent with the Indiana Code and the IMUTCD. See Illustration 1 – Work Zone Definitions.

- Activity Area. The area that includes the traffic space, the work space, and the lateral and longitudinal buffer spaces.
- Engineering study. For the purpose of this memorandum, an engineering study describes an investigative process by the Engineer of Record, applying engineering principles, to analyze the impact of the selected mitigation strategy to provide a safe and efficient work zone for all stakeholders. This may be a simple meeting of subject matter experts culminating in a memorandum documenting the individuals involved, topics discussed, decisions made, and reasoning for those decisions. Regardless, the detail of the study should address the complexity of the analysis.
- Lateral Buffer Space. The area that separates live traffic from the work space. The lateral buffer distance is measured from the closest edge of the travel lane open to traffic to near edge of the work space.
- Longitudinal Buffer Space. The area that separates the advance warning and transition areas from the work space.
- Lateral Shy Distance. The distance or offset from the closest edge of the travel lane open to traffic and the near face of the temporary traffic control device.
- No means of escape. Conditions where workers lack an open and unobstructed path to retreat from encroaching motorized traffic.
- Positive protection devices. Physical devices in a work zone that meet crash testing standards (NCHRP 350/MASH) and are used to separate workers and equipment from moving traffic, providing a physical buffer. Positive protection devices include, but are not limited to temporary traffic barrier, truck mounted attenuators, and other vehicle arresting systems.
- Traffic Space. The portion of the highway which road users are routed through in each worksite.
- Work Space. The area off limits to any road traffic, excluding any buffer space. This area includes the limits of the worksite as well as any additional working room that may be required for equipment and materials staging. The term “work space” is currently referred as “work area” or “construction area” in the *Indiana Design Manual*.
- Work Zone. An area of highway with construction, maintenance, or utility work activities. This area extends from the first warning sign or temporary traffic control device, to the “END ROAD WORK” sign or last temporary traffic control device. A single work zone can include multiple worksites.
- Worksite. An individual area within the work zone where construction, maintenance, or utility work activities occur. This term includes the lanes of a highway leading up to the area leading to where the work is being performed, beginning at the point where appropriate signs directing vehicles to merge from one lane into another lane are posted. A single worksite can include multiple work spaces.

Illustration 1 Work Zone Definitions

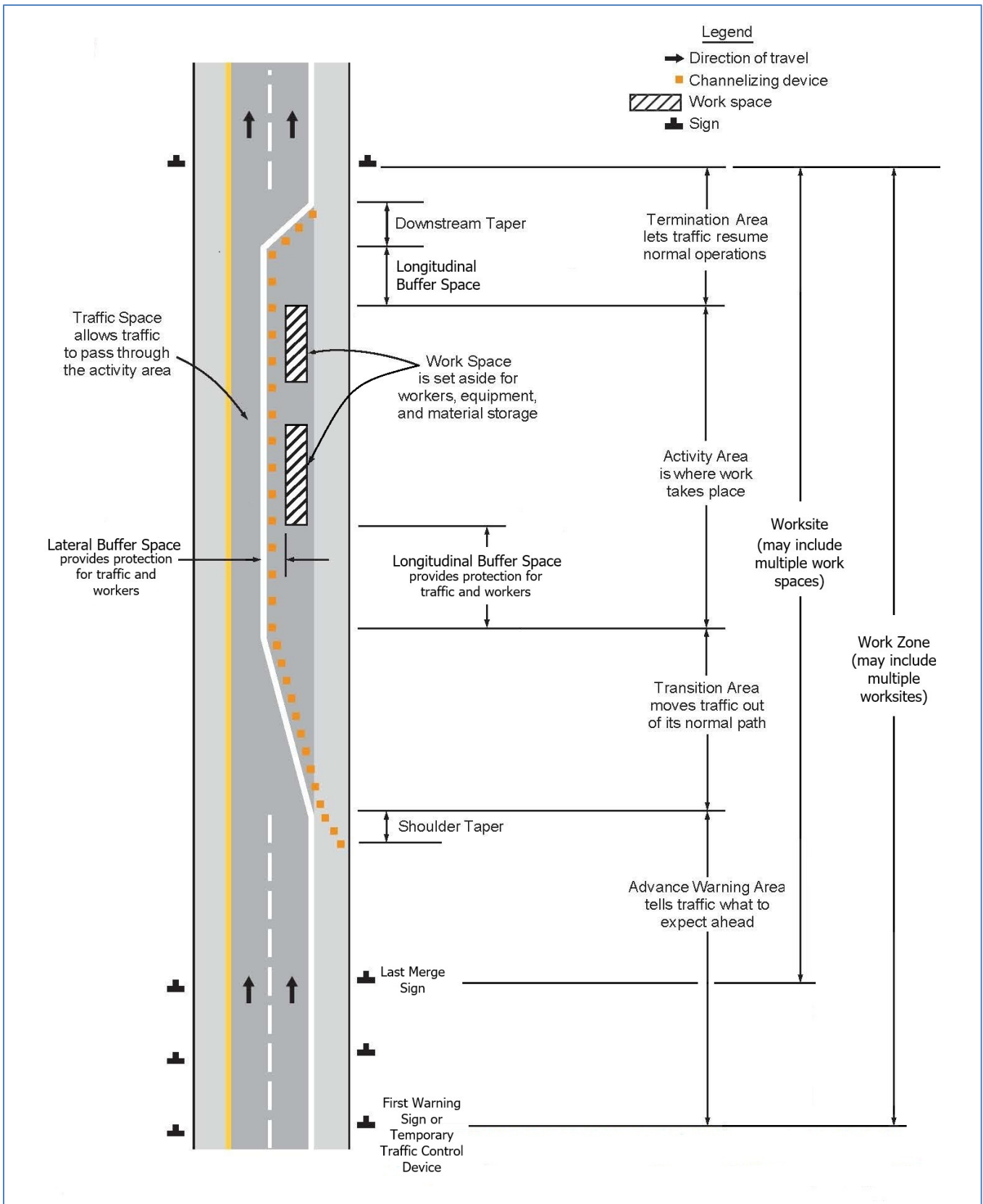


Illustration 1 Work Zone Definitions (continued)

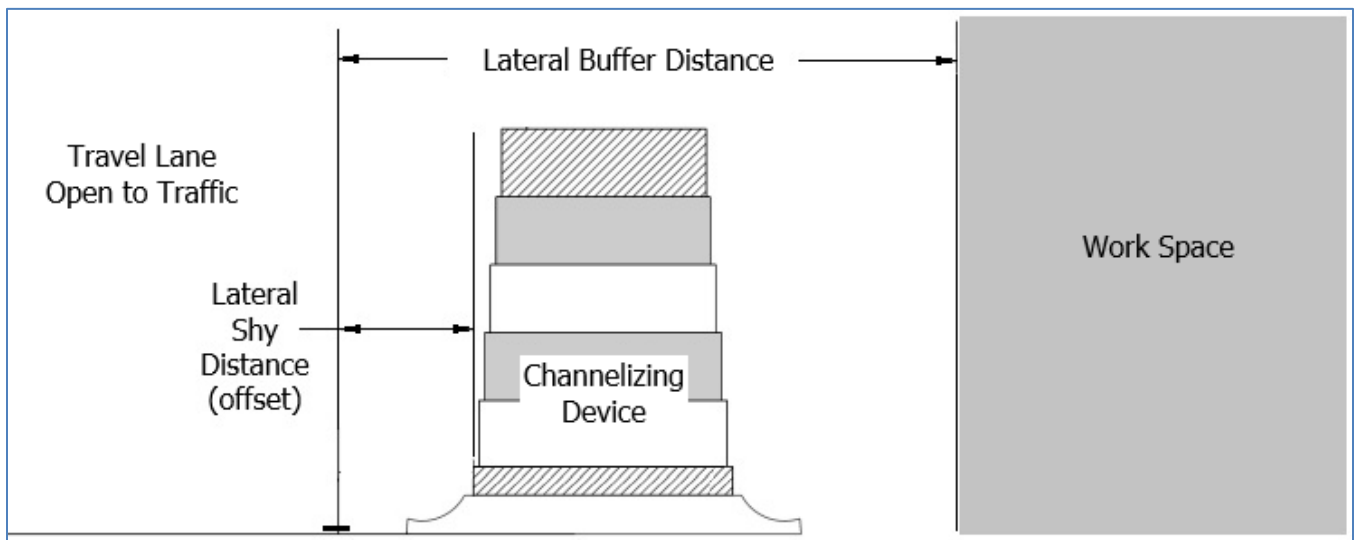
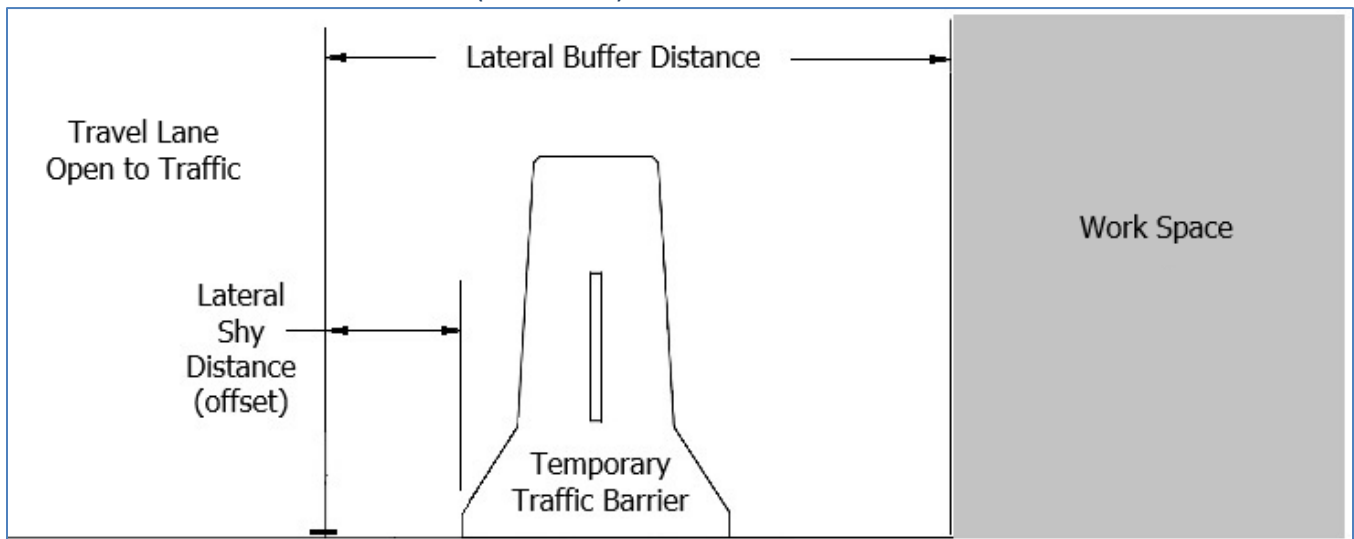


Table 1. Positive Protection and Mitigation Strategies for MOT

Table 1 - Positive Protection and Mitigation Strategies for MOT				
Duration* (MUTCD Work Duration Standard)	Condition: Drop-off Depth or Duration	Lateral Buffer Distance	Minimum Requirements (listed in order of preference)	
			High Speed: 50 MPH or greater (Regulatory speed limit prior to construction)	Low Speed: 45 MPH or less (Regulatory speed limit prior to construction)
Long-Term Stationary Work that occupies a location more than 3 days Use Table 2 for patching on a freeway or interstate	Drop off depth is 5 in. or less	Less than 12 ft	1. Temporary Traffic Barrier required when occupying a location continuously for 14 days or longer 2. Temporary Traffic Barrier should be considered for work occupying a location less than 14 days or when workers have no means of escape. 3. Channelizing devices. TMAs required when workers are present. (3)	1. Temporary Traffic Barrier preferred for worksites with active traffic on both sides (i.e. work in median). 2. Channelizing devices. TMAs should be considered when workers are present.(3)(4)
		12 ft or greater	1. Temporary Traffic Barrier should be considered where there is no means of escape. 2. Channelizing devices. TMAs required when workers are present. (3)	
	Drop off depth is greater than 5 in.	Any	1. Temporary Traffic Barrier required when occupying a location continuously for 14 days or longer or when workers have no means of escape. 2. Channelizing devices. TMAs required when workers are present.(3)	1. Temporary Traffic Barrier required when occupying a location for 14 days or longer or when workers have no means of escape. 2. Channelizing devices. TMAs should be considered when workers are present.(3)(4)
Intermediate-Term Stationary Work that occupies a location for more than one daylight period up to 3 days, or nighttime work lasting more than 1 hour Use Table 2 for patching on a freeway or interstate	Duration while workers are present is 24 hours or less	Any	Channelizing devices. TMAs required when workers are present. (3)(5)	1. Temporary Traffic Barrier considered for worksites with active traffic on both sides (i.e. work in median). 2. Channelizing devices. TMAs should be considered when workers are present.(3)(4)
	Duration while workers are present is over 24 hours	Less than 12 ft	1. Temporary Traffic Barrier should be considered when workers have no means of escape. 2. Channelizing devices. TMAs required when workers are present.(3)(5)	1. Temporary Traffic Barrier considered for worksites with active traffic on both sides (i.e. work in median). 2. Channelizing devices. TMAs should be considered when workers are present.(3)(4)
		12 ft or greater	1. Channelizing devices. TMAs required when workers are present.(3)(5)	
Short-Term Stationary, Short Duration, Mobile (max. duration) Daytime work that occupies a location for more than 1 hour within a single daylight period	Any	Any	Maintenance of traffic in accordance with the INDOT Work Zone Traffic Control Guidelines required. Where cones are used instead of drums, 42 in. cones are required. Document Link: https://www.in.gov/indot/doing-business-with-indot/files/WorkZoneTCH.pdf	

*The duration is relative to the length of time a work operation occupies a spot location.

1. Drums assumed as the channelizing device. A 42 in. channelizer may be considered for minor encroachment. See IDM Section 503-7.02(05) and Standard Drawing series 801-TC DV.
- (2) Use of Mobile Barrier requires coordination with the District Area Engineer and approval from the State Construction Engineer. See Table 2 for Mobile Barrier limitations.
- (3) Coordinate the use of TMAs with the District Area Engineer. On a high-speed, high volume project and where the lateral buffer is less than 12 ft use of the Mobile Barrier may be considered. See table 2 for Mobile Barrier limitations.
- (4) Where anticipated operating speeds exceed 45 mph, a TMA should be considered in addition to channelizing devices.
- (5) Use of a TMA is not required for resurfacing work operations.

Table 2. Positive Protection and Mitigation Requirements for Freeway and Interstate Patching

Table 2 - Positive Protection and Mitigation Requirements for Freeway and Interstate Patching (1)(2)(3)			
Duration of Work*	Drop-off Depth	Lateral Buffer Distance	Minimum Requirement
			Any speed
<p>Long-Term Stationary Work that occupies a location continuously for more than 3 days</p>	Any	Any	<p>Long-Term Lane closure Standard Drawing Series 801-TCLC: Channelizing devices + TMA + length of unanchored temporary traffic barrier (TTB), Type 2 at initial lane closure.</p> <ul style="list-style-type: none"> All flare rates based on 70 mph At initial lane closure, TTB flared at 20:1 to edge of the lane and a CZ unit placed. Allow the appropriate roll ahead distance of the TMA. TTB extended 100 ft beyond the initial work space. See note (2) for determining length of initial work space. As work progresses TTB and TMA are relocated to the next active work space. Channelizing devices for the lane closure remain in place between start of work zone and the beginning of the next work space. <p>See Illustration 2 – Freeway and Interstate Patching, Long-Term Stationary</p> <p>Where there is a single worksite, the downstream area beyond the worksite should be transitioned to be open to traffic. Details have not been developed for multiple concurrent worksites.</p>
<p>Intermediate-Term Stationary Work that occupies a location for more than one daylight period up to 3 days, or nighttime work lasting more than 1 hour.</p>	Any	Less than 12 ft	<p>Intermediate-Term Lane closure Standard Drawing Series 801-TCLC: Channelizing devices + TMA required when workers present (3)</p> <p>See Illustration 3 – Freeway and Interstate Patching, Intermediate-Term Stationary</p>
		12 ft or greater	<p>Intermediate-Term Lane closure Standard Drawing Series 801-TCLC : Channelizing devices + TMA required when workers present (3)</p> <ul style="list-style-type: none"> Mobile Barrier may be considered but requires approval from the State Construction Engineer. See note (4) for limitations.

*The duration is relative to the length of time a work operation occupies a spot location.

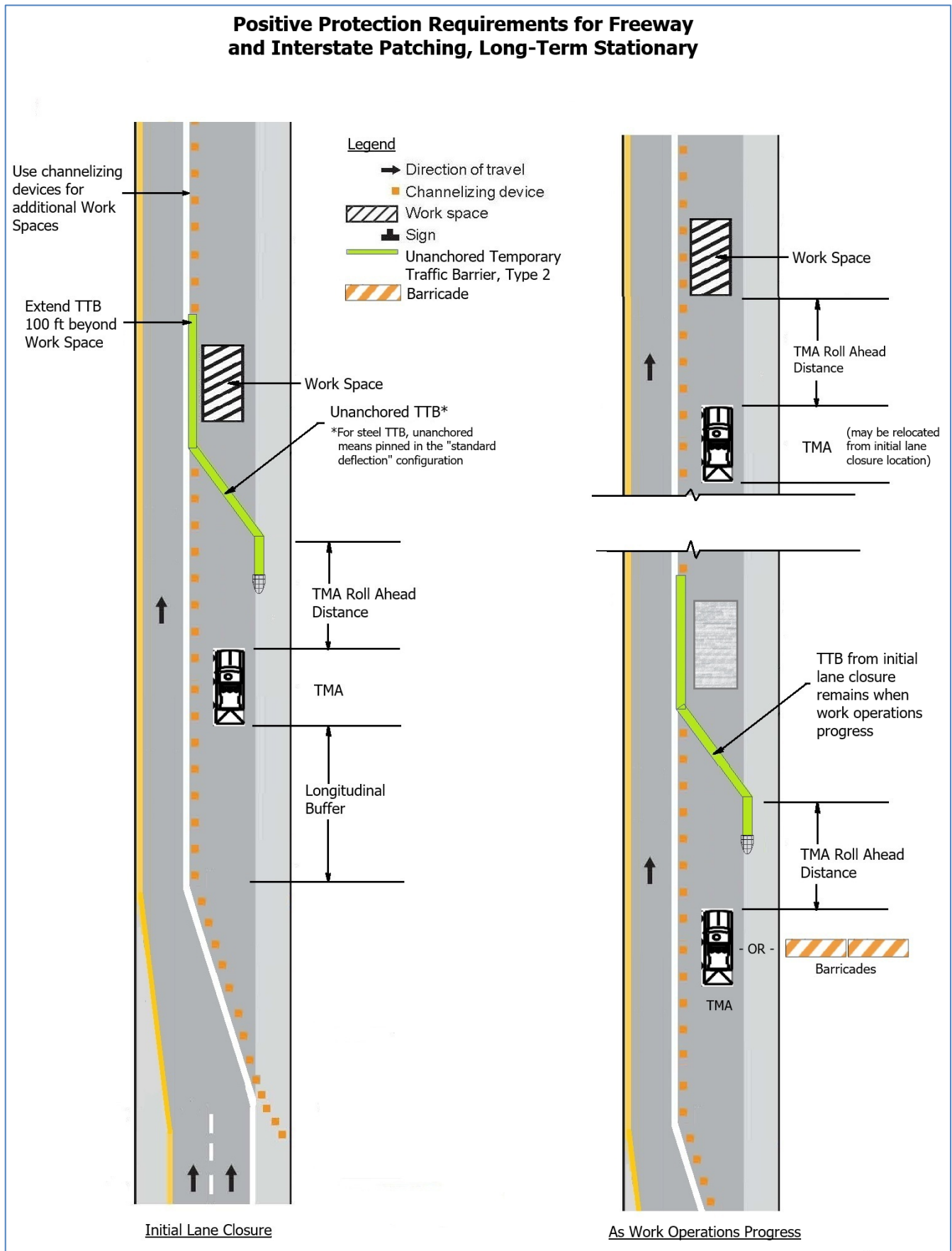
(1) Using the strategy from this table does not preclude compliance with the Interstate Highways Congestion Policy. All conditions and mitigation measures associated with an IHCP exception must be implemented..

(2) Coordinate work space length with the District Area Engineer to determine the length of TTB for initial closure.

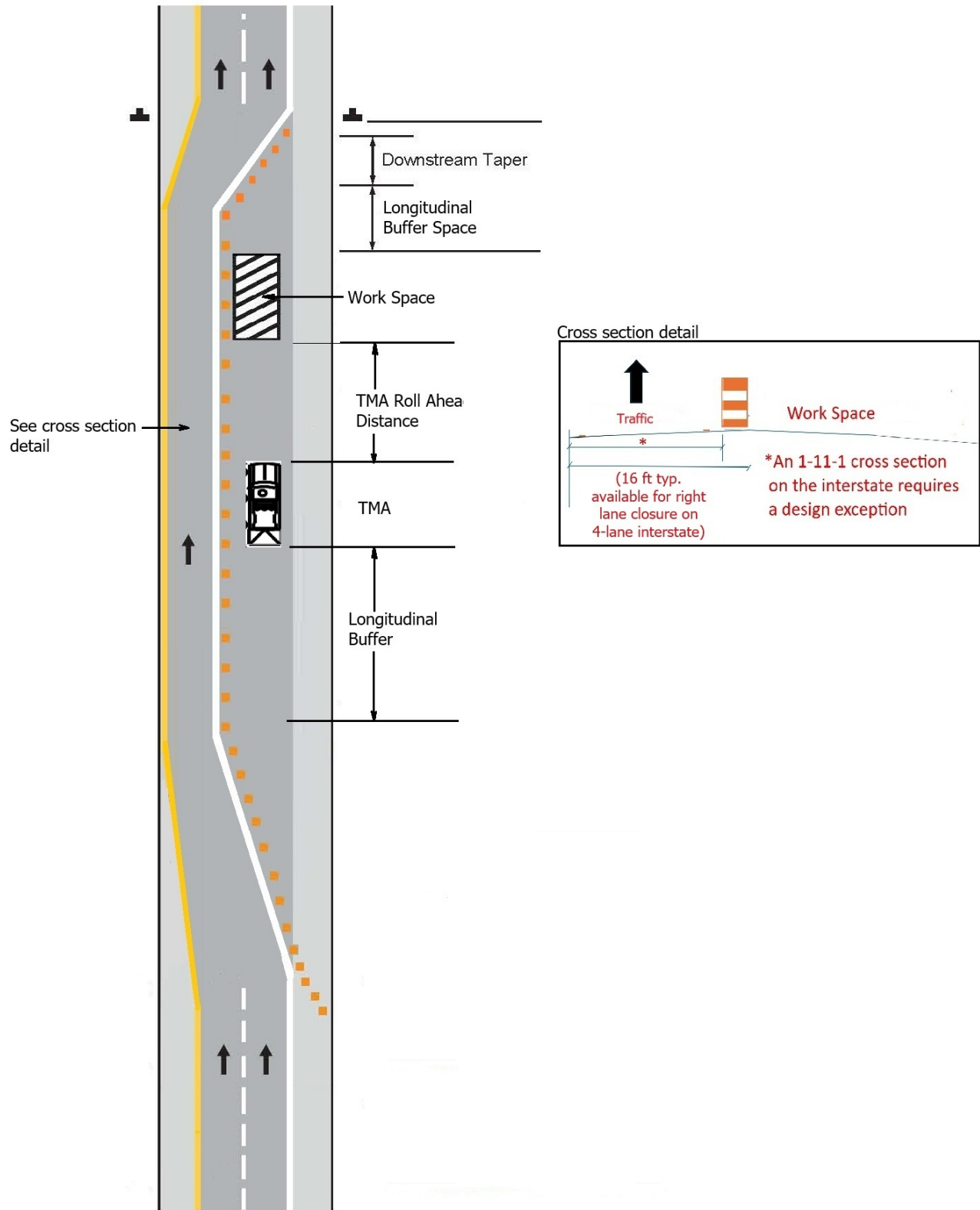
(3) When patching is part of a resurfacing project, use of a TMA is not required for the resurfacing operation.

(4) Coordinate use of Mobile Barrier with the District Area Engineer. Limitations include

- INDOT only has access to a single mobile barrier system. Two or more crews working in different areas cannot be shielded at the same time.
- Mobile barrier will occupy a full lane width adjacent the work space. Where work or large equipment (e.g. paver) occupies a full lane width of the work space, the adjacent lane must be closed for the Mobile Barrier.
- One day is required to modify the mobile barrier wall from left side shielding to right side shielding. Work on opposite sides cannot occur in the same day and must be accounted for in the schedule.



Positive Protection Requirements for Freeway and Interstate Patching, Intermediate-Term Stationary



Examples

Example 1 - Bridge Replacement or Highway Widening

These are typically substantial projects with phased construction.

Project Characteristics

- Work duration for each phase is anticipated to be several months.
- The work space does not provide a means of escape during any of the construction phases.
- The speed limit prior to construction is 55 MPH.
- The proposed work space is 7 ft from the edge of the travel lane open to traffic.
- The bridge construction results in several feet of drop-off as beams and bridge deck are removed and reconstructed.
- Highway widening includes significant excavation for most of the stage, to construct full-depth pavement.

Applying Table 1

- Duration: Long-Term Stationary
- Drop-off Depth: Greater than 5 in.
- Lateral Buffer: Any (Does not matter what the lateral buffer distance will be)
- Regulatory Speed Limit prior to Construction: 50 mph or greater
- Positive Protection Strategy: Since the duration of each phase is greater than 14 days, and since no means of escape is provided, **temporary traffic barrier is required.**

Example 2 - Freeway Resurfacing Project with HMA Patching

Project Characteristics

- The freeway carries two lanes in each direction under normal conditions.
- Work includes a 2 in. mill and fill with no increase in profile.
- Partial and full depth patching
- The work zone does not include bridge work and all side slopes are 4:1 or flatter.
- The project will be completed using nightly lane closures.
- The speed limit prior to construction is 55 MPH.
- Workers have a means of escape, e.g. a path to retreat from encroaching motorized traffic
- The lateral buffer distance is 4 ft.

Applying Table 2 for Patching

- Duration: Intermediate-Term Stationary
- Drop-off Depth: Any
- Work will be completed under night-time lane closures
- Lateral Buffer: Less than 12 ft. Since the freeway only carries two lanes under normal conditions, this project does not allow for an additional lane to be closed during work activities to increase the lateral buffer
- Positive Protection Strategy: **Channelizing devices, truck-mounted attenuators when workers are present. The resurfacing operation uses Table 1. Use of a TMA is not required for the resurfacing operation.**

Example 3 - Rural Interstate Patching Project

Project Characteristics

- Rural interstate carries two lanes in each direction under normal conditions.
- Speed limit prior to construction is 70 mph.
- Project length is 5 miles. Patches are a combination of partial depth and full depth
- MOT will consist of nightly single lane closures.

Applying Table 2

- Duration: Intermediate-Term Stationary, because a nightly single lane closure is in a different location each night throughout the worksite.
- Drop-off Depth: Any
- Lateral Buffer: Less than 12 ft (closure of the adjacent lane not allowed)
- Positive Protection Strategy: **Channelizing devices and TMA for lane closure.** Note that the Final MOT strategy must be compliant with IHCP and all conditions of an exception.

Example 4 - Urban Interstate Concrete Patching Project

Project is completing patching operations for a few miles of urban interstate. Patches are a combination of partial depth and full depth.

Project Characteristics

- The interstate carries four lanes in each direction under normal conditions.
- Work operations will be completed in separate operations, two crews working at different locations at the same time. All affected patch areas will be removed / excavated as needed through one operation. A second operation will then construct the patch.
- The work is being conducted over 3 or more days. IHCP allows two lanes open to traffic while the work zone is in place.
- The work zone contains three separate works spaces where patches are being completed. Each work space is separated by one half mile.
- The speed limit prior to construction is 55 MPH.
- The work space is not constrained – workers have a means to escape, e.g. a path to retreat from encroaching motorized traffic.

Applying Table 2

- Duration: Long-Term Stationary
- Drop-off Depth: Any
- Lateral Buffer: Any.
- Positive Protection Strategy: **Standard Drawing Series 801-TCLC: Channelizing devices + TMA + length of unanchored temporary traffic barrier (TTB), Type 2 at initial lane closure. See Illustration 3.** Note that the Final MOT strategy must be compliant with IHCP and all conditions of an exception.

Example 5 - Rural Interstate Thin Deck Overlay Project

Project Characteristics

- The interstate carries two lanes in each direction through the worksite under normal conditions.
- The work zone will be established and will remain in place for the entirety of the overlay operations and is anticipated to be less than 3 days.
- The drop-off for this work activity is not expected to exceed 5 in. at any time when the work zone is in place and occupying the bridge deck.
- The speed limit prior to construction is 55 MPH.
- The lateral buffer distance is 4 ft.

Applying Table 1

- Duration: Intermediate-Term Stationary
- Duration while worker are present: less than 24 hours
- Lateral Buffer: Any
- Regulatory Speed Limit prior to Construction: 50 mph or greater.
- Positive Protection Strategy: **Channelizing devices. TMAs required when workers are present.**

Example 6 - Suburban Arterial Widening Project

The project is widening suburban arterial state route for 3 miles. Most of the project is at-grade; however, there are two bridges that must be widened.

Project Characteristics

- The state highway carries two lanes, one in each direction.
- Work duration for each phase is anticipated to be several months.
- The speed limit prior to construction is 40 MPH.
- The lateral buffer is 3 ft.
- Drop-offs will be greater than 5 in. at times, particularly during excavation and subbase / base pavement construction.
- Widening existing bridges will result in significant drop-offs with no means of escape.

Applying Table 1

- Duration: Long-Term stationary
- Drop-off Depth: Greater than 5 in.
- Lateral Buffer: Any.
- Regulatory Speed Limit prior to Construction: Low speed: 40 mph or less.
- Positive Protection Strategy: **Temporary traffic barrier**