

## VDOT Compliance to Subpart K–Temporary Traffic Control Devices

The Virginia Department of Transportation (VDOT) complies with the FHWA Final Rule to Subpart K – Temporary Traffic Control Devices, through the following established processes and procedures for each element of the Final Rule:

### 1. Process/procedures for considering road user and worker safety that specifically address the following:

- *Use of positive protection devices in work zones* – VDOT has developed a process located in Appendix A of the Virginia Work Area Protection Manual, “Guidelines for use of Barrier/Channelization Devices”, which provide a methodical framework from which to assess every project as to the needs for appropriate devices to be employed during the construction phase. The process covers a broad range of traffic conditions, vehicle speed, length of need, and duration of construction to insure that motorist and worker safety are addressed in a uniform manner throughout the state. The process also allows upgrading the protection to include the use of positive protection (concrete barrier service or guardrail) if through an engineering evaluation more protection is desired than the guidelines reveal. The process and procedures for determining channelizing devices and level of protection is shown in **Attachment A**.

For lane closure activities, VDOT requires the use of a shadow vehicle in advance of the first work crew or hazard the motoring public would encounter. On multi-lane (four or more lane) roadways with posted speed limits of 45 mph or greater, the shadow vehicle shall be equipped with a NCHRP 350, TL-3 truck mounted attenuator (TMA) device.

Although used sparingly to date, VDOT also allows the use of water filled barriers in place of Group 1 (cones, tubular markers) or Group 2 (drums or vertical panels) channelizing devices.

- *Use of exposure control measures to minimize exposure* – VDOT, though the project design stage and Transportation Management Plan (TMP) development process examines a wide range of traffic control strategies to reduce motorist and worker exposure to construction activities, such as:
  - Full road closures;
  - Ramp closures;
  - Median crossovers;
  - Full or partial detours or diversions;
  - Lane shifts;
  - Protection of work zone setup and removal operations using rolling road blocks;
  - Performing work at night or during off-peak periods when traffic volumes are lower;
  - Accelerated construction techniques.

A Transportation Management Plan Checklist form (**Attachment B**) listing these and other traffic and worker related strategies has been developed to provide a thorough review and analysis of all the variables related to specific project sites.

Another strategy deployed on projects to reduce worker and motorist exposure is limiting lane closure activities to non-peak travel periods. Each of the five Transportation Regions of the state have developed allowable work hours based on traffic volumes where lane closures would produce minimum traffic queues.

- ***Use of other traffic control measures to minimize crashes*** – Through the use of the Virginia Work Area Protection manual, VDOT requires higher standards of temporary traffic control than Part VI of the MUTCD, including the use of:
  - Larger warning signs;
  - Additional warning sign messages;
  - Brighter sign sheeting;
  - Portable Changeable Message Signs;
  - Type C arrow panels;
  - 36” cones on all roadways;
  - 6” stripes on drums;
  - 1000’ long tapers on limited access highway lane closures;
  - Channelizing device spacing reduction;
  - Use of drums in unmanned work zones;
  - High quality work zone pavement markings and removal of misleading markings;
  - Longitudinal channelizing barricades;
  - Trained flaggers and traffic spotters;
  - Use of Truck Mounted Attenuators;
  - Work zone speed management (including changes to the regulatory speed and/or variable speed limits);
  - Law enforcement;
  - Worker and work vehicle/equipment visibility;
  - Worker training;
  - Public information and traveler information; and
  - Temporary traffic signals and Automatic Flagger Assistance Devices.

The 2005 Virginia WAPM can be accessed at the following link:

[http://www.virginiadot.org/business/resources/WAPM-2005-Revised10\\_05.pdf](http://www.virginiadot.org/business/resources/WAPM-2005-Revised10_05.pdf).

In addition, a workers field guide has been developed to make work zone traffic control information more readily available on the jobsite to ensure proper temporary traffic control installations to reduce work zone crashes, injuries, and fatalities:

[http://www.virginiadot.org/VDOT/Business/Const/asset\\_upload\\_file51\\_30870.pdf](http://www.virginiadot.org/VDOT/Business/Const/asset_upload_file51_30870.pdf).

- ***Safe entry/exit for work vehicles and equipment onto/from travel lanes*** – Page A-6 of the 2005 VA WAPM demonstrates construction access techniques for safe entry/exit into work areas using concrete traffic barriers. Section 6F.80, Vehicle Warning Lights, in the 2005 WAPM requires vehicles entering and exiting the work area at night to be equipped with and have operating at least one high intensity amber

warning light or amber strobe light visible from 360 degrees. Table 6F-1, Spacing of Channelizing Devices in the 2005 Virginia Work Area protection Manual addresses spot construction access where the spacing of devices every half mile is increased to allow easier ingress/egress into the construction area. Modifications to the WAPM will shortly require construction vehicles entering and exiting the work area to display a warning sign with the following message: WORK VEHICLE, DO NOT FOLLOW.

Language has been added to IIM 241.4, TE-351.2, Transportation Management Plan Requirements addressing the planning of Work Area Access (**Attachment D**) for designers to follow during the planning and development of traffic control plans. The information helps the designer address the question of how the contractor will safely move materials and equipment into the work area with a minimum of disruption to traffic.

**2. A policy on the use of uniformed law enforcement on Federal-aid projects:**

VDOT has an interagency agreement with the Virginia State Police for providing police patrol on construction/maintenance projects. CD-95.6, Construction Zone Safety Police Patrol (<http://www.virginiadot.org/VDOT/Business/Const/cdmemo-9506.html>) and IIM 93.14, Work Zone Safety:

(<http://www.extranet.vdot.state.va.us/locdes/electronic%20pubs/iim/IIM93.pdf>) provides policy direction on establishing police patrols on projects (**Attachment C**), and Appendix C in the VA WAPM, “Guidelines for use of VSP in Construction/Maintenance Works Zones” ([http://www.virginiadot.org/business/resources/WAPM-2005-Revised10\\_05.pdf](http://www.virginiadot.org/business/resources/WAPM-2005-Revised10_05.pdf)) provides guidelines on how to ensure maximum effectiveness of law enforcement used in work zone operations. Factors considered when planning and scheduling active law enforcement include:

- Night work operations that create traffic safety risks for workers and road users;
- Work operations that require a slow down or brief stoppage of all traffic in one or both directions (see TE-352, Slow Roll Temporary Traffic Control);
- High-speed roadways where unexpected or sudden traffic queuing is anticipated;
- Traffic control setup or removal that presents significant potential risks to workers and road users;
- Frequent worker presence adjacent to high-speed traffic without positive protection devices;
- Other work site conditions where traffic presents a high risk for workers and road users, such that the risk may be reduced by improving road user behavior and awareness.

**3. Provisions for payment that address the following:**

- ***Payment for work zone traffic control features and operations are not incidental to the contract, or included in payment for unrelated work items*** – For the majority of construction projects, dedicated pay items are established for temporary traffic control items as required in the 2007 Road and Bridge Specifications, Section 512, Maintaining Traffic (<http://www.virginiadot.org/business/resources/const/2007SpecBook.pdf>) and IIM 94.14, Work Zone Safety: (<http://www.extranet.vdot.state.va.us/locdes/electronic%20pubs/iim/IIM93.pdf>) .

- **Separate pay items are provided for major categories of traffic control devices, safety features, and work zone safety activities** - Section 512.04, Measurement and Payment, of the 2007 Road and Bridge Specifications gives direction for payment of the following temporary traffic control items:
 

○ Flagger service	Hour
○ Pilot vehicle	Hour
○ Electronic arrow	Hour
○ Warning light (Type)	Day
○ Group 2 channelizing device	Day
○ Traffic barrier service (Type and/or Standard)	Linear foot
○ Traffic barrier service Guardrail terminal (Standard)	Each or Linear foot
○ Impact attenuator service (Type)	Each
○ Temporary signalization	Lump sum
○ Construction pavement marking (Type and width)	Linear foot
○ Const. pavement message marking (Type and message)	Each
○ Eradication of existing pavement marking	Linear foot
○ Temporary pavement marker ( [ ]-way)	Each
○ Temporary detour (Standard and type)	Linear foot
○ Aggregate material (No.)	Ton
○ Type III barricade (Width)	Each
○ Construction signs	Square foot
○ Truck-mounted attenuator	Hour
○ Temporary traffic control signal	Lump sum
○ Portable traffic control signal	Lump sum
○ Portable Changeable Message Sign	Hour

Lump sum payment for temporary traffic control is allowed for specific types of projects where the following conditions exist as directed by CD-2007-07 Memorandum (<http://www.viriniadot.org/business/resources/const/cdmemo-0707.pdf>):

- The limits of construction activity are clearly defined and unlikely to change during the duration of the Contract.
- Scope of work should not be subject to change over the life of the project.
- There should be potential advantages to the traveling public, the Contractor or VDOT.
- The appropriate traffic control layouts can be obtained from the Virginia Work Area Protection Manual (VWAPM) or MUTCD and applied to site conditions by experienced personnel without significant modification.

**4. Quality guidelines for temporary traffic control devices:**

VDOT has adopted the American Traffic Safety Services Association (ATSSA) “*Quality Standards for Temporary Traffic Control Devices*” for reviewing and determining acceptable, marginal, and unacceptable TTC devices. The quality standard is referenced throughout the 2005 Virginia Work Area Protection Manual and in Section 512 – Maintaining Traffic of the Road and Bridge Specifications. Copies of the ATSSA quality standards are distributed in Work Zone Traffic Control training classes.

VDOT has also created a work zone checklist form (Appendix B 2005 WAPM) to assist in reviewing and documenting TTC inspections and established the following inspection schedule to provide ongoing compliance with the quality guidelines through the 2005 VA WAPM and TE-279 memorandum: Projects shall be reviewed daily for wz traffic control and documented weekly using the WZ Checklist form. Projects should be reviewed and documented every other week at night.

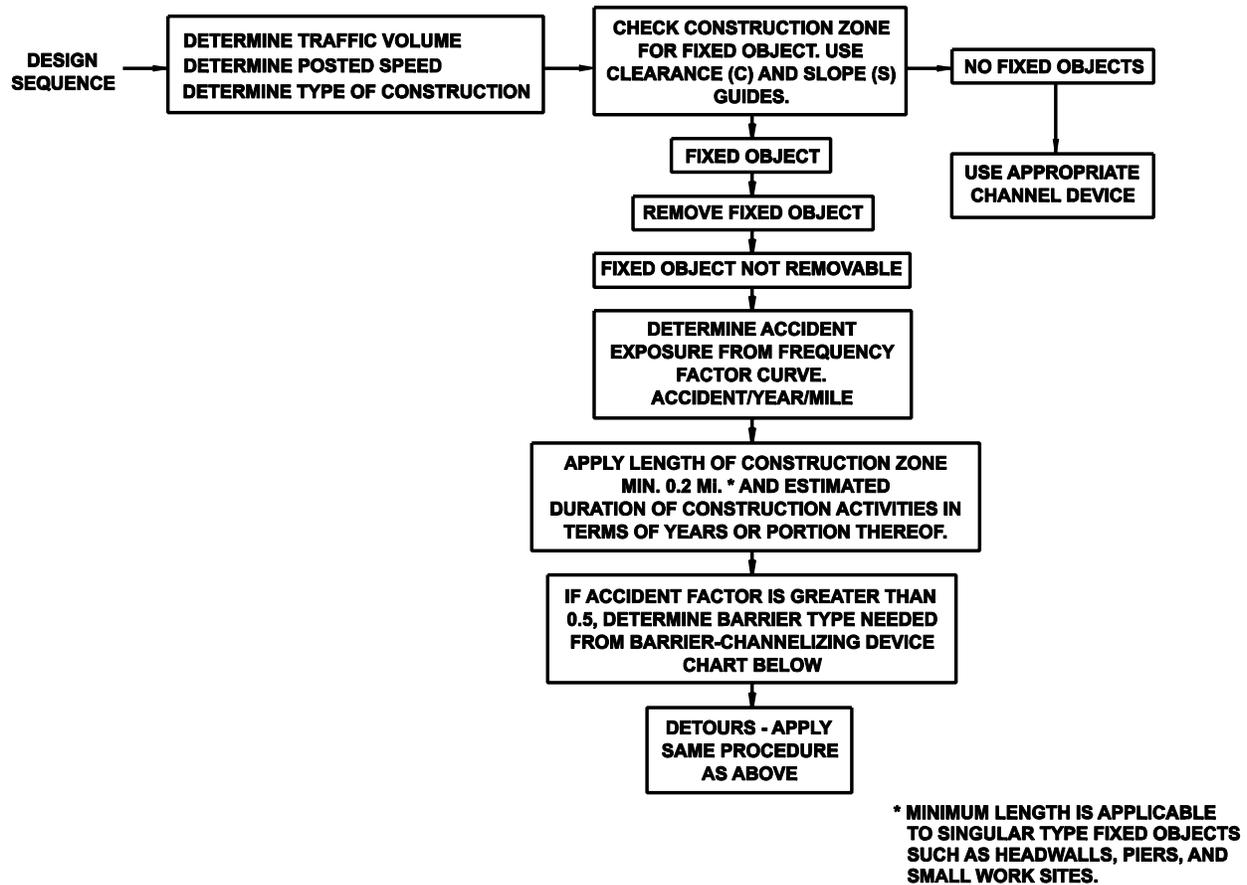
## **Attachment A**

### **APPENDIX A of the 2005 Virginia Work Area Protection Manual**

#### **GUIDELINES FOR USE OF BARRIER/CHANNELIZATION DEVICES**

The following Safety Guidelines for Construction Zones have been developed to provide a methodical framework from which to assess every project as to the needs for appropriate techniques and devices to be employed during the construction phase. This covers a broad range of traffic conditions, vehicle speed and duration of construction, to insure that motorist and worker safety are addressed in a uniform manner throughout the State. Of particular note is the step in the design sequence that asks the question, "Can the fixed object be removed?" The use of barriers to shield fixed objects should only be employed if it is not economically feasible to provide an alternate method of construction. The "Guidelines" are to be used as a supplement to the Millennium edition of the Manual on Uniform Traffic Control Devices (MUTCD) and the Virginia Work Area Protection Manual.

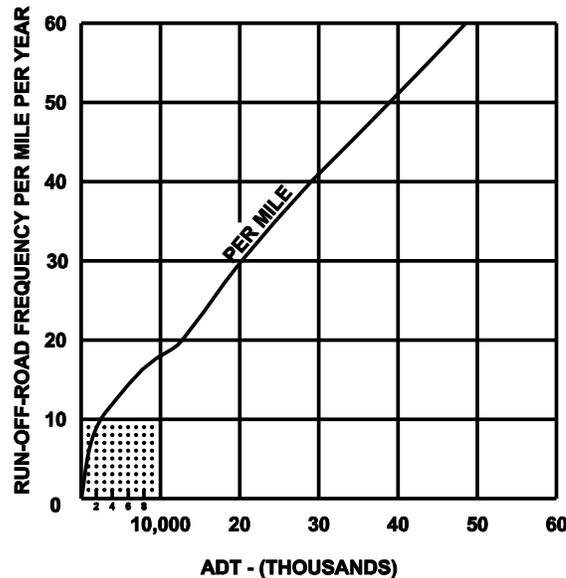
**DETERMINATION OF BARRIER / CHANNELIZATION DEVICES  
 IN CONSTRUCTION ZONES**



**NOTE: A FIXED OBJECT IS ANY CONDITION RESULTING FROM THE CONSTRUCTION ACTIVITIES OR ANY OBJECT CONSIDERED DAMAGING TO A MOVING VEHICLE AS WOULD BE THE FOLLOWING:**

<b>HEADWALL</b>	<b>BARRIER ENDS</b>	<b>OPEN EXCAVATION</b>
<b>PARAPET</b>	<b>DROP INLET</b>	<b>SIGN POLES &amp; BASES</b>
<b>MANHOLE</b>	<b>PIPE</b>	<b>BRIDGE PIER</b>
<b>GUARDRAIL END</b>	<b>SLOPE</b>	<b>BOX CULVERT</b>
<b>STORED MAT'L.</b>	<b>EQUIPMENT</b>	<b>DROP OFF</b>

**FREQUENCY FACTOR CHART**  
**FREQUENCY FACTOR CURVE FOR AVERAGE GENERALIZED CONDITIONS**  
**(STATEWIDE) FOR RUN-OFF-ROAD ACCIDENTS IN CONSTRUCTION ZONES**



DATA PRESENTED IS FOR 2 WAY ADT.  
WHEN APPLYING THIS CHART TO 4 OR MORE  
LANES UNDIVIDED AND TO DIVIDED ROADWAYS,  
REDUCE ADT BY ONE HALF BEFORE ENTERING CHART.

Having determined a fixed object, excavation or hazardous slope exists within the clear zone and cannot be removed, proceed with the following:

- Determine accident exposure from Frequency Factor Curve [Accidents Mile/Year].
- Apply Length of Construction Zone and Estimated Duration of Construction Activities in terms of years or portion thereof.

For singular type fixed objects such as headwalls, piers, and small work sites use minimum of 0.2 mi. for Length of Construction Zone.

- Example: (2 lane - 2 way)  
ADT = 20,000  
Length of Construction Zone = 1.6 mi.  
Construction Time = 0.5 yr.

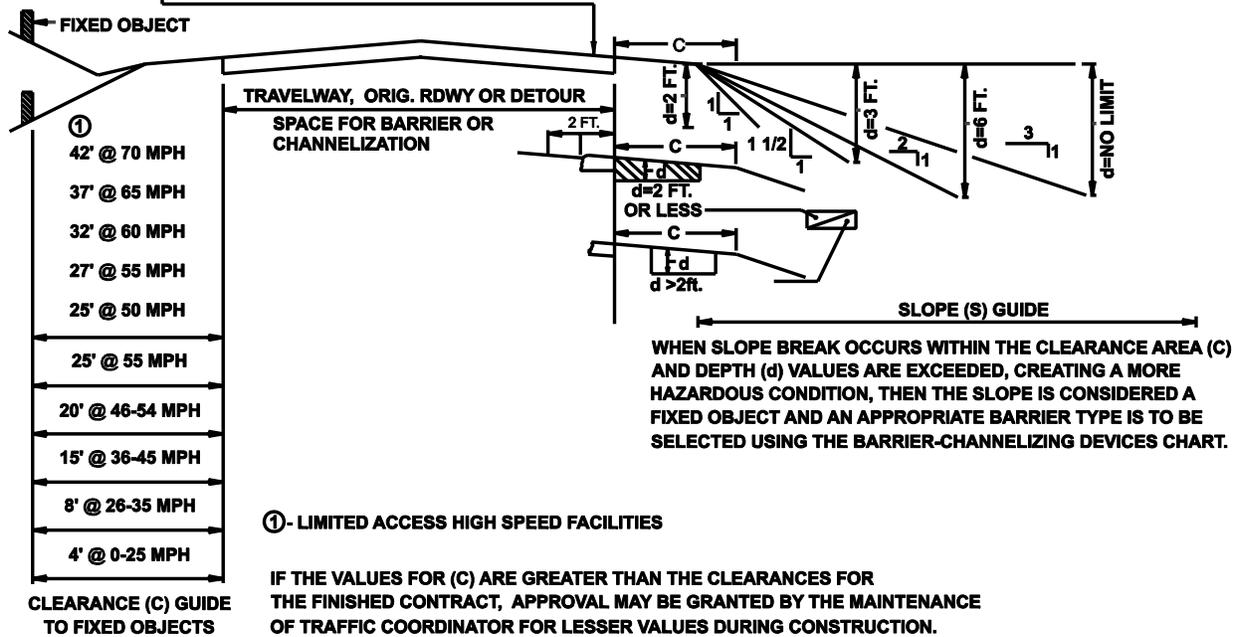
(1) From Frequency Factor Chart, ADT of 20,000 would indicate 30 Run-off-Road Accidents Mile/Year.

(2) Accident Factor is  $30 \times 1.6 \text{ mi.} \times 0.5 \text{ yr} = 24.0$

- If Accident Factor is greater than 0.5, go to Barrier Channelization Device Chart to determine type needed.

**FIXED OBJECT CLEARANCE & SLOPE GUIDES**

**ROAD EDGE PAVEMENT MARKINGS TO BE PROVIDED ON TRAVELWAYS ALTERED DURING CONSTRUCTION IF EXISTING TRAVELWAY IS MARKED AND DETOUR IS PAVED. (LOCATION TO BE IN FRONT OF BARRIER OR CHANNELIZING DEVICE.)**



**Example**

ADT = 15,000 (2-lane, 2-way)  
 1 1/2 : 1 Slope d = 5 ft.  
 Construction Time = 0.5 yr.  
 55 MPH

Fixed Object @ 18 ft.  
 Length of Construction Zone = 1.6 mi.  
 1 ft. excavation at 10 ft.  
 Accident Frequency Factor = 17

- (1) From Clear Zone Guide, clear zone (c) 55MPH = 20 ft.
- (2) Fixed object @ 18 ft. is within 20 ft. (c); go to Barrier Channelization Device Chart For 15,000 ADT and 55MPH, Type A Barrier required.
- (3) Since 5 ft. for 1 1/2 : 1 slope exceeds 3 ft. in Slope (s) Guide, Type A Barrier required.
- (4) Since 1 ft. excavation occurs within 20 ft. (c), use lesser value from upper left segment of Barrier-Channelization Device Chart, Type B Barrier required.

**SELECTING BARRIERS, BARRICADES AND CHANNELIZING DEVICES**

BARRIER-CHANNELIZING DEVICE CHART					
POSTED SPEED LIMIT - MPH					
EXISTING TRAFFIC ADT	0 - 25	26 - 35	36 - 45	46 - 54	55+
0 - 750	1, 2	1, 2	1, 2	1, 2	1, 2
751 - 5500	1, 2	1, 2	1, 2	B	B
5500 - 15000	1, 2	1, 2	B	B	A
ABOVE 15000	1, 2	1, 2	A	A	A

A MORE POSITIVE TYPE OF BARRIER CAN BE SUBSTITUTED FOR VALUES SHOWN.

BARRIER BEGINNINGS ARE TO BE PLACED AS FAR AS POSSIBLE FROM TRAVELWAY.



WHEN AN EXCAVATION OCCURS WITHIN THE CLEARANCE (C) AREA WITH A DEPTH (d) BETWEEN 6" AND 2' USE THE LESSER VALUE FROM THE UPPER LEFT SEGMENT OF THE BARRIER - CHANNELIZATION DEVICE CHART. ALL OTHER CONDITIONS REQUIRING A BARRIER OR CHANNELIZATION DEVICE SHOULD USE THE TYPE DEPICTED IN THE LOWER RIGHT SEGMENT.

**NOTE: DRUMS SHALL BE USED TO DELINEATE ALL UNMANNED WORK AREAS**

**TYPES OF BARRIERS (Fixed Object Class)**  
 FOR DETAILS - SEE PLANS  
 ALPHABETICAL LISTING OF BARRIERS IS IN ORDER OF POSITIVE REDIRECTION CAPACITY. INSTALLATION IS TO BE IN ACCORDANCE WITH THE ROAD AND BRIDGE STANDARDS.

**A**  
POSITIVE

**B**  
LESS POSITIVE

**BRIDGES**

TEMPORARY CONCRETE PARAPET

BR. ENGR. APPROVAL

TEMPORARY CONCRETE TRAFFIC BARRIER

BOLTED DOWN CHANNEL SECTION SUBJ. TO BR. ENGR. APPROVAL

**BARRICADES & CHANNELIZING DEVICES**  
 (FOR DETAILS AND METHOD OF PLACEMENT SEE MUTCD AND PLANS)

CONES GROUP 1

DRUM GROUP 2

**SPACING GUIDE**

SPEED	0-35	36+
SPACING	40	80

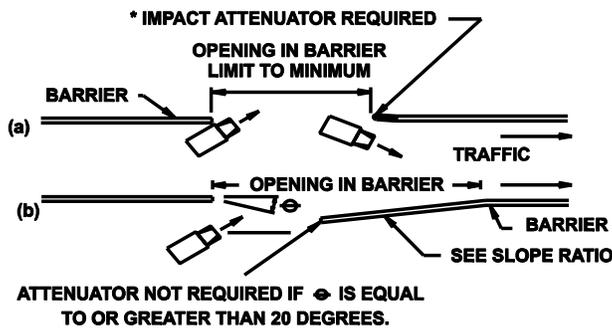
CHANNELIZATION DEVICE SPACING ALONG TRAVELWAY IN FEET. SPACING ON CURVES 6° OR GREATER, ON TRANSITIONS OR LOCATIONS DETERMINED BY REGIONAL TRAFFIC ENGINEER TO BE 1/2 OF THE TRAVELWAY SPACING.

**PC BARRIER END TREATMENT**

To be USED ONLY when "Clear Zone" distance requirements are met

12 FT. MINIMUM

**CONSTRUCTION ACCESS TECHNIQUES**



\* IMPACT ATTENUATORS USED WITH BARRIER OPENINGS FOR EQUIPMENT ACCESS WILL NOT BE SUMMARIZED. (SEE SPECIFICATION 512).

**PAVEMENT PLACEMENT GUIDE**

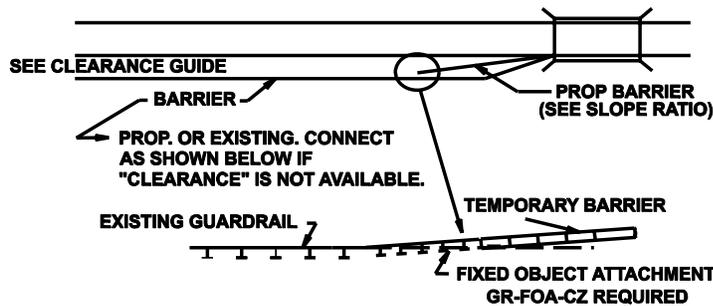
GROUP 2 (DRUMS) SHALL BE USED TO DELINEATE UNMANNED WORK AREAS.

USE GROUP 1 OR 2 DEVICES ONLY

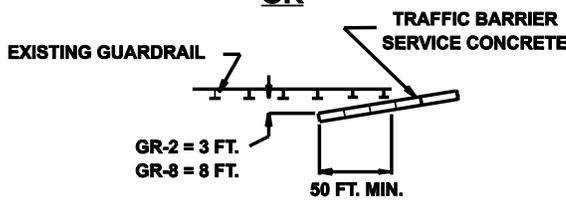
TEMPORARY 6 : 1 WEDGE OR AS DIRECTED BY THE ENGINEER



**INTRODUCED BARRIER (FIXED OBJECT)**



OR



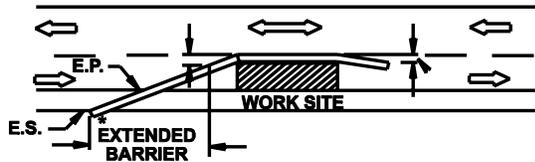
OR



BARRIER TRANSITION FLARE RATE	
70 MPH	= 22:1
65 MPH	= 20:1
60 MPH	= 19:1
55 MPH	= 17:1
50 MPH	= 16:1
45 MPH	= 14:1
40 MPH	= 13:1
35 MPH	= 11:1
30 MPH & BELOW	= 10:1

WHEN THE BARRIER TRANSITION SLOPE IS ON HORIZONTAL ALIGNMENT THE TOTAL OFFSET SHALL BE PRORATED AROUND THE CURVE IN LIEU OF A STRAIGHT LINE SLOPE.

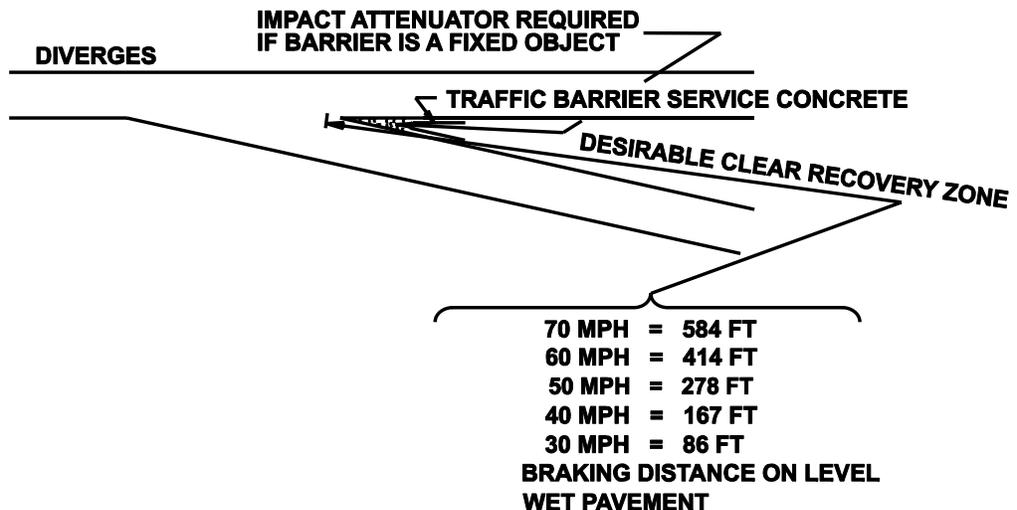
**INTRODUCED BARRIER (FIXED OBJECT)**



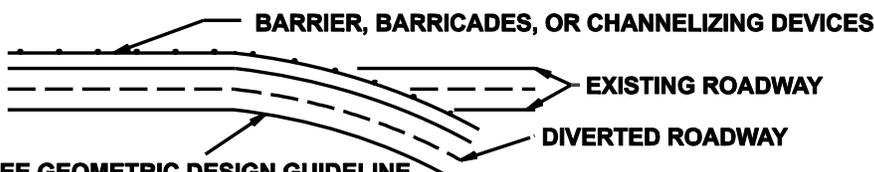
SEE TYPICAL TRAFFIC CONTROL FIGURE TTC-16.0 FOR DETAIL INFORMATION ON BARRIER INSTALLATION AND REQUIRED TRAFFIC CONTROL

E. P. = EDGE OF PAVEMENT  
 E. S. = EDGE OF SHOULDER

\* WHENEVER A TRAVEL LANE IS DIVERTED WITH THE USE OF CONCRETE BARRIERS AND THE CLEARANCE DISTANCE DOES NOT PLACE THE BARRIER OR ITS END TO THE OUTSIDE OF THE SHOULDER OF THE ONCOMING LANE, THEN THE BARRIER IS TO BE EXTENDED TO THE SHOULDER, OR AN IMPACT ATTENUATOR SHALL BE UTILIZED.



**DIVERSION**



SEE GEOMETRIC DESIGN GUIDELINE GS-10 FOR GEOMETRICS AND SIGHT DISTANCE VALUES WHEN TRAFFIC IS DIVERTED FROM NORMAL PATH OF LANE OR LANES. USE CLEARANCE GUIDE FOR FIXED OBJECTS.

## Attachment B

### Transportation Management Plan Design Checklist

A comprehensive transportation management plan is a project within a project. VDOT is obligated to provide a safe and workable plan for controlling traffic that is consistent with the project's construction requirements. Although there may be more than one workable solution, a thorough analysis of all the variables will assist in producing a TMP that sets the appropriate level of safety for the general public as well as construction workers. The Project manager, with the Project Team, should thoroughly review this checklist to ensure that all applicable work zone elements have been captured during the design phases.

Required checklist items are in bold text. Not all items listed are applicable to every project, but should be considered when appropriate.

#### PROJECT DEFINITION & PLANNING

- Transportation Management Plan Strategy**
  - Scoping meeting with Regional Operations Director, Regional Traffic Engineer and Regional Work Zone Safety Coordinator**
  - Formal meeting with local agencies such as law enforcement, EMS/Fire, schools, etc. as applicable
  - Establish project's TMP category**
- Work Zone Capacity Analysis**
  - Existing lane capacity**
  - Work hour restrictions (days & hours)**
  - Detour route capacity analysis**
  - Appropriate work zone type(s)** (Long-term stationary, Intermediate stationary, etc.)
- Existing Operational Factors**
  - Local traffic operational problems**
  - Accidents & accident rate**
  - Geometric conflicts or issues**
  - Sight distance problems**
  - Adjacent project coordination**
  - Commercial/private access impacts
  - Special events
  - Seasonal factors
  - Ferry schedules
  - On-street parking
  - Emergency services
  - Transit, schools, mail delivery, parks, etc.
- Work Zone Location Considerations**
  - Define all work zone limits/locations**
  - Existing lane conflicts
  - Roadside hazards
  - Overhead/over width limitations
  - Grade/profile conflicts
  - Staged construction/work zones
- Worker Safety**
  - Positive protection (barrier)**
  - Work exposure during**
    - o **Set-up**
    - o **Removal**
    - o **Work operations**
  - Flagger considerations**
  - Truck-mounted attenuator (TMA)**
  - Work zone intrusion analysis**

## Transportation Management Plan Design Checklist

### Work Zone Temporary Traffic Control Strategies

**Long-term**

**STRATEGY**

- Total road closure
- Partial road closure
- Interchange closure
- Ramp closure
- Crossroad closure
- Lane shift
- Lane closure
- Shoulder closure
- Reversible lanes
- Temporary traffic signal
- Temporary yield/stop control
- Temporary widening/connections
- Temporary structures

**PLAN TYPE**

- Detour
- Crossover
- Detour
- Detour/Alternate route
- Detour/Alternate route
- Temporary Channelization
- Temporary Channelization/barrier
- Temporary Channelization/barrier
- Temporary Traffic Control figure/detail
- Temporary Traffic Control figure/detail
- Temporary Channelization/barrier
- Temporary Channelization/barrier

**Short-term**

**STRATEGY**

- Off-peak road closure
- Off-peak Partial road closure
- Off-peak Interchange closure
- Off-peak Ramp closure
- Off-peak Crossroad closure
- Off-peak Lane closure
- Shoulder closure
- Flagger control
- figure/detail
- Pilot car control

**PLAN TYPE**

- Detour
- Detour/Crossover
- Detour/Alternate Route
- Detour/Alternate Route
- Detour/Alternate Route
- Temporary Traffic Control figure/detail
- Temporary Traffic Control figure/detail
- Temporary Traffic Control
- Temporary traffic Control figure/detail

Refer to the Virginia Work Area Protection Manual for guidelines on work zone types and information on the application of Temporary Traffic Control Figures.

### Construction Considerations for Temporary Traffic Control

- Removal of permanent traffic control features**
- Maintaining existing features (illumination, signing, signals, etc.)**
- Work area access control (safe ingress & egress)**
- Adequate work area space for the contractor**
- Adequate space for material/equipment storage**
- Temporary illumination
- Temporary drainage
- Switchover to new stage (time for pavement marking/marker changes)
- Winter shut-down instructions (intermediate stage?)
- Cure time closure pours
- Existing shoulder durability (including drainage grates) for temporary lane shifts

## **Transportation Management Plan Design Checklist**

### **Work Zone Public Information and Outreach Strategies**

- Brochures/Flyers/Fact Sheets/Newsletters
- Public Meetings/workshops/Events
- Paid Advertising (TV, Radio, Newspaper)
- Newspaper Articles
- TV/Radio traffic news
- Press Kit
- Project Hotline/511 System
- Dynamic Message Signs
- Highway Advisory Radio (HAR)
- Freight travel information
- Rideshare promotions
- Telecommuting promotions
- Park & ride/transit promotions
- Information center/kiosk
- Web site
- Web-connected traffic cameras

### **Work Zone Traffic Operations Strategies**

- Incident/emergency response plan
- Law enforcement presence/enforcement
- Increased penalties for work zone violations
- Smart center contact information
- ITS for traffic monitoring/management
- Speed limit reduction
- Railroad crossing controls
- Truck/heavy vehicle restrictions
- HOV lanes
- Separate truck lanes
- Signal timing/coordination

## Attachment C

### CONSTRUCTION DIVISION MEMORANDUM

**GENERAL SUBJECT:** CONSTRUCTION ZONE SAFETY

**NUMBER:** CD-95-6

**SUPERSEDES:** CDO-87-6

**SPECIFIC SUBJECT:** POLICE PATROL

**DATE:** JUNE 1, 1995

Original w/Signature on file in Construction Division

C.F. GEE

CONSTRUCTION ENGINEER

#### **DIRECTED TO - DISTRICT ADMINISTRATORS**

The Department has had an agreement with the Department of State Police, since 1987, to provide police patrols in construction work zones, upon request by the District Administrator. We want to encourage the use of this resource in order to enhance the safety of the work zones.

The need for police patrols is to be determined at the field inspection stage of project design and shall be established in accordance with the guidelines in Location & Design's, Instructional & Informational Memorandum for Construction Zone Safety LD (D) 93.

The attached agreement and referenced policy memorandum can be used also as a guide for the Districts and Residencies in working with local police and sheriff's departments to obtain similar type police patrols.

Your attention to the need and use of police patrols in construction and maintenance zones is greatly appreciated.

#### **From IIM 93.14, Work Zone Safety:**

#### **POLICE PATROL (CONSRUCTION / MAINTENANCE ZONES)**

- The Commonwealth of Virginia, through an agreement between the Department of Transportation and the Department of State Police, has undertaken a program to preserve and enhance the safety of both the traveling public and members of the construction forces in their joint use of roadway facilities that are undergoing reconstruction.
- This program provides safety enhancement through the employment of extraordinary traffic surveillance/enforcement in the construction zones by State Trooper Patrols.
- The objective is to enforce proper speed limits in work zones where traffic problems are evident or anticipated through highly visible presence of State Trooper Patrols.
- Police Patrols will not flag traffic, but will direct traffic in emergency situations, such as accidents. Troopers will operate in full uniform in a marked patrol vehicle.
- Correctable situations or conditions shall be reported by the trooper to the appropriate VDOT personnel. There shall be no direct contact between troopers and contractors. The District Administrator or staff representative makes all contacts with State Police, including notice to terminate services. Communication shall be maintained between VDOT and the State Police throughout construction of project.

*Virginia Department of Transportation*  
*Compliance to Subpart K – Temporary Traffic Control Devices*

- Enhanced enforcement must be provided at appropriate phases of construction and times of greatest need (blocked lanes, closed shoulders, etc.).
- At Field Inspection the need for police enforcement will be discussed along with the Maintenance of Traffic/Sequence of Construction Plan. The decision to request Police Patrol assistance will be based on engineering experience and judgment, traffic volumes and speeds, work zone geometrics, accident data, and other factors based on the District personnel's knowledge of the area. A tentative decision will be made and preliminary estimates prepared.
- A final decision is made at the Pre-Advertisement meeting, determining estimated hours and hourly rates. A State Police representative should attend the Pre-Advertisement meeting. The District Administrator will forward all information to the State Police Area Sergeant.
- Final arrangements are made with the State Police following the Pre-Construction meeting based on the contractor's approved method of operation.

Pay Item:

- Specify Police Patrol in estimate under Group 9 Items (State Forces)

**Interagency Work Zone Safety Patrol Enforcement Agreement**

This Agreement is entered into between the Virginia Department of Transportation and the Virginia Department of State Police effective as of the first day of May, 2005. This Agreement supersedes the Agreement dated January 1, 1988, entitled "Interagency Work Zone Safety Patrol Enforcement Agreement".

WHEREAS the Virginia Department of Transportation (VDOT) and the Virginia Department of State Police (State Police) desire to preserve and enhance the safety of both the traveling public generally and members of the construction forces generally in their joint use of roadway facilities undergoing construction projects; and

WHEREAS safety may be enhanced through the employment of extraordinary traffic surveillance/enforcement in highway construction zones, therefore, VDOT and the State Police enter into the following agreement to continue highway construction project patrols.

1. The State Police will use its best efforts to seek volunteer state troopers to work paid overtime to staff the highway construction project patrol.
2. State troopers assigned to construction project patrols will be under the sole control and supervision of the State Police at all times while engaged in patrolling construction projects.
3. During the design phase of a project, the VDOT District Administrator (or designee) will contact the State Police Area First Sergeant and the two of them will review the proposed plans to determine if it is both desirable and feasible to use a construction project patrol to enhance safety in a construction area of the project in question. Where project patrol is deemed feasible, the District Administrator (or designee) and Area First Sergeant will agree on the desirable number of hours of patrol required from time to time during the duration of a construction project.
4. The State Police will be solely responsible for ultimately determining the timing, method and duration of patrol; however, patrols should generally follow the guidelines

established and shown in the Work Area Protection Manual as well as the State Police Training Manual. The VDOT District Administrator (or designee) will be responsible for notifying the State Police of the dates that construction project patrol is needed in Work Zones. Scheduling of construction project patrols shall be done as far in advance as possible to facilitate planning and assignment of State Police troopers. The VDOT District Administrator (or designee) will also be responsible for notifying the State Police whenever a scheduled construction project patrol is no longer needed on a particular date.

5. Troopers patrolling construction projects will be available for temporary reassignment to other areas in the event that emergencies arise during their patrol and the troopers and/or troopers' supervisors shall have the same discretion to make this determination as would exist in similar situations absent this agreement.

6. Upon presentment of agreed upon vouchers, VDOT will reimburse the State Police for the number of hours of patrol actually provided at the troopers' overtime rate, plus FICA fringe benefit additives, patrol car mileage, and meals. In addition to reimbursing these actual costs, VDOT will reimburse the State Police 10% of the net amount of the actual costs to cover administrative costs incurred by the State Police. In the case that the State Police are scheduled to patrol a work zone and the patrol is cancelled but notification is not given in time to prevent the State Police trooper from reporting to the construction site or if the patrol is needed but is needed for less than two hours, the State Police will be reimbursed for a minimum of two hours. To facilitate and document the proper reimbursement, a log, signed by both the State Police trooper and a VDOT representative, will be kept. The obligation of VDOT to compensate for hours of overtime worked pursuant to this agreement shall not be contingent upon receipt of matching or reimbursing funds by VDOT from any other governmental source but shall, subject to all applicable law and regulation, be absolute.

7. VDOT, through its District Administrators, will be the primary contact for the State Police in the implementation of this agreement.

8. VDOT will not enter into similar agreements with political subdivisions embracing work zones on pre-existing interstate routes, without first offering the patrol to the State Police.

9. The terms of this interagency agreement do not confer any rights or benefits upon any persons not a party to this agreement. It is expressly agreed and understood there are no third party beneficiaries to this agreement and that this agreement poses no legal duties on the signatories, their agents or employees, to any specific persons or bodies corporate or police.

COL. W. STEVEN FLAHERTY  
DEPARTMENT OF STATE POLICE



Date: 4/7/05

PHILIP A. SHUCET  
DEPARTMENT OF TRANSPORTATION



Date: 4-5-05

**From Appendix C of the 2005 Virginia Work Area Protection manual:**

**GUIDELINES FOR USE OF VIRGINIA STATE POLICE IN CONSTRUCTION /  
MAINTENANCE WORK ZONES**

The following Guidelines for use of Virginia State Police in construction and maintenance work zones have been developed by the Virginia State Police and VDOT to ensure the maximum effectiveness of law enforcement in work zone operations. These guidelines are not intended to be all-inclusive, as each work zone presents its own unique situations and ever-changing conditions. Situations will occur which dictate deviations from these guidelines as stated and/or are not covered by the guidelines. In those situations, the project inspector and the trooper should confer on the best way to address the traffic safety problems presented.

To ensure the maximum effectiveness of the use of the Virginia State Police in work zones, the following guidelines have been developed for standard lane closure operations:

1. Prior to placing a request for state police on a particular project or work zone operation, the project inspector (or VDOT maintenance personnel) and contractor's superintendent should meet and discuss when and where the trooper will give the best benefit in reducing excessive speeds through the work zone. The following suggestions are offered:
  - A. If traffic is expected to be free flowing through the work zone with little to no back-ups, the trooper should be located in the lane closure 500 - 1000 feet in advance of the first work crew. If a Truck Mounted Attenuator (TMA) is used within the lane closure, the trooper's vehicle should not block the TMA cushion.

- B. If traffic is backing-up within the transition area or within the advance warning area, the trooper should position his vehicle on the shoulder in advance of the back-up to slowed/stopped traffic, which should increase driver attention and prevent potential crashes. This may require repositioning of the vehicle from time to time to stay in advance of the back up.
  - C. Mobile lane closure operations on multilane roadways are one of the most dangerous operations performed. If possible, the use of a trooper, placed on the shoulder 500 to 800 feet in advance of the vehicles performing the lane closure operations, is recommended to increase motorists' awareness and slow approaching traffic. The trooper's vehicle should not block an open lane unless protected by a TMA.
2. After determining when and where the state police are to be used, the project inspector (or VDOT maintenance personnel) should contact the state police and arrange for a meeting on the project to discuss that day's operations and placement of the trooper. VDOT contact information, including name and cell phone or pager number, shall be given to the trooper so that communication may be maintained throughout the shift for that operation. During the course of the day/night, the project inspector, VDOT maintenance supervisor, or his designate shall relay any changes to the placement of the trooper.
  3. VDOT personnel should request that the trooper's vehicle be a marked vehicle and equipped with a radar unit.
  4. Once on the project at the designated location, the state police vehicle should operate with its lights flashing. If equipped with radar, the trooper should operate the radar unit, periodically stopping vehicles exceeding the safe speed established for that work zone. To retain credibility with motorists, the trooper may travel out of the work zone to stop speeding motorists. Otherwise, motorists will believe that the trooper is there for "show" only and not for "enforcement". Due to the activities occurring in the work zone at any given time, the trooper should stop motorists outside of the closed lane or work zone area, then return when possible.
  5. Upon completion of the state trooper's shift, the trooper and the project inspector, maintenance supervisor or his designate should meet to review that shifts operation and to agree upon the time worked and obtain a project charge. If the trooper must leave the site due to an emergency or other related situation, the VDOT contact person shall be notified.
  6. These guidelines are not intended to be all-inclusive. Situations will occur which dictate deviations from the guidelines as stated and/or are not covered by the guidelines. In those situations, the project inspector and the trooper should confer on the best way to address the traffic safety problems presented.

## Attachment D

The following language has been added to IIM 241.4, TE-351.2, Transportation Management Plan Requirements addressing the planning of Work Area Access for designers to follow during the planning and development of traffic control plans.

### ▪ ***Work Area Access Considerations***

The Temporary Traffic Control Plan (TTCP) should address the need for access to the work area. This is a constructability issue in which the designer addresses the question of how the contractor will safely move materials and equipment into the work area with a minimum of disruption to traffic. This is a particularly critical issue on high speed roadways such as Limited Access highways, especially if traffic barrier service concrete (barrier wall) is used to protect work areas. Consideration may be given to the design and construction of temporary acceleration and deceleration lanes for the construction equipment. The following should be considered in the planning, design, and operation of work zones:

- Anticipate types of work zones that typically create ingress/egress problems. Examples are work spaces requiring work vehicles to merge in/out of high-speed traffic and work activities that will generate frequent delivery of materials such as paving projects, bridge projects, and the delivery/movement of fill materials.
- Access into/out of the work space shall be included in the Temporary Traffic Control Plan.
- Adequate acceleration/deceleration space for work vehicles should be provided.
- The location of access openings should meet the sight distance requirements listed in Appendix A of the Virginia Work Area Protection Manual (Stopping Sight Distance table). In extreme conditions, lane closures may need to be considered.
- Construction access openings in traffic barrier service concrete (barrier walls) should be planned per Appendix A of the Virginia Work Area Protection Manual to ensure that blunt ends of barrier walls are properly protected. The barrier channelization devices should be planned in a manner as to not create a sight distance problem for equipment operators or motorists.
- Ingress/egress condition may justify lowering the speed limit during this activity. Any reduction in the posted speed limit must be authorized by the Regional Traffic Engineer and based on an engineering study per Traffic Engineering Memorandum (TE) 350.
- Warning signs (Trucks Entering Highways) are available for ingress/egress conditions at work area accesses and should be used when appropriate. Special warning signs may be necessary. All warning sign(s) noting work zone access activities shall be covered or removed when the daily work activity ceases.
- For nighttime operations, illuminating the construction access may be considered.