

TEMPORARY TRAFFIC CONTROL

Presentation By:
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AGENDA:

- Fundamentals of Temporary Traffic Control
- Roles and responsibilities
- Resources for Successful Project Delivery
- Traffic Control Legal and Documentation
- Traffic Control Set up and good practices
- Traffic Control: The Good, The Bad and The Ugly



Fundamentals of Temporary Traffic Control

WHAT IS TEMPORARY TRAFFIC CONTROL?

WVDOH MUTCD

- The primary function of TTC is to provide for the reasonably safe and effective movement of road users through or around TTC zones while reasonably protecting road users, workers, responders to traffic incidents, and equipment.”

FHWA

- Temporary Traffic Control (TTC), as defined by the FHWA, refers to the management of road user conditions due to work zones, incidents, or special events. The primary function of TTC is to facilitate the safe and efficient movement of road users while protecting them and workers involved in construction or maintenance operations.

WHAT IS A WORK ZONE?



- Section of Highway where traffic flow is altered by the installation of traffic control devices, uniformed officer, or emergency services personnel
- Altered traffic flow due to Maintenance or Construction area
- Incident area involving vehicle crash, fire, spill, etc.
- Traffic control for Planned event

WHY IS PROPER TTC IMPORTANT?



- Achieve smooth Traffic Flow
- Adequately warns and guides motorists through the work area
- Provides safety and mobility for motorists, pedestrians, and bicyclists
- **PROTECTS WORKERS**
- Minimize Crashes
- Maintains good Division/Public Relations

ROLES AND RESPONSIBILITIES

RESPONSIBILITIES OF THE WORKER

- *Know that you are legally responsible to follow the national and state standards for TTC*
- *Know where to find the requirements for proper TTC*
- *Have proper TTC training*
- *Wear high-visibility safety apparel when working within the right of way*
- *Know what TTC devices are needed*
- *Install and remove the devices in accordance with national and state standards*
- *Make sure the devices are adequately maintained*

RESPONSIBILITIES OF THE SUPERVISORS

- Same responsibilities as workers plus the following
- Have adequate training in TTC
- Ensure that an adequate TMP is prepared for each project
- Comply with Permitted Lane Closure MapWork (Attached in the coming slides)
- *Work with Office of Communications to develop Public Information Plan commensurate with the level of the project*
- *Coordinate any changes in the TMP with the traffic engineer*
- *Inspect the work zone during the first week of any new phase of construction or maintenance*
- *Immediately report to the Traffic Engineering Division any fatal incident/crash within the work zone*

RESPONSIBILITIES OF THE SUPERVISOR

Construction Manual

District Engineers/Managers

Ensure the appropriate district staff shall implement the transportation management plan as set forth in this document. The key responsibilities include:

- Designate appropriate staff to review work zone traffic control during first week of each new phase of construction for all significant projects and identify areas of need for improvement
- Designate appropriate staff to monitor locations of projects and recommend change in TMP if needed due to proximity of projects
- Coordinate with other districts when lane closures or projects are affected by other lane closures or projects across district boundaries
- Ensure lane closures for all projects are in compliance with the Permitted Lane Closure Map

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- Coordinate short-term maintenance activities with existing projects of a longer duration
- Designate appropriate staff to participate in work zone fatal crash accident reviews and gather any needed information from the accident in a timely fashion
- Ensure that appropriate staff are trained at the project level, and who has the primary responsibility, with sufficient authority, for implementing the TMP and other safety and mobility aspects of the project.

Work Zone Fatal Crash Review -- A Fatal Crash Review Team may investigate all fatal traffic crashes that are work zone related. The team will be comprised of the following personnel: District Construction (or Maintenance) Engineer (or representative), Project (or Maintenance) Supervisor, Claims Investigator, District Safety Officer, District Traffic Engineer/Technician, and Traffic Engineering Division Representative. The team's responsibilities include to conduct a review of work zone, field documentation, any modifications made to the Traffic Control Plan, the crash report (if available), and develop any recommendations as appropriate.

**CHECK WITH
YOUR TRAFFIC
ENGINEER!!!!!!**

Road Inventory Log Info for Point: 0630010000000 at 1.410

- AADT: 3000
- AADT_YEAR: 2024
- ACCESS_CONTROL: 1 - No Control
- CENSUS_URBAN_CODE: 99999
- DES_TRUCK_ROUTE: 4 - No restriction on use by trucks or commercial vehicles.
- DISTRICT: 02-District 2
- FACILITY: 2 - Two-Way Roadway
- FAS_TYPE: 3 - STP (Surface Transportation Program Eligible)
- GRADE_WIDTH_FT: 24
- HPMS_MEDIAN_BARRIER_TYPE: 1 - None
- MEDIAN_WIDTH_FT: 0
- NAT_FUNCTIONAL_CLASS: 6 - Minor Arterial - Rural
- NHS: 0 - Not NHS
- NUM_THROUGH_LANES: 2
- OWNERSHIP: 1 - State Highway Agency
- PAVEMENT_WIDTH_FT: 24
- REVERSE_LANE: 1 - No Reversible Lanes
- RURAL_MUNI: 0 - Not within an incorporated Municipality
- RURAL_URBAN: 0 - Rural
- SPECIAL_SYSTEM: 01 - Not on a special system
- STATE_FUNCTIONAL_CLASS: 2 - Trunkline
- STREET_NAME_ID: 2727
- SURFACE_TYPE: 2.1 - Asphaltic Concrete (virgin)
- URBAN_CODE: 99999 - Rural
- YEAR_LAST_IMPROV: 1976

II. MAINTENANCE OF TRAFFIC

1. SUBMISSION AND GUIDELINES

THE CONTRACTOR SHALL SUBMIT MAINTENANCE OF TRAFFIC PLANS DEVELOPED BY AN ENGINEER REGISTERED TO PRACTICE IN THE STATE OF WEST VIRGINIA, FOR REVIEW AND APPROVAL BY THE PROJECT ENGINEER PRIOR TO THE SETTING UP OF TRAFFIC CONTROL. THIS APPLIES TO MINOR BRIDGES, CROSSING LOW VOLUME ROADS, MINOR STREAMS, RAILROADS, ETC.

MAINTENANCE OF TRAFFIC PLANS SHALL COMPLY WITH THE REQUIREMENTS OF THE *WVDOH MANUAL ON TEMPORARY TRAFFIC CONTROL FOR STREETS AND HIGHWAYS, 2006 OR LATEST EDITION.*

ALL STANDARD DETAILS RELEVANT TO SIGNING, SIGNALS, LIGHTING, MARKINGS, AND ITS

RESPONSIBILITIES OF THE CONTRACTOR

- *Designating a certified trained person at the project level who has the primary responsibility, with sufficient authority, for implementing the TMP and other safety and mobility aspects of the project*
- *Ensure that all contractor personnel are trained in traffic control to a level consistent with each of their responsibilities*
- *Advising the Project Engineer, as required, at least two working days before any work requiring a lane closure begins*
- *Working with the Project Engineer to ensure all lane closures are minimized*
- *Ensuring work zones are neat, orderly and effective for the safety of highway workers and motorists*
- *Minimizing delay and disruption experienced during construction*
- *Performing quality control of work zones to promote consistency and ensure compliance with contract documents, policies, and guidelines*
- *Recommend traffic control improvements to the Project Engineer to address field conditions pertaining to traffic flow, visibility, and worker and motorist safety.*

RESPONSIBILITIES OF THE CONTRACTOR

Construction Manual

636.1.4-Traffic Control Supervisor In accordance with Section 636 of the Specifications, the Contractor is responsible for providing a Traffic Control Supervisor. Traffic Control Supervisor is a person who will monitor the method and devices used for traffic control during the project. The Traffic Control Supervisor will be thoroughly familiar with the WVDOH Manual on Temporary Traffic Control for Streets and Highways. If noted on the plans, this person will have passed an American Traffic Safety Service Association (ATSSA) training course on this subject or demonstrate equal qualifications, for approval by Project Supervisor. After traffic control devices are installed for the active method of handling traffic, the Traffic Control Supervisor will inspect the devices frequently to ensure that they are located and maintained properly and are conveying the proper message for the intended application. The Traffic Control Supervisor will have the authority to take all actions necessary for the safe control of traffic through the work zone. The Contractor is responsible for providing the Project Engineer/Supervisor with the telephone number of the Traffic Control Supervisor, and approved designee, for use in the event of emergencies or crashes at night or on weekends. The Traffic Control Supervisor is responsible for the following:

1. **Communication Responsibilities.** The Traffic Control Supervisor will manage traffic control on a 24-hour-per-day basis. The required minimum level of communications include:
 - a. **Prime Contractor.** The Traffic Control Supervisor will communicate with the Prime Contractor to determine what traffic control measures need to be provided by subcontractors and material suppliers.
 - b. **Local Agencies.** The Traffic Control Supervisor will inform local police and fire agencies of any lane closures or delays. Regular updates are required as operations change.
2. **Emergency Contact Numbers.** The Traffic Control Supervisor will provide emergency contact numbers of Contractor and WVDOH personnel to local police and fire agencies. This allows the proper project personnel to be notified in case of an emergency on the project during working or non-working hours.
 - a. **Response Time.** During non-working hours, the Traffic Control Supervisor, or approved designee, will respond to the site as soon as practical, desirably within 1 hour of notification.

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

DESIGN DIRECTIVES 681 WORK ZONE SAFETY AND MOBILITY

January 3, 2024
Supersedes June 13, 2014

The West Virginia Division of Highways (WVDOH) is committed to providing a safe and efficient work zone environment. It is the Division's goal to minimize traffic delays to the traveling public, reduce work zone crashes and fatalities, and to promote a safe work place by improving mobility of the motorist and providing the utmost protection of the construction work force.

Compliance with this policy will benefit the traveling public, construction industry, and the business community by reducing work zone accidents, construction, and travel time.

The attached policy outlines procedures to be followed during all phases of development and construction or maintenance. It also assigns responsibilities for implementation to fulfill its requirements.

The requirements of this policy apply to all highway projects, regardless of the funding source.

Background

The Federal Highway Administration (FHWA) published the Final Rule on Work Zone Safety and Mobility, 23 CFR 630 Subpart J in September 2004. This rule, referred to as Work Zone Safety and Mobility, applies to State and local governments that receive Federal-aid highway funding. All transportation agencies are required to comply with the provisions of the Rule. This rule updates and broadens the former regulation, "Traffic in Highway and Street Work Zones," to address present and future work zone issues.

The final rule requires agencies to:

- Implement a policy that facilitates systematic consideration of work zone safety and mobility on all Federal-aid highway projects. Implementing the policy for non-Federal-

Coordinate short-term maintenance activities with existing projects of a longer duration

Designate appropriate staff to participate in work zone fatal crash accident reviews and gather any needed information from the accident in a timely fashion

Ensure that appropriate staff are trained at the project level, and who has the primary responsibility, with sufficient authority, for implementing the TMP and her safety and mobility aspects of the project.

- Responsibilities of the contractor include:

Designating a certified trained person at the project level who has the primary responsibility, with sufficient authority, for implementing the TMP and other safety and mobility aspects of the project

Ensure that all contractor personnel are trained in traffic control to a level consistent with each of their responsibilities

Advise the Project Engineer, as required, at least two working days before any work requiring a lane closure begins

Working with the Project Engineer to ensure all lane closures are minimized ensuring work zones are neat, orderly and effective for the safety of highway workers and motorists

Minimizing delay and disruption experienced during construction

- Performing quality control of work zones to promote consistency and ensure compliance with contract documents, policies, and guidelines
- Recommend traffic control improvements to the Project Engineer to address field conditions pertaining to traffic flow, visibility, and worker and motorist safety.

Work Zone Fatal Crash Review -- A Fatal Crash Review Team may investigate all fatal traffic crashes that are work zone related. The team will be comprised of the following personnel: District Construction (or Maintenance) Engineer (or representative), Project (or Maintenance) Supervisor, Claims Investigator, District Safety Officer, District Traffic Engineer/Technician, and Traffic Engineering Division Representative. The team's responsibilities include to conduct a review of work zone, field documentation, any modifications made to the Traffic Control Plan, the crash report (if available), and develop any recommendations as appropriate.

Work Zone Review Team – The Work Zone Review Team will consist of representatives from Central Office, District, FHWA, and may consist of stakeholders. Responsibilities of the review team:

- Conduct annual reviews of work zone planning, design, implementation, management, and operation in multiple districts to ensure compliance with this policy
- Identify and document strengths and weaknesses observed during the review
- Communicate findings and recommendations to WVDOH management and personnel

MAIN CAUSES OF WORK ZONE ACCIDENTS

- Unexpected or confusing zones
- Obstructions – sight distance
- Diverted attention – Cell phone use
- Speeding
- Workers exposed to live traffic
- Equipment not properly protected
- Insufficient Traffic Control
- Traffic flow affected longer than necessary

TRAFFIC CONTROL RESOURCES

DESIGN DIRECTIVES

[HTTPS://TRANSPORTATION.WV.GOV/HIGHWAYS/TECHNICALSUPPORT/PAGES/DESIGN-DIRECTIVES.ASPX](https://TRANSPORTATION.WV.GOV/HIGHWAYS/TECHNICALSUPPORT/PAGES/DESIGN-DIRECTIVES.ASPX)

Design Directive 681

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DESIGN DIRECTIVE

681
WORK ZONE SAFETY AND MOBILITY
December 4, 2008

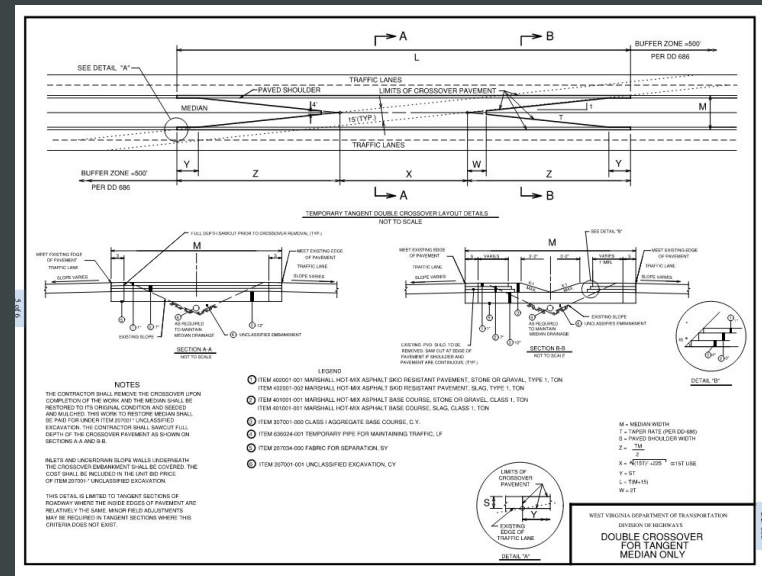
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Attachment

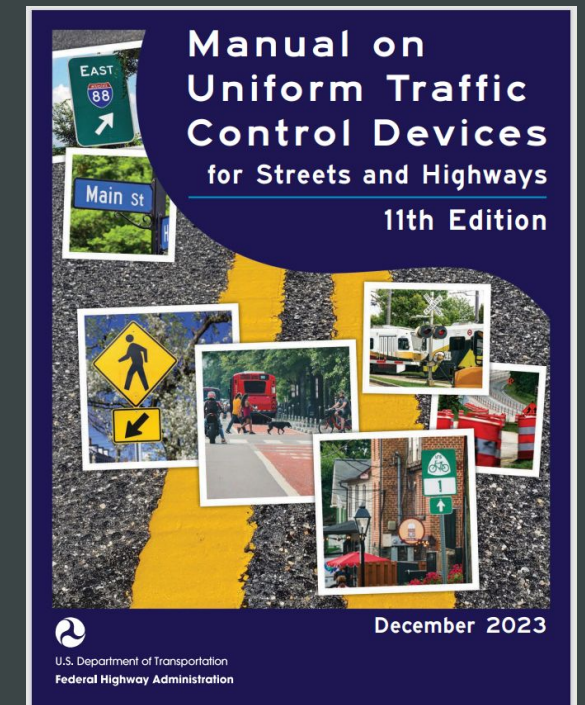
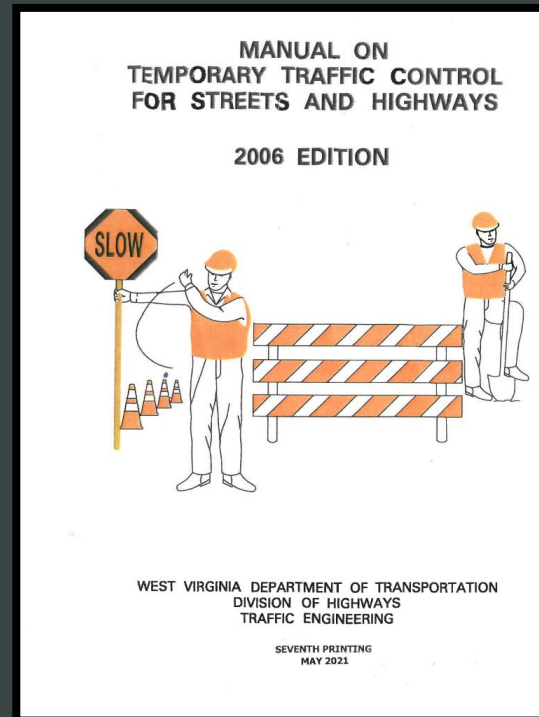


- Level 1 Projects – low complexity construction, maintenance, or utility work
- Level 2 Projects – moderate level of construction activity with traffic impact limited to the roadway containing the work zone
- Level 3 Projects – significant project involving complex TTC affecting wide area beyond actual work zone

MANUAL ON TEMPORARY TRAFFIC CONTROL (MUTCD)

Key Takeaways

- Detailed Case studies for different Traffic Control set-ups.
- Flagger section detailing and training what to look for and proper equipment.
- Detailed sign sizing and spacing
- WEBSITE:
<https://transportation.wv.gov/highways/traffic/Documents/TemporaryTrafficControlManual2006.pdf>



CONSTRUCTION MANUAL 2022

SECTION 636 MAINTAINING TRAFFIC

636.1-GENERAL REQUIREMENTS

636.1.1-Description of Work Section 636 of the Specifications governs the material and construction requirements for maintaining and protecting traffic during construction, protecting construction personnel and the work in progress, and protecting adjacent property from excessive dust. When Item 636 is specified in the Contract, the Project Inspector is responsible for verifying that the Contractor performs the work in accordance with Section 636 of the Specifications and as designated on the Contract Plans. See the Specifications for the method of measurement for payment.

636.1.2-Materials Considerations Inspect all materials upon arrival. Verify that all traffic control devices, flaggers, pilot trucks, signs, temporary pavement marking materials, materials for temporary structures, aggregate for temporary roads, and dust palliatives conform to the requirements of the Specifications. Ensure that materials are supplied from pre-approved DOH sources, and document laboratory numbers from the shipping document on the Daily Work Report.

A notarized Letter of Certification from the Contractor for all traffic control items is required.

636.1.3-Traffic Control Plan

636.1.3.1-Content and Purpose The Division expects the Contractor to implement the Traffic Control Plan that is specified in the Contract. The Traffic Control Plan will address the following:

1. Safety and convenience of the traveling public;
2. Protection of construction personnel and the work in progress;
3. Methods of handling traffic for all phases of construction;
4. Temporary structures, temporary roads, and application of dust palliatives;
5. Contractor and subcontractor activities; and
6. Schedules, deliveries, and project time restrictions.

The method of handling traffic required for each construction phase will depend on the type of construction to be performed.

West Virginia Department
of
Transportation

Division of Highways



2022

Construction Manual

636.3-RECORDS AND DAILY WORK REPORTS

The Project Inspector is responsible for recording in the Daily Work Report all information (e.g., laboratory numbers, observations, measurements, directives to the Contractor) necessary to accurately document the prosecution and progress of the work, justify payment to the Contractor, and protect the Division from any future claims. See Section 111 for additional information. The Inspector's Daily Report must include all routine and non-routine events that occur daily each production day and reflect an unquestionable basis for acceptance or rejection. Use the Division's Form 442 – Inspector's Daily Report and Inspector's Traffic Control Worksheet for documentation purposes. If in doubt as to whether information is important or beneficial, record it.

PERMITTED LANE CLOSURE MAP

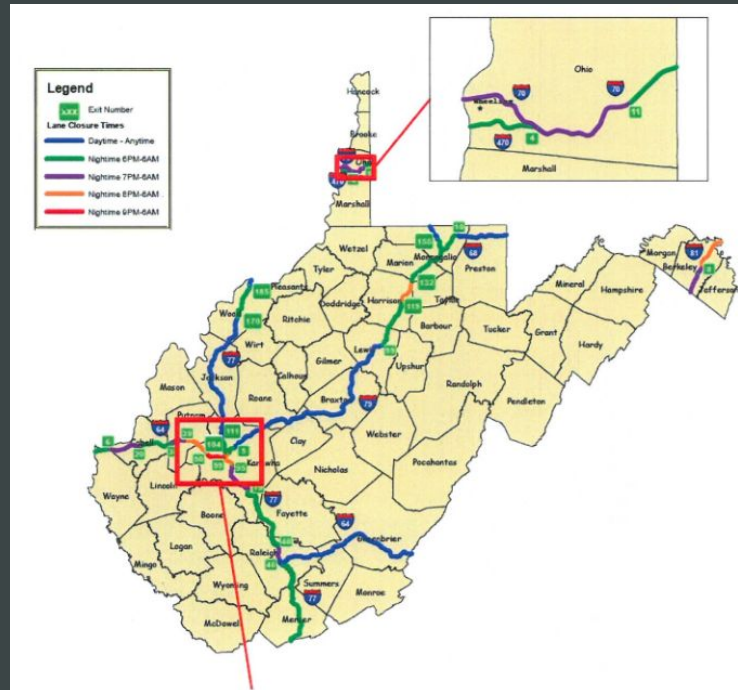
[HTTP://WWW.TRANSPORTATION.WV.GOV/HIGHWAYS/TRAFFIC/DOCUMENTS/PERMITTED- LANE-CLOSURE.PDF](http://www.transportation.wv.gov/highways/traffic/documents/permitted-lane-closure.pdf)

Legend

xxx Exit Number

Lane Closure Times

- Daytime - Anytime
- Nighttime 6PM-6AM
- Nighttime 7PM-6AM
- Nighttime 8PM-6AM
- Nighttime 9PM-6AM



TRAFFIC CONTROL LEGAL and DOCUMENTATION

DOCUMENTATION 101

- If you don't put it in writing.....
- It didn't happen
- Most DWR readers will not be Engineers or traffic experts...
- **What is negligence?**
- *“Conduct that falls below the standards of behavior established by law for the protection of others against unreasonable risk or harm.”*
- **Gross negligence?**
- *“A conscious and voluntary disregard...”*

DOCUMENTATION FREQUENCY

DWR Item

- Traffic Control Devices
- B lights
- Arrow/Message Boards
- Speed Trailer
- Shadow Vehicle

My Opinion...

- Daily items should be documented daily. Traffic control devices should be noted daily.
- Pay can be delayed, but a comment should be there to document you checked it and it was working, or if it was deficient, who you alerted it to for correction.
- Non-working days – Start and end of breaks.

EXAMPLES OF NARRATIVES

Bad 😞

- Contractor placed arrow board
- Cones or devices = 40
- Pay 32 B lights
- Installed message boards

Good 😊

- Contractor placed 1 arrow board to close slow lane of I64 Westbound at mile marker 20 to 21.
- Contractor placed XX amount of grabber cones and 6 temporary signs on I64 Westbound slow lane using case E4 at mile marker 20 to 21.
- B lights were checked at 8am and found 32 of 40 B lights were working. 4 B lights were out NB advanced warning signs and 4 SB. Bill Contractor foreman notified.
- Subcontractor placed 2 message boards 1 mile before project limits to alert motorist of “road work ahead” and “new traffic pattern” were displayed.

WHAT IF YOU FIND A DEFICIENCY?

- Immediately notify project supervisor
- Notify contractor (person with power to correct)
- Document when you find the deficiency and who you reported it to (names are a must)

TRAFFIC CONTROL SET UP AND GOOD PRACTICES

MOT SETUP

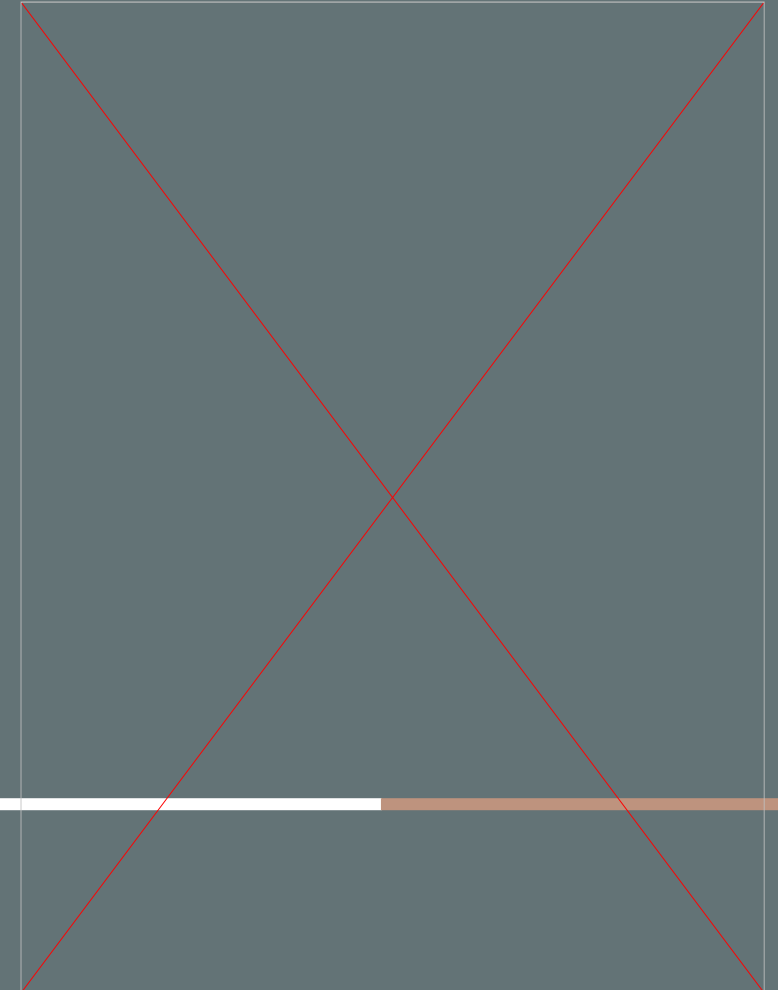
- Always follow the plans traffic control scheme or the case referenced in the Traffic Control Manual
- When not to follow...
 - Signage blocked by obstruction (field adjustments)
 - Something seems off (stop and ask for help)
- Never change the MOT plan. (YOU ARE NOT THE EOR)



TRAFFIC CONTROL

THE GOOD, THE BAD AND THE UGLY

IMPROPER SIGNAGE





FLAGGER'S

Guidance:

Flagger stations should be located such that an errant vehicle has additional space to stop without entering the work space.

Standard:

Except in emergency situations, flagger stations shall be preceded by an advance warning sign or signs. Except in emergency situations, flagger stations shall be illuminated at night.

Guidance:

The flagger should stand either on the shoulder adjacent to the road user being controlled or in the closed lane prior to stopping road users. A flagger should only stand in the lane being used by moving road users after road users have stopped. The flagger should be clearly visible to the first approaching road user at all times. The flagger also should be visible to other road users. The flagger should be stationed sufficiently in advance of the workers to warn them (for example, with audible warning devices such as horns, and whistles) of approaching danger by out-of-control vehicles. The flagger should stand alone, never permitting a group of workers to congregate around the flagger station.

Option:

shall be all
paddle, their

If more than eight flashing lights are used, the lights shall be arranged such that they clearly convey the octagonal shape of the STOP face of the paddle and/or the diamond shape of the SLOW face of the paddle.

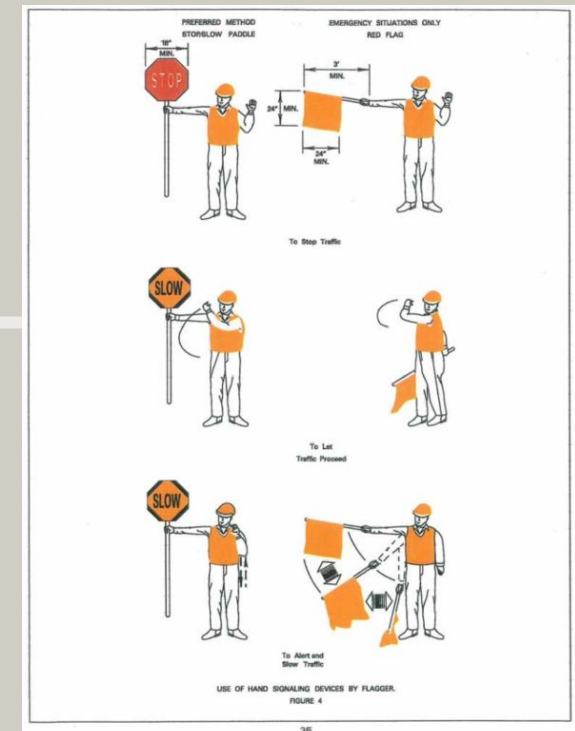
If flashing lights are used on the STOP/SLOW paddle, the flash rate shall be at least 50, but not more than 60, flashes per minute.

Flags, when used, shall be a minimum of 24 in. square, made of a good grade red material and securely fastened to a staff that is approximately 36 in. in length.

Guidance:

The free edge of a flag should be weighted so the flag will hang vertically, even in heavy winds.

MUTCD: FLAGGER





ADVANCED WARNING





THE GOOD

TRAINING RECOMMENDATIONS

FHWA MAINTENANCE OF TRAFFIC FOR TECHNICIANS

The screenshot displays a web browser window with the URL <https://ffwanhi.geniussis.com/PublicWelcome.aspx>. The page features the logos for the U.S. Department of Transportation Federal Highway Administration and the National Highway Institute (nhi). A search bar contains the number 133116, with a 'Find Course' button and a 'Proceed to Checkout' button. Below the search bar, a course card is displayed with the following details:

- 133116**
- Maintenance of Traffic for Technicians**
- Ongoing**
- Maintenance of Traffic for Technicians
- [View Offerings](#)

The course card includes an icon of two traffic lights, one with a red light and one with a green light, and a 'WBT' (Web-Based Training) badge. At the bottom of the page, contact information is provided: nhicustomerservice@dot.gov and **Call Us At: 1-877-558-6873**.

FHWA MAINTENANCE OF TRAFFIC FOR TECHNICIANS

The screenshot shows a web browser window with the URL <https://fhwanhi.geniussis.com/RegistrationByCourse.aspx>. The page header includes the U.S. Department of Transportation Federal Highway Administration logo and the National Highway Institute logo. A search bar in the top right contains the course number "133116" and a "Find Course" button. Below the search bar, a course card for "133116 Maintenance of Traffic for Technicians" is displayed, featuring a traffic light icon and a "View Offerings" button. A red box highlights the search bar and the "Find Course" button, with a red line pointing to a larger red box containing the text "SEARCH COURSE - 133116".

U.S. Department of Transportation
Federal Highway Administration

nhi national highway institute

133116
Maintenance of Traffic for Technicians
| Ongoing
Maintenance of Traffic for Technicians
[View Offerings](#)

133116 Find Course
Advanced Filters

Proceed to Checkout

SEARCH COURSE - 133116

QUESTIONS?



THANK YOU

Presented By:

Ryan Canfield, P.E.

David Ferrell, P.E.
