Safe and Effective Use of Law Enforcement Personnel in Work Zones

Module 2.1

Work Zone Areas

Module 2.1

Module 2 includes the following:

Lesson 2.1– Work Zone Area Components

- Defines the four areas common to most work zones

Lesson 2.2 – Advance Warning Area

- Describes traffic control and configuration for advance warning area

Lesson 2.3 – Types of Tapers

- Discusses the configuration and layout of tapers and buffers

Objectives of this Lesson

When you complete this lesson, you will be able to:

- Identify four areas common to most work zones
- Discuss the purpose of each work zone area
- Identify the different types of tapers, buffers and channelizing devices used in work zones

Work Zone & Traffic Control Devices

A ***work zone*** is an area of a highway with construction, maintenance, or utility work activities. A work zone is typically marked by signs, channelizing devices, barriers, pavement markings, and/or work vehicles.

Channelizing devices include cones, tubular markers, vertical panels, drums, barricades, and temporary raised islands. They provide for smooth and gradual vehicular traffic flow from one lane to another.

Work Zone Area Components

While the characteristics and configuration of work zone applications vary, most types of work zones can be defined in terms of four common areas.

ADVANCE WARNING AREA

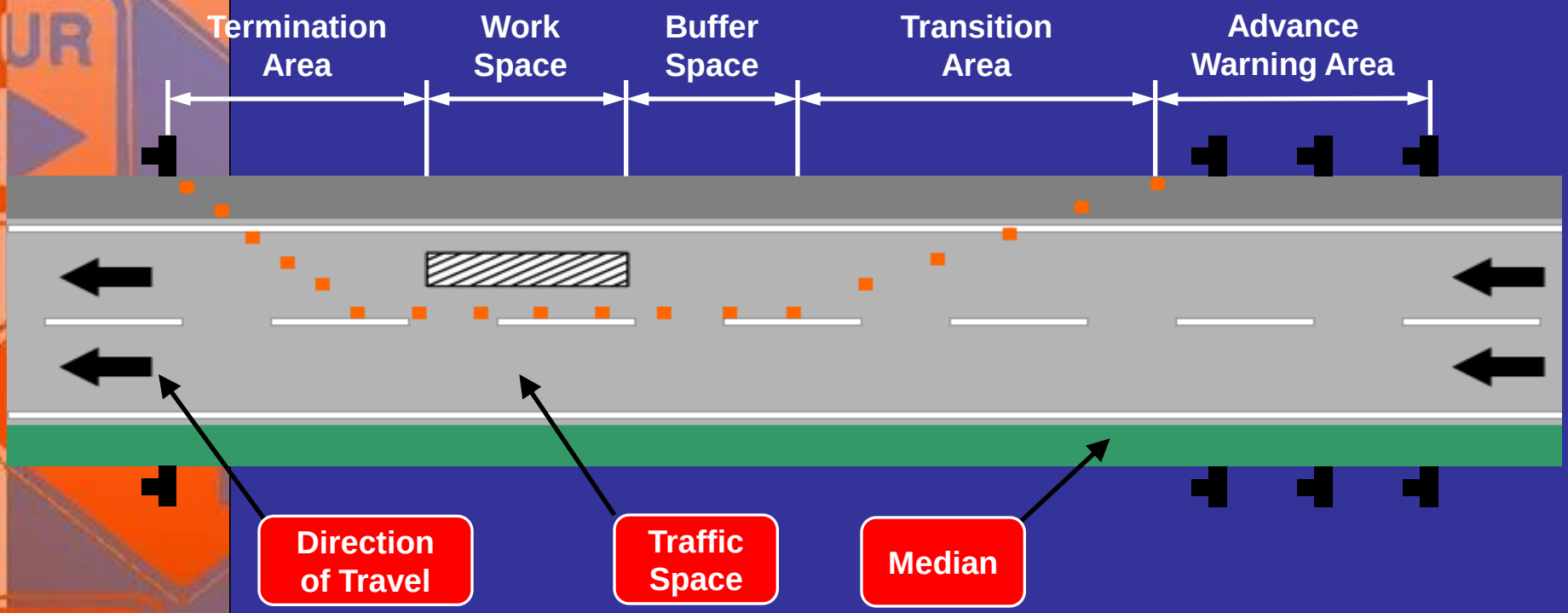
TRANSITION AREA

ACTIVITY AREA

TERMINATION AREA

Work Zone Area Components

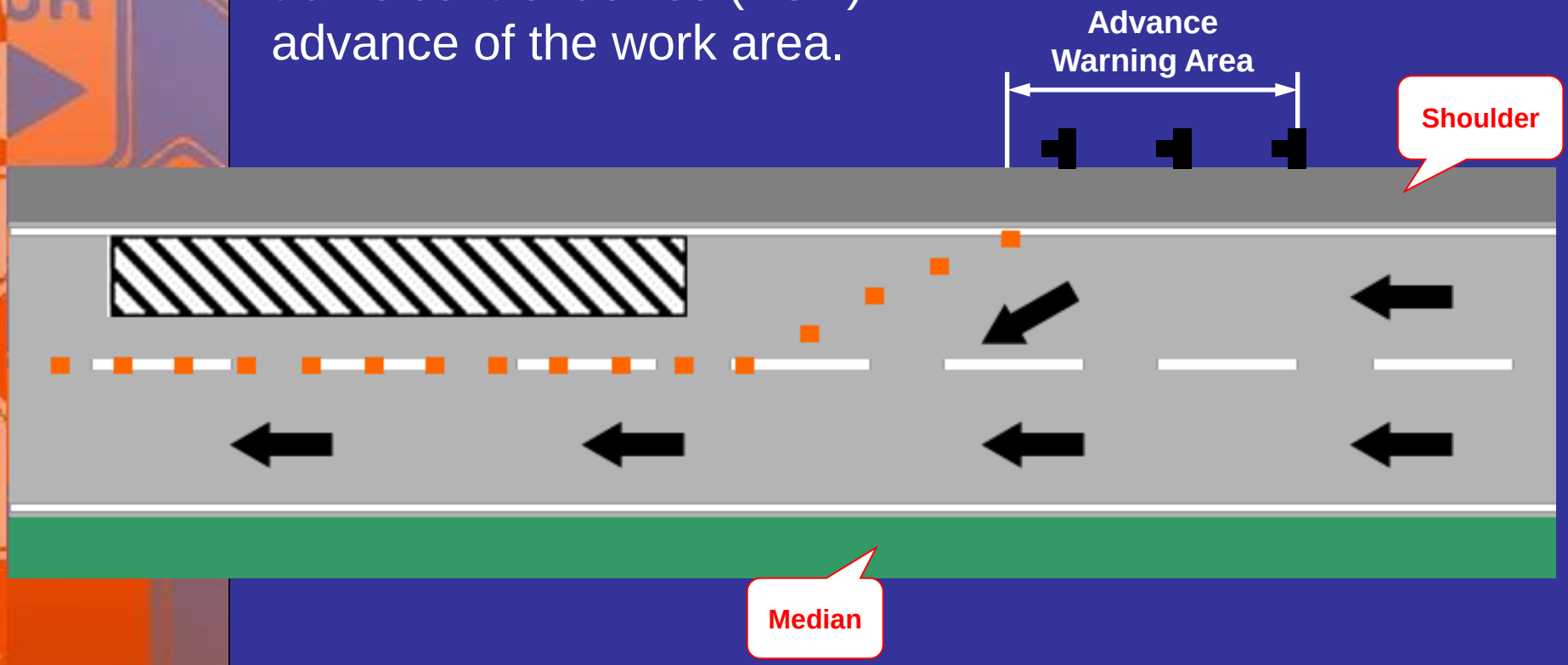
This diagram shows one side of a four lane highway with two lanes of traffic in each direction.



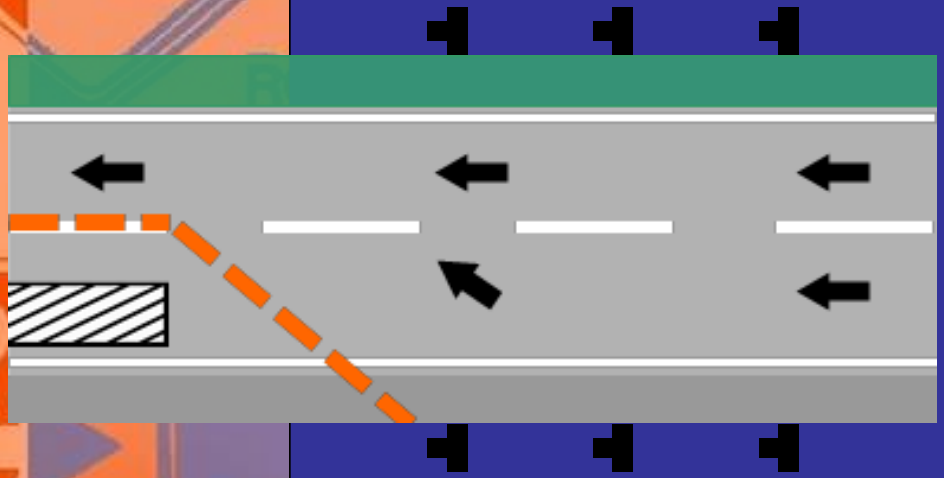
Advance Warning Area

The advance warning area informs drivers of what to expect ahead.

The AWA begins with the first traffic control device (TCD) in advance of the work area.



Advance Warning Area



3rd Sign

2nd Sign

1st Sign

The Book of Standards provides guidance for sign spacing in advance warning areas based on the type of roadway and the prevailing speed of traffic.

The type and location of TCDs varies for different situations in the advance warning area.

When 3 signs are used:

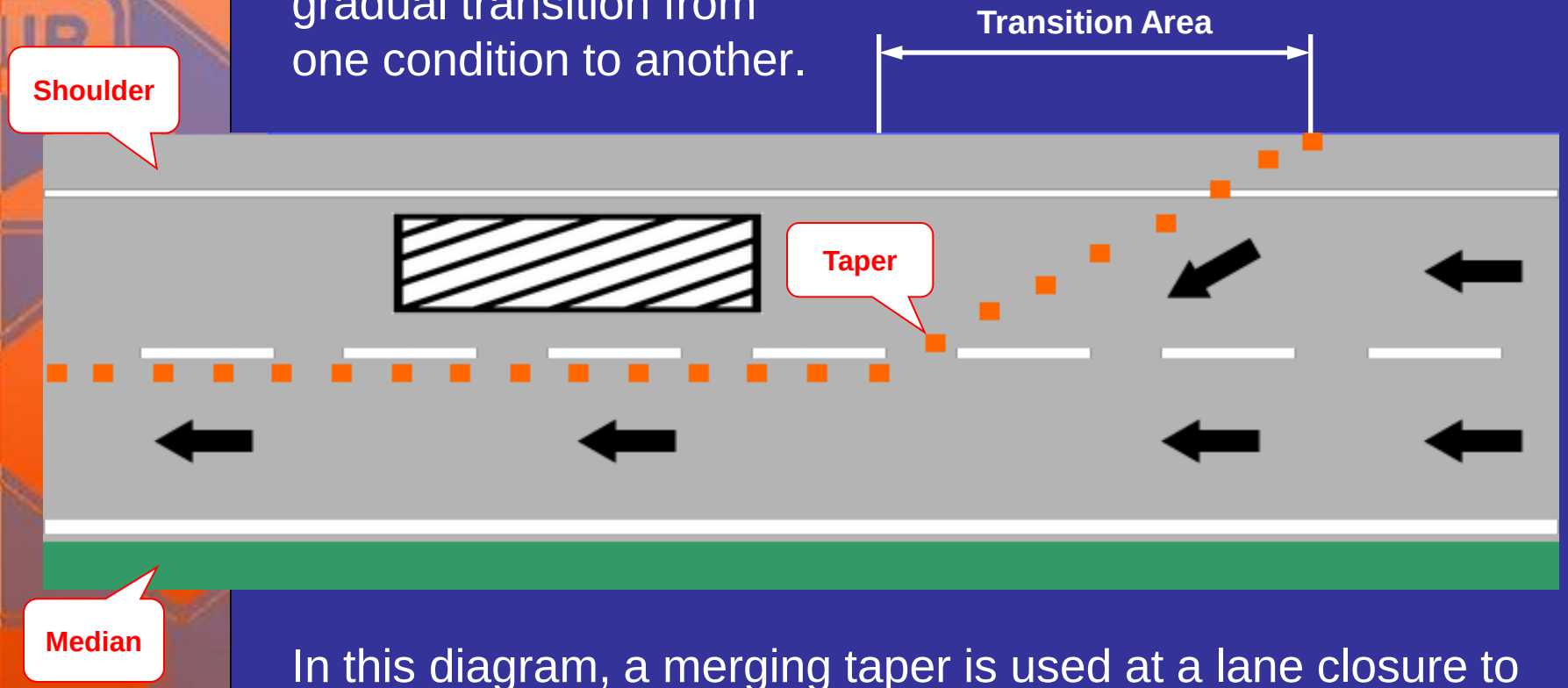
- 1st Sign: Gets motorist attention
- 2nd Sign: Gives specific message
- 3rd Sign: Provides guidance

If warning devices are placed too far in advance or spaced too far apart, the messages may lose effectiveness.

Transition Areas

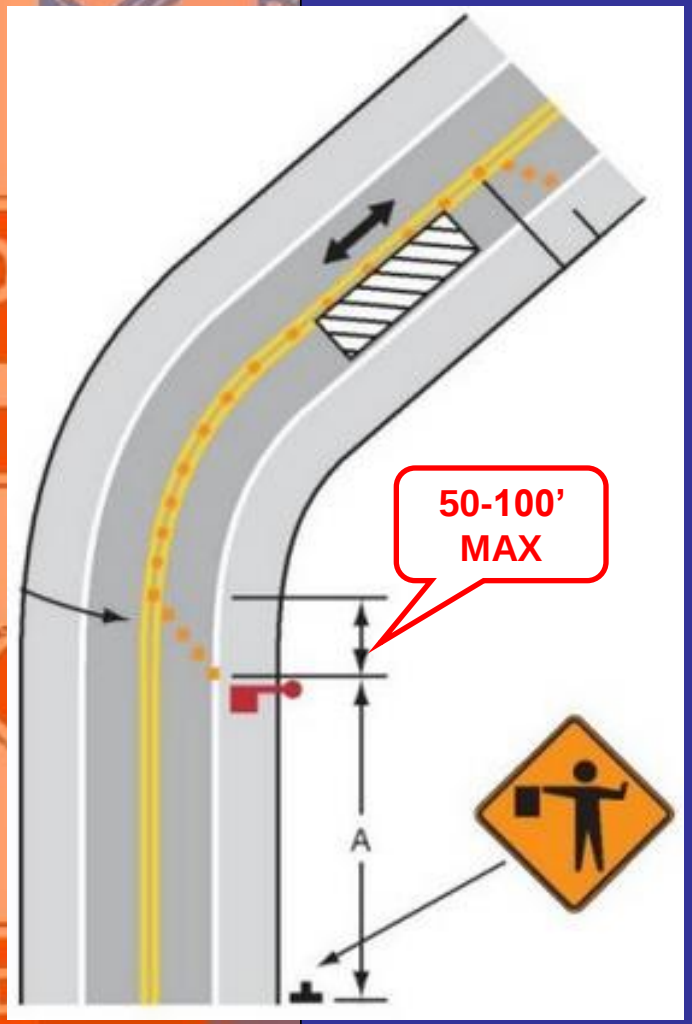
Transition areas are used to move traffic out of its normal path.

The taper provides a gradual transition from one condition to another.



In this diagram, a merging taper is used at a lane closure to merge two lanes of traffic into one lane.

One-Lane, Two-Way Taper



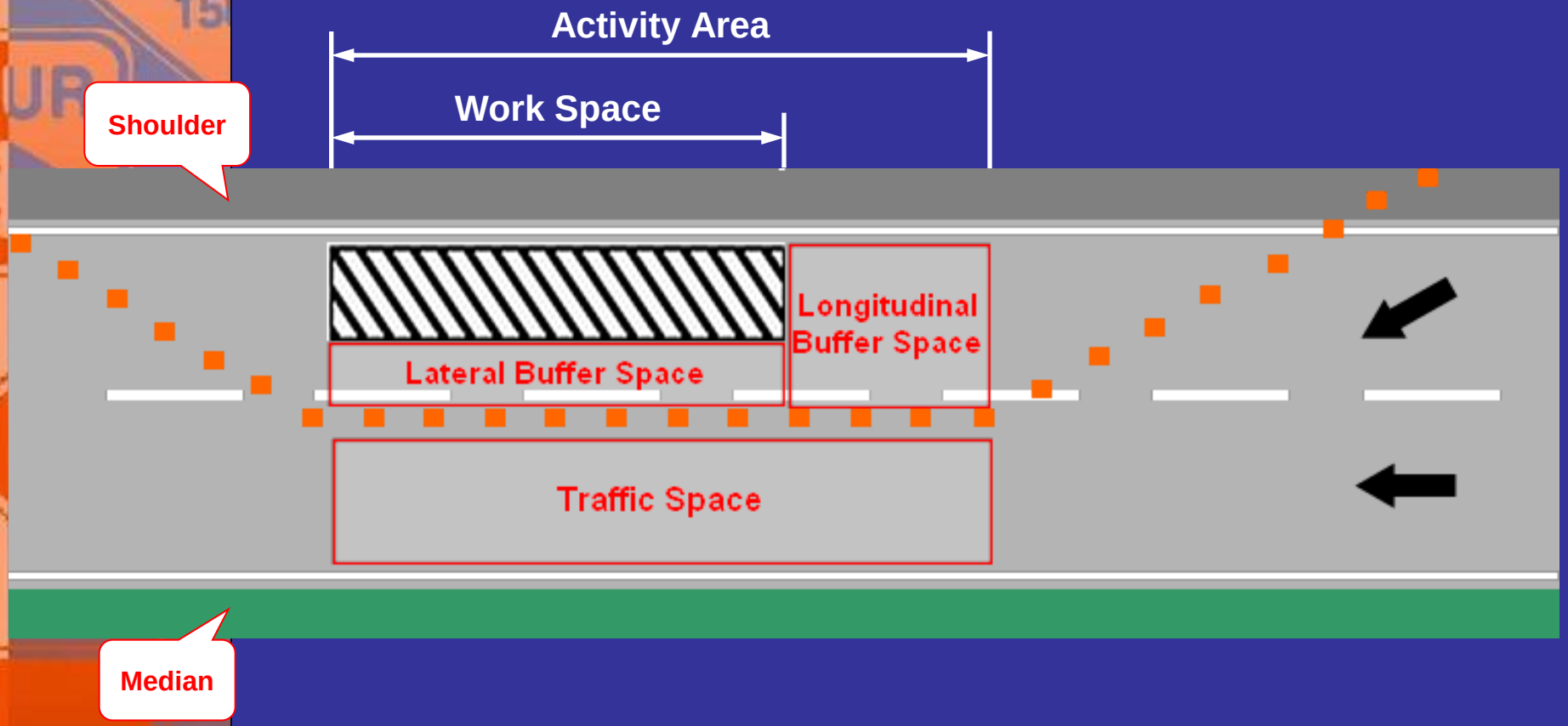
Flagging tapers are used on two-lane, two-way roads where one lane is closed.

Flagging tapers are short in order to affect a traffic slow down at the flagger station and through the work area.

Arrow panels should not be used on two-lane, two-way roads.

The Activity Area

The activity area includes the work space, traffic space, and buffer spaces.



Components of Activity Area

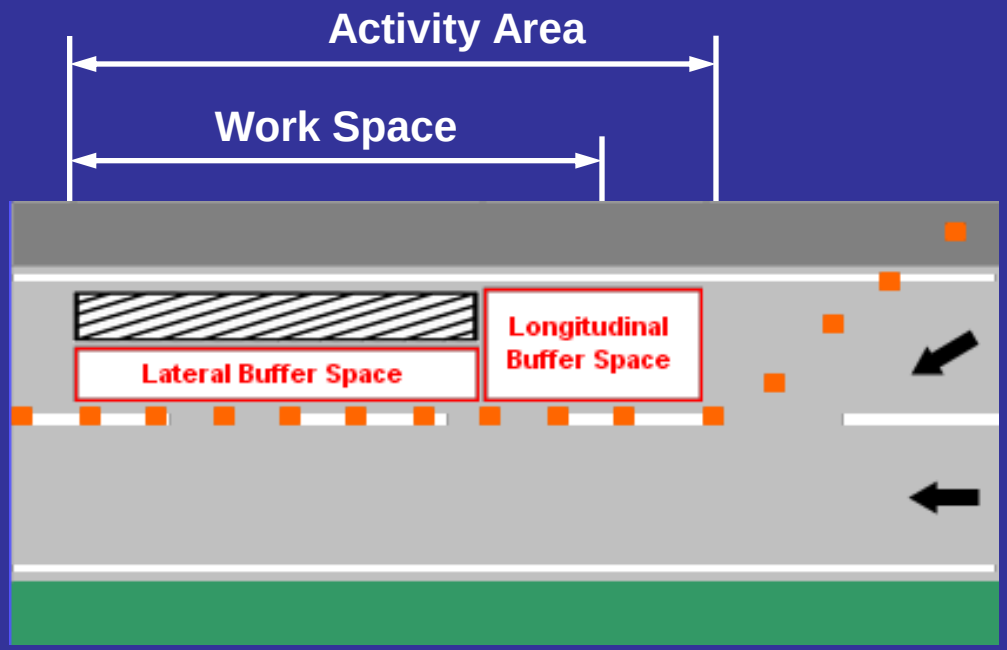
Work Space - The work space is the portion of the highway closed to road users and set aside for workers, equipment, and materials. Work spaces are usually delineated for road users by channelizing devices or temporary barriers.

Traffic Space - The traffic space allows road users to move through the activity area.

Buffer Space - The longitudinal buffer space provides a recovery area for errant vehicles. The lateral buffer space provides additional separation of the road user from the work area and the workers.

Buffer Spaces

Providing a buffer allows an area for recovery for motorists, enhancing their safety as well as for workers.



A motorist who runs through a taper may recover in the buffer area and safely re-enter traffic, when practical.

Buffer Spaces

- NO equipment, materials, debris, or vehicles should be positioned there.
- A longitudinal buffer space in advance of the work space is required.
- Site constraints may not accommodate a lateral buffer space; however, it should be provided where possible.

The Buffer Space

The longitudinal buffer space is ALWAYS unoccupied. No vehicles or equipment shall be positioned in it, however a protection vehicle may be deployed.

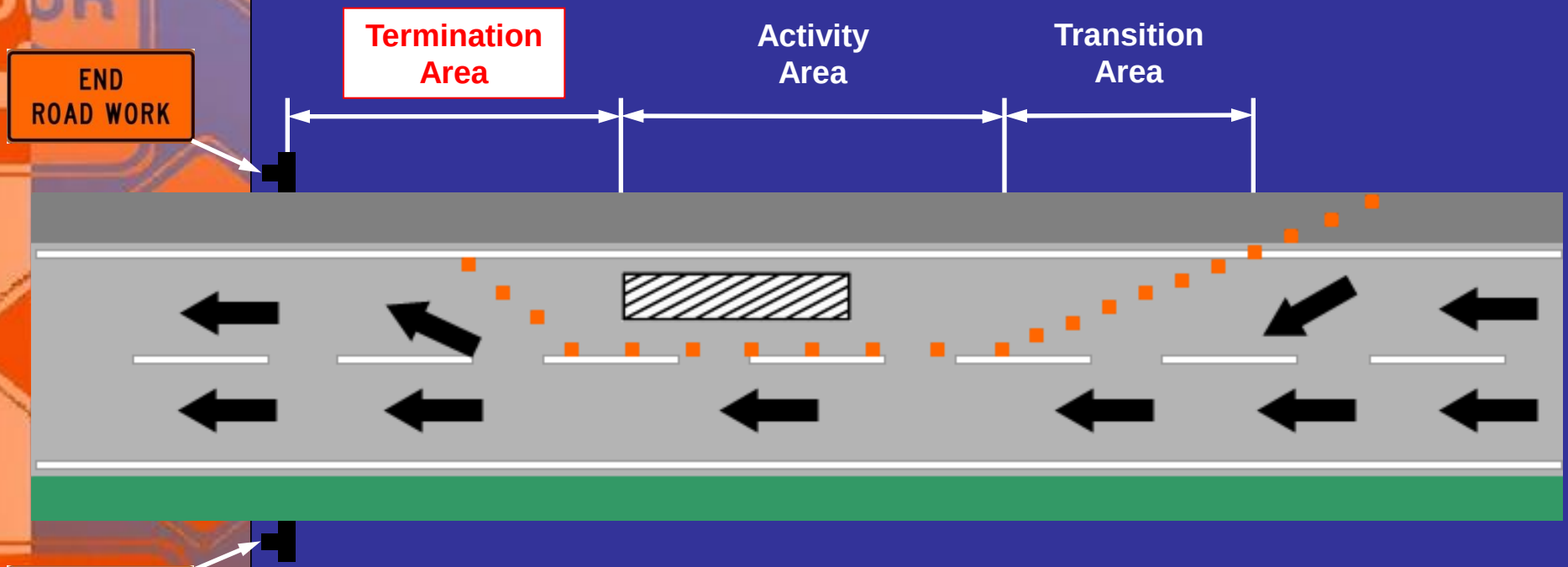
- Parking a law enforcement vehicle in the buffer space is dangerous
- Errant motorists who enter the buffer space may impact the law enforcement vehicle possibly injuring themselves and the law enforcement officer

A protection vehicle may be deployed in the buffer space to protect workers by restricting entrance to the work area.

The law enforcement vehicle should be on the shoulder, within the advance warning area.

The Termination Area

The termination area is used to return road users to their normal path. It extends from the end of the activity area to the last TCD. An END ROAD WORK sign may be placed 500 feet after the last device.



Multiple Choice

Question 1

The Book of Standards provides guidance for sign spacing in advance warning areas based on:

1. the type of roadway
2. the prevailing speed of traffic
3. location of work
4. time of day

A. 1 & 2

B. 2 & 3

C. 1 & 3

D. 2 & 4

Fill-in-the-Blank

Question 2

The _____ provides a gradual transition from one condition to another.

A. buffer

B. taper

C. TCD

Multiple Choice

Question 3

Which of the following is true about arrow panels?

A. May be used instead of static signs for long-term work zones.

B. May be used with a single arrow head and are used only for shoulder operations on the right (outside) lane.

C. May be placed in the buffer zone.

D. Are used with static signs to direct merging traffic.

Multiple Choice

Question 4

Which item is not part of the activity area?

A. Work space

B. Traffic space

C. Transition area

D. Buffer space

Answer Key

1. A
2. B
3. D
4. C

Contact Information

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