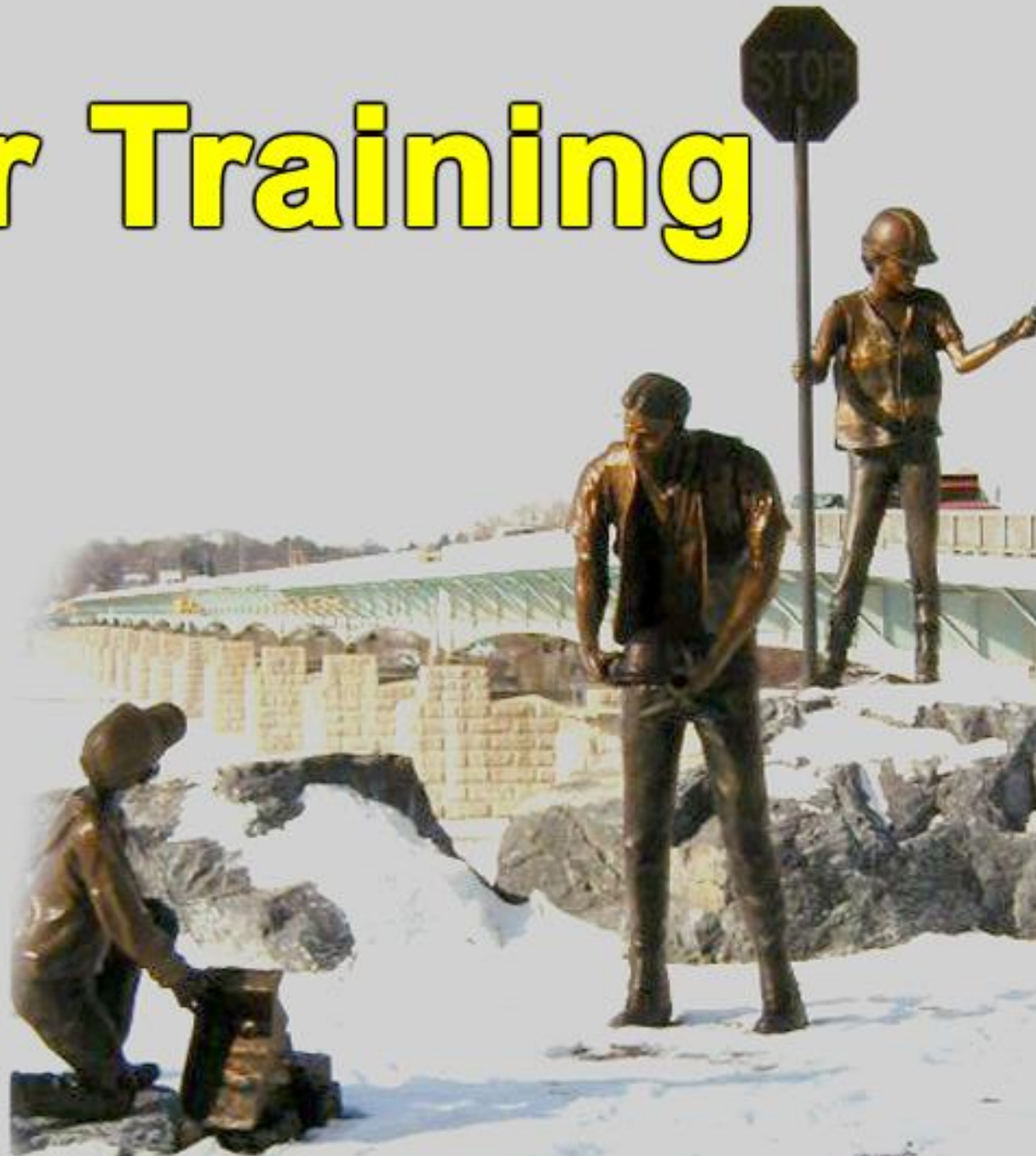


Flagger Training



Effective January 1, 2006

Why Training?

PennDOT requires all flaggers to be trained according to their specifications.

Flaggers have an important job. It look's simple and easy, but it's very difficult.



PennDOT Flagger Training Requirements

- When: Starting with projects let after January 1, 2003
- Compliance: Contractor must provide flaggers that have successfully completed a flagger training course within the last three years that complies with the department's *Flagger Training Guidelines*
- Verification: Wallet-sized card
- Upon successful completion of the course you will be a trained flagger, not a certified flagger!

Verification

- Wallet-sized card containing
 - Name of flagger
 - Training source
 - Date of successful completion of training
 - Signature of the trainer
- or contractor may provide a roster of trained flaggers to the engineer prior to start of flagging
- PennDot inspectors may ask to see this card on the job before allowing you to work on that job
- Tape to the inside of your hardhat

Main objective of this course

- To learn how to be a safe and effective flagger.
- To measure the success of this program, there are several things you should understand and be able to do when you are finished.

Course Objectives

- Describe why flagging is important
- List the qualifications of a good flagger
- Proper flagger conduct
- Gather all the necessary & proper flagging equipment and gear
- Select the proper flagging station/location/position
- Stop, slow & release traffic using a paddle and red flag
- Public Relations-How to deal with drivers

Course Objectives

- Setup and handle one-lane traffic on a two-way road, using 2 flaggers
- Single flagger operation
- Nighttime flagging and emergency vehicles
- Communication with public, supervisor, and co-workers
 - Communication is key to a safe work zone!

Why are you here?

- Controlling traffic in a work zone is dangerous
 - Dangerous to self
 - Dangerous to work crew
 - Dangerous to traveling public
- Flagger training is important
- Training contributes to safety
- Your job is to provide a safe work zone for the workers and the traveling public.

Work Zone Injuries & Fatalities

- From 2001 – 2004 there were 66 incidents of motorists intruding into PennDOT Maintenance work zones
- 53% of these caused injuries to PennDOT employees
- Work zone intrusions happen because of driver errors such as inattention, reckless driving, aggressive driving, and DUI
- Consider some recent cases:

Aggressive Driver

- A motorist in Luzerne County was cited for reckless driving after approaching a work zone at excessive speed.
- After being stopped by a flagger, he was approached by a PennDOT foreman.
- He put the car in motion, swerving toward the foreman while making an obscene gesture, then accelerated through the work zone.

DUI Driver

- At 3:30am in Lackawanna County, a DUI driver tried to pass slow-moving traffic near a work zone by swerving onto the shoulder.
- He side-swiped a tractor-trailer and a car before entering the work zone where 10 PennDOT and contractor employees were working.
- He was stopped by two Pennsylvania State Troopers, who used their vehicles to close off both ends of the work zone to prevent escape.
- He was charged with numerous violations.

- Flaggers will encounter various types of drivers:
 - Aggressive
 - DUI
 - Impaired
 - Reckless
 - Inattentive
- Unfortunately, work zone intrusions sometimes cause fatalities.
- A flagger plays a key role in making work zones safe for employees, contractors, and motorists.



THIS SITE IS DEDICATED
TO THE MEMORY OF
JEFF TESKE
WHO DIED IN THE LINE OF DUTY
OCT 20, 1997

DEDICATED
IN MEMORY OF
RALPH M. CORNELL
FOR 15 YEARS OF SERVICE
TO
THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION

✠
IN MEMORY OF RICH BRADLEY
KILLED IN THE LINE OF DUTY
MAY 14, 2001
SADLY MISSED
THE BOYS FROM PENN D.O.T.



SAFETY MEMORIAL
IN MEMORY OF
STEVEN L. FULLMER
THOMAS W. SAWYER



IN MEMORY OF
LEAH MILLER RUMSEY
JAN. 26, 1954
SEPT. 30, 1996
FATALLY INJURED
WHILE PROVIDING
SAFETY ON BRIDGE
IN TROY TOWNSHIP



New Regulations and Guidance

- Flagging and traffic control associated with work zones are governed by law in Pennsylvania
- The following are references:
- Title 67, Chapter 212 (official traffic control devices)
- Manual on Uniform Traffic Control Devices, (MUTCD) Part 6
- PennDOT Publication 213

Flagger Training Outline

- Part 1 - Flagger Basics
- Part 2 - Flagger Equipment and Attire
- Part 3 - Flagger Stations and Positioning
- Part 4 - Flagging Procedures
- Part 5 - Work Zone Components
- Part 6 - Review and Discussion

FLAGGER BASICS

- Purposes of Flagging
- Flagger Qualifications and Abilities
- Flagger Conduct

Primary Function of Flagging

- The primary function of flagging is to provide safety for:
 - Work crew
 - Motorists
 - Bicyclists
 - Pedestrians

traveling through construction zones

The decisions you make and the actions you take will effect a lot of lives, including your own.

Flagger's Duties

- Flaggers are placed at work zones to:
 - Safely stop traffic as needed
 - Maintain safe and continuous traffic flow
 - ◆ Reduce speeds
 - ◆ Protect work crews
 - Provide positive guidance and direction to the traveling public
- First & Last:
 - A flagger must be in position *before* the crew starts working
 - A flagger must be in position *until* the crew stops working and exits the work zone

Why a good flagger is important

- Flaggers are responsible for:
 - Public safety
 - First and only contact with traveling public
- A good flagger must be trained in safe traffic control practices and public contact techniques.

Flagger Qualifications

- Sense of responsibility for public and worker safety
- Adequate training in safe temporary traffic control practices
- Good physical condition, including sight, mobility, and hearing
- Mental alertness and the ability to react in an emergency
- Courteous but firm manner
- Excellent communicator
- Neat appearance

Flagger Abilities

- Communicate instructions clearly, firmly, and courteously
- Ability to describe the make and model of vehicles and communicate this to other flaggers clearly.
- Move and maneuver quickly to avoid danger from errant vehicles
- Control signaling devices to provide positive guidance
- Apply safe traffic control practices in sometimes stressful or emergency situations
- Recognize dangerous traffic situations in time to warn workers

Flagger Well-Being

- Work Zone Foreman is responsible for flaggers
- Flaggers are the first line of defense for the Work Zone Crew
- Flaggers must be physically and mentally alert
 - Arrive at work well rested
 - Not under the influence of drugs or alcohol
 - Not hung-over-Must stop drinking 8-10 hours prior to the start of work.

Flagger Conduct

- Be courteous and professional
 - Public
 - Co-workers
- Be clearly visible
- Be attentive
 - Stay focused on your job
 - Pay attention at all times to traffic and equipment
- Be familiar with the nature of the work being performed
- Remember - *Safety First!*

Methods of Dealing with Hostile Drivers

- Walk away; do not argue; be courteous but firm
- Record a description of the car, driver, license plate
- Notify the supervisor on the job-If necessary
- Warn fellow workers

Be Courteous and Professional

- **Use** authoritative and clear hand directions
- **Never use** crude, suggestive, or inappropriate language or hand gestures
- **Never use** personal entertainment devices such as:
 - ◆ Cell phones (voice or text messages)
 - ◆ AM/FM Radios
 - ◆ MP3 Players (iPod, etc.)
 - ◆ CD player

Be Clearly Visible

- Position yourself for the greatest color contrast between you and your surroundings
- Never flag from beside or inside a vehicle
 - **Your vehicle should not be parked next to you, no escape route!**
- Do not lean or sit on any vehicles or guide rails
- Do not permit a group of workers to congregate around you
- Be visible to approaching motorists at the distance specified in Publication 213

Flagger Visibility

From
MUTCD and
PennDOT
Publication
213

Speed* (mph)	Distance (ft)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820

Be Attentive

- Be ready to respond to emergencies or errant vehicles
- Establish a warning signal with the work crew
- Plan an escape route

Be Familiar with the Work

- Recognize when Work Zone Traffic Control may not be working and what to do about it
- Cover, turn, fold or remove the “FLAGGER AHEAD” sign when flagger not in position
- Do not watch work in progress or try to do any work other than flagging
- Do not step into or turn your back on traffic
- Flagger must be 1st person in position
 - Last person to leave when work is completed
- Never leave your position until replaced by another flagger

PART 2

FLAGGER EQUIPMENT AND ATTIRE

- STOP/SLOW Paddle



- Red Flag



- Supplemental Equipment



- ◆ Red-Light Wand
- ◆ Flares
- ◆ Equipment for Communicating

STOP/SLOW Paddle



- Used to control one-lane, two-way traffic.
- Shall comply with Federal and State standards of Traffic Control Devices.
- Retroflective for night work.

STOP/SLOW Paddle



- Octagonal in shape
- 18-inch minimum size STOP sign on one side
- Diamond-shaped SLOW sign on opposite side
- Both sides retro-reflective
- 72-inch staff (minimum)

STOP/SLOW Paddle



Red Flag



- Use at an intersection with a single flagger
- Control traffic in *emergencies* when a STOP/SLOW Paddle is not available



Red Flag

- Shall be minimum size of 24 inches by 24 inches
- Made of *red* material that is visible and durable.
 - ◆ Orange flag is not acceptable
 - ◆ Retro-reflective for night use
- Fastened to a 3-foot staff
- Made of stiff material or weighted at one end to ensure the flag hangs vertically

Red Flag



Supplemental Equipment



- During hours of darkness, illumination of flagger stations is ***required***
 - *Except* in emergencies
- During emergency situations
 - When not illuminated during hours of darkness, a flashlight with a red wand or one or more flares *shall* be used to supplement the retro-reflective STOP/SLOW Paddle (*only* in emergencies)

Red-light Wand & Flares



- Used for operations during hours of darkness
- Only used as a *supplement* to retro-reflective STOP/SLOW Paddle



Remember...

Flaggers use their
free hand to direct traffic

Equipment for Communicating

- Hand-held or portable radios – NEVER a vehicle radio (**your vehicle should not be parked next to you when flagging.**)
- Passing flags or batons-Only if you lose radio communications
- Prearranged hand signals that will not confuse the traveling public (such as tipping the hard hat)

Dressing for Safety

- Hard hat-No stickers of any kind permitted.
- Vest – ANSI 107-1999 Class 2
- Leggings / Chaps
- Proper footwear
- High visibility yellow rain gear
- During hours of darkness
 - *All* garments shall be retro-reflective
 - Should be Class 3



FLAGGER STATIONS AND POSITIONING

What is a Flagger Station?

- Carefully organized safety zone designed to ensure protection for:
 - ◆ Flagger
 - ◆ Others in the work crew
 - ◆ Traveling public

What determines location of Flagger Station?

- Location of work zone
- Visibility
- Guiderail or other obstacles blocking flagger escape route

Work Space Location

- Flagger station is located in advance of work space to allow traffic safe reaction time
- Far enough ahead of the work space so that approaching traffic has enough room to stop before entering the work space (even if they do enter the buffer space)
 - At least 100 feet in moving pattern,
200 feet in stationary pattern

Visibility

- Flagger station should be visible to motorists a distance specified in Publication 213
- Never allow a group of workers to congregate around flagger station
- Never have your vehicle parked next to you
- Choose position to provide greatest color contrast

Factors that Affect Your Visibility

- Hills
- Curves
- Obstructions
- Shade
- Color contrast
- Bad weather
- Darkness
- Signs
- Other workers
- Sun glare
- Your Vehicle-It should never be parked next to you.

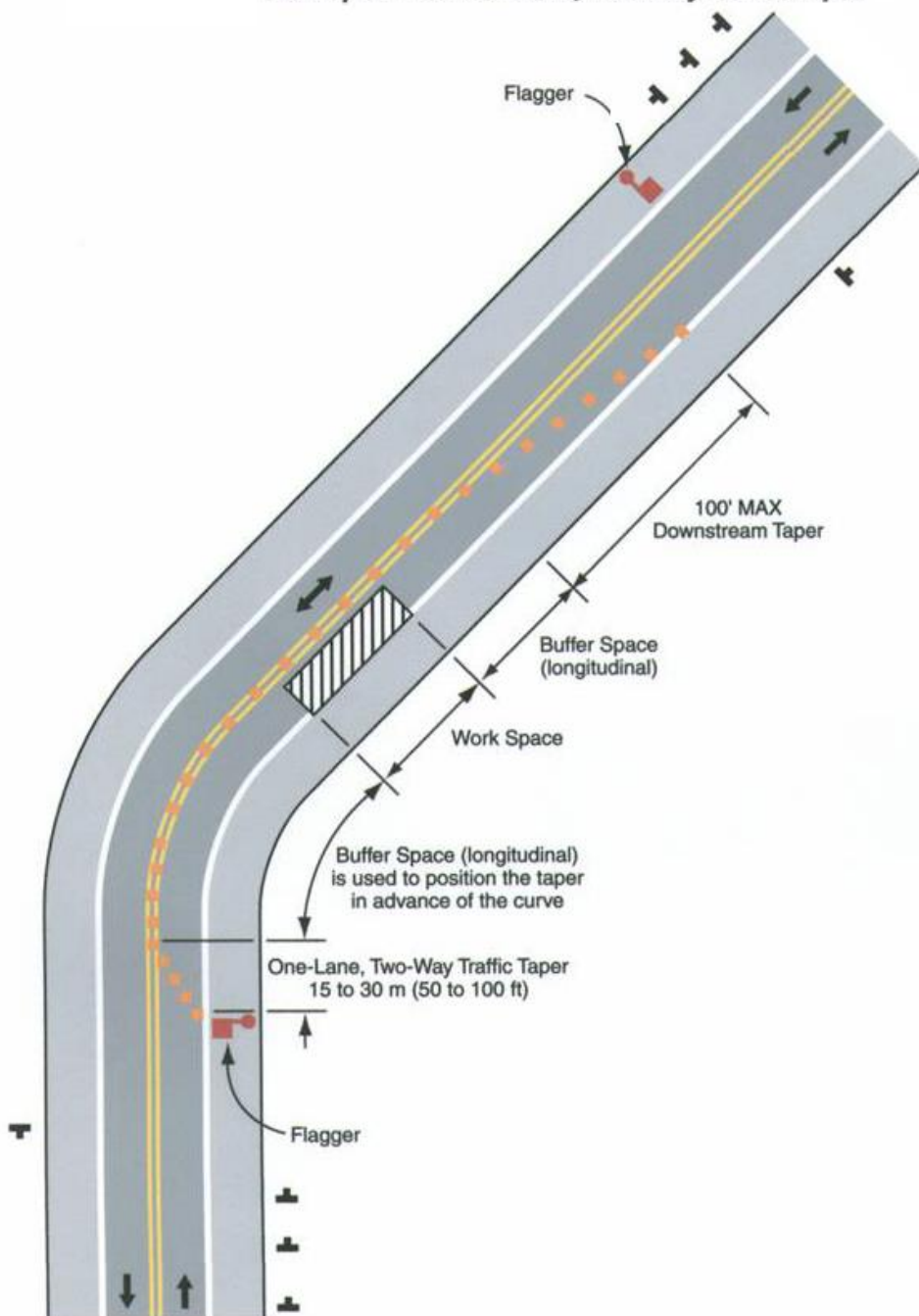
Never block flagger's escape route!

Be aware of:

- Guiderail
- Trees and other vegetation
- Equipment
- Vehicles
- Signs
- Cones
- Personal items-Keep you station clutter free.

Flagger Stations & Positioning:

Example of a One-Lane, Two-Way Traffic Taper



Proper Positioning of Flagger

- Stand (never sit) on shoulder of the road or in barricaded lane
- Face oncoming traffic
- Stand adjacent to the traffic you are to control
- NEVER stand in the center of the road
 - Most flagger injuries occur because of poor positioning

Proper Positioning of Flagger



FLAGGING PROCEDURES

- STOP/SLOW Paddle
- Red Flag
- Red Light Wand
- Night time Flagging

To Stop Traffic – Using Paddle

- Stand on shoulder, face traffic
- Hold STOP side of paddle in stationary position
- Extend arm horizontally from body
- Raise palm of free hand toward approaching traffic
- If visibility can be increased by moving to the middle of the road, the flagger may proceed toward middle of road **AFTER** traffic has stopped – keep palm extended



To Slow Traffic – Using Paddle

- Stand on shoulder, facing traffic
- Display SLOW sign on paddle
- Raise and lower free hand



To Release Traffic – Using Paddle

- Return to standing position at shoulder, showing STOP sign
- Face traffic, turn paddle to SLOW
- Gesture with free hand in direction of travel



To Stop Traffic – Using Flag

- Face traffic from shoulder position
- Extend flag horizontally across traffic lane
- Be sure full area of flag is visible
- Use free arm with palm facing approaching traffic



To Slow Traffic – Using Flag

- Face traffic from shoulder
- Slowly wave flag in sweeping motion
- Motion is up and down slowly



To Release Traffic – Using Flag

- Stand parallel to flow of traffic
- Flag and arm lowered from view
- Motion traffic ahead with free arm
- DO NOT wave the Red Flag!
- Red flag should be behind you when releasing traffic



Remember...

Flaggers use their
free hand to direct traffic
for both
STOP/SLOW Paddle
and **Red Flag methods**

The Red-Light Wand

- Used as supplement to STOP/SLOW paddle or red flag
 - ◆ Primarily at night
- To stop traffic, wave wand back and forth across path of traffic
- Lower the light to signal traffic to proceed
- Never shine the light into eyes of drivers

Special Flagging Situations

- Intersections
- Emergency Vehicles
- Single Flagger Operations
- Night time Flagging

Intersections

- Do not use STOP/SLOW paddle when flagging in an intersection
 - ◆ The STOP/SLOW paddle may cause confusion for the motorists
 - ◆ 24 x 24 Red flags only

Emergency Vehicles

- Should be given right-of-way along with all other vehicles traveling in the same direction
- Procedure for Handling Emergency Vehicles
 - ◆ Communicate with other flaggers and coordinate the stoppage of traffic entering the work zone.
 - ◆ If necessary, stop emergency vehicle to maintain safety
 - ◆ Hold traffic in both directions
 - ◆ Move emergency vehicle(s) through

Single Flagger Operations

- The flagger should stand on the shoulder of the road opposite the work in single flagger operations where a lane is restricted.



Night time Flagging

- Retroreflective garments – Class 3 is recommended
- Retroreflective STOP/SLOW Paddle
- Retroreflective signs
- Properly positioned artificial lights (required, unless in an emergency)



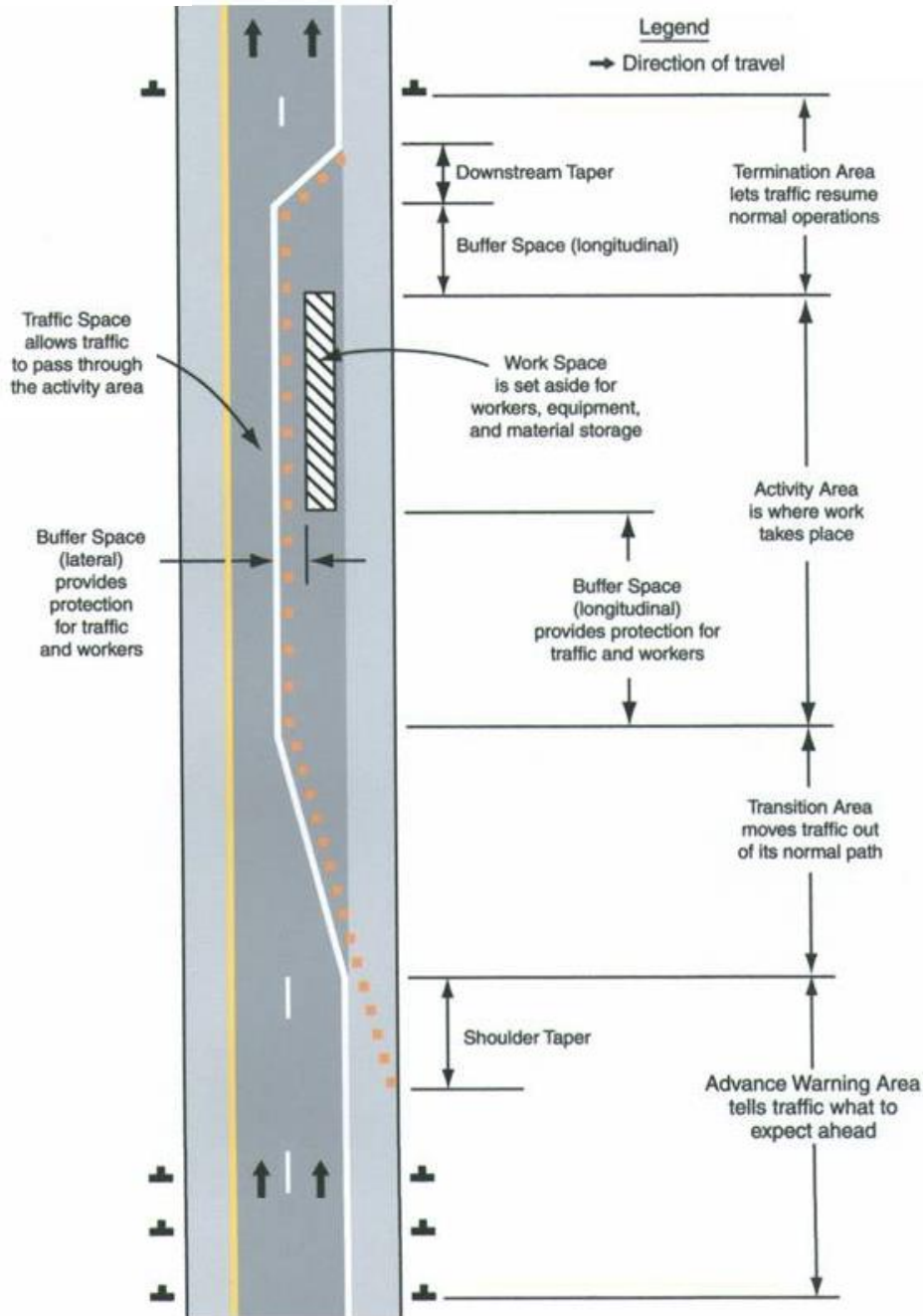
WORK ZONE COMPONENTS

Work Zone Components

- Advance Warning Area
- Transition Area
- Activity Area
- Termination Area

- Flaggers are considered part of the Active Work Zone.

Component Parts of a Temporary Traffic Control Zone



Flagger Safety Equipment

- Flagger warning signs
 - Used in advance to warn motorist
- Orange Channelizing Devices
 - Must be kept clean for visibility

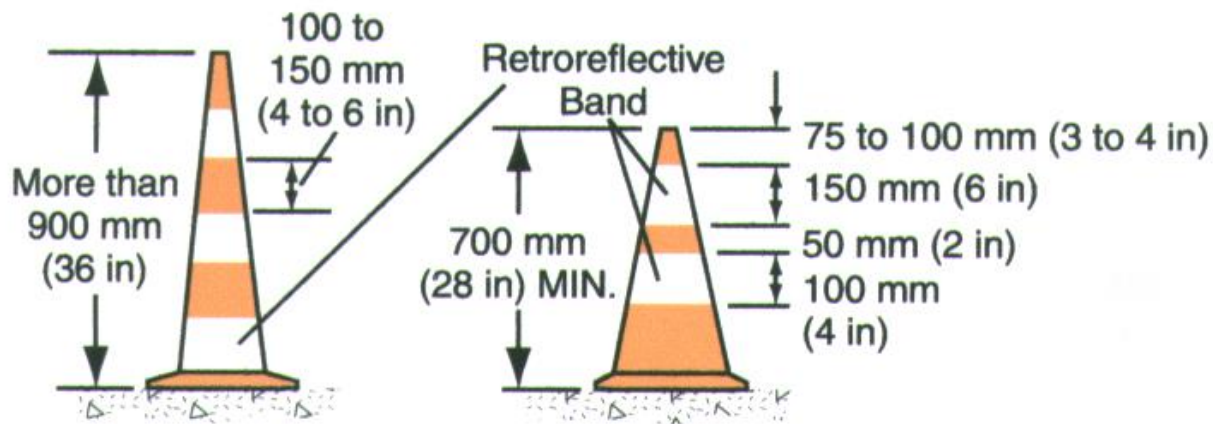


Flagger Warning Signs

- Advanced Warning signs
 - ROAD WORK AHEAD for short-term or moving Work Zones
 - ROAD WORK (with distance) for long-term operations
 - FLAGGER (symbol)
 - Rule of Thumb - Flagger *should* be visible from the FLAGGER sign, if possible
 - ONE LANE ROAD AHEAD (where appropriate)
 - BE PREPARED TO STOP (where appropriate)

Orange Traffic Cones

- Approximately 28 to 36 inches in height
- Shall be reflective for visibility
- Minimum weight 10lbs.



Night and/or Freeway
High-Speed Roadway
(≥ 70 km/h) (≥ 45 mph)

CONES

Advance Warning Area

- ROAD WORK AHEAD for short-term or moving Work Zones
 - ROAD WORK (with distance) for long-term operations
- FLAGGER (Rule of Thumb - Flagger *should* be visible from the FLAGGER sign, if possible)
- ONE LANE ROAD AHEAD (where appropriate)
- BE PREPARED TO STOP (where appropriate)
- ACT 229 Signs (when required):
 - WORK ZONE - TURN ON HEADLIGHTS
 - ACTIVE WORK ZONE WHEN FLASHING



Advance Warning Area

- Signs are placed in this area
Example: Flagger Symbol
- Flagger Symbol sign must be in place before flagging begins
- Flagger Symbol signs should be removed when flagging concludes (turn sign to the side when flagger is not present)

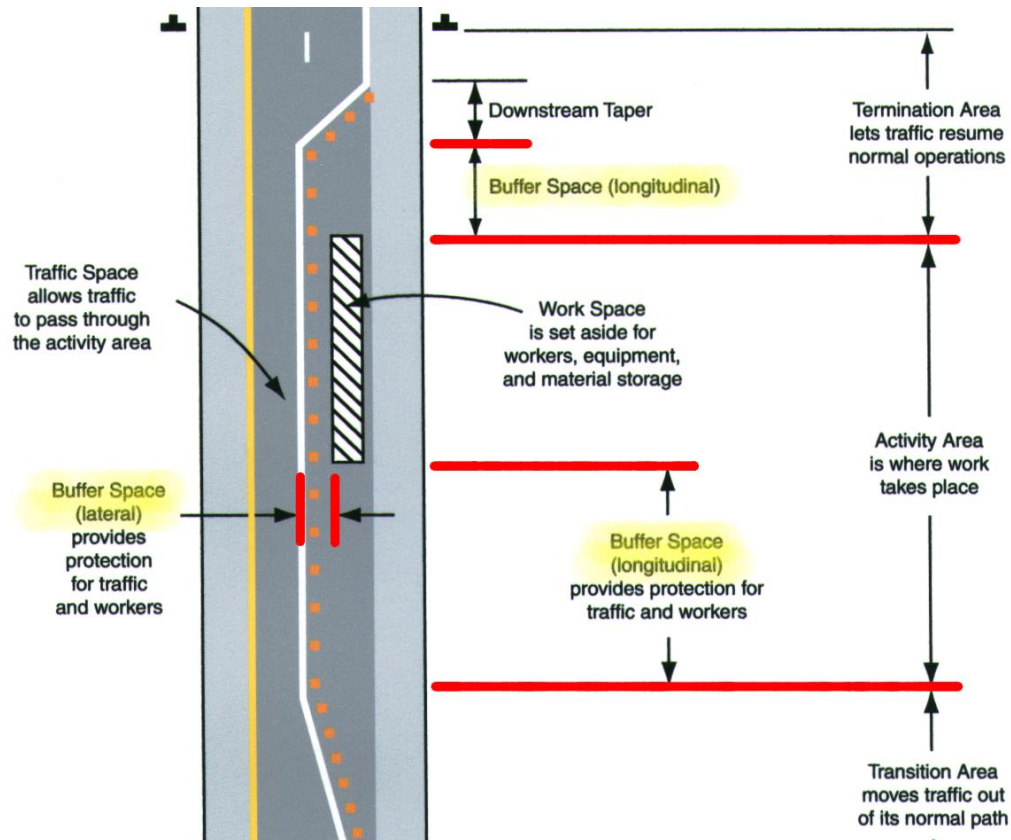


Transition Area

- There must be *at least* six channelizing devices in any taper
- Channelizing devices must be the same in a taper
 - Longitudinal devices may be different
- Channelizing devices must be made of a material that will not significantly damage a vehicle if hit

Buffer Zone

- Allows recovery space for errant vehicles
- Workers and/or equipment should not be in the Buffer Zone



Work Area

- Channelizing devices delineating work area must all be the same (all cones or all vertical panels, etc.)
 - May be different than taper devices
- Channelizing devices delineating work area should be spaced in feet two times the normal speed limit
 - Example: Normal speed limit is 45 mph, spacing is 90 feet apart)
- Shall be retro-reflective for night work

Termination Area

- Traffic returns to normal path
- END ROAD WORK or END ACTIVE WORK ZONE signs
 - If present



Traffic Control Set-ups

- 2 Lane, 2 Way Roadway,
Closure of 1 Lane
 - Single Flagger
 - Two-person Flagging

Single Flagger Should Only be Used When:

- Traffic speeds and volumes are low
Average Daily Traffic (ADT) of 1,500 or less
- Length of one-lane section not more than 150 feet
- Short-term operation
- Adequate sight distance for traffic approaching from either direction exists

Single Flagger Operation-Position



Single Flagger Procedure

1. Stand on shoulder opposite work zone.
2. Stop traffic on the left, extend your right arm with the STOP sign facing the first vehicle.
3. Raise and expose the palm of your left hand.
4. Making sure the traffic on the left remains stopped,
 - rotate the paddle to display STOP to the traffic on the right
 - keep your left hand in the Stop position for the traffic on the left.

Single Flagger Procedure (continued)

5. Switch the paddle to your left hand and extend your right palm to stop traffic on your right.
6. When traffic on your right is stopped, switch the paddle back to your right hand and release traffic on your left with your left hand.
7. When you need to stop a car on your left, turn the STOP sign to the car and put your left hand up in the STOP position.
8. When traffic to the left has stopped, switch the paddle to your left hand and direct traffic on your right to proceed through the work zone.

Two-Flagger Procedure

1. STOP traffic as previously mentioned using the Stop and Slow Paddle.
2. If visibility can be increased by moving to the middle of the road, the flagger may proceed toward middle of road **AFTER** traffic has stopped – keep palm extended
3. Signal partner to release traffic.
4. Wait for all clear sign from partner and that traffic is stopped.
5. Return to shoulder, keep stop signal visible.
6. Release traffic by displaying SLOW sign and hand signals.

Two-Person Flagger Teams

- Appoint “chief flagger” to coordinate
- Two flaggers must work with “one mind”
- On short one-lane sections - stay ***clearly visible*** to each other
- Must maintain clear and precise communication

Two-Flagger Communication Methods

- Hand signals
 - Not to be interpreted by motorist-JRK only uses radios for communications
- Gestures
 - Example is tipping of hat
- Voice
 - Only on short distance segments
- Radios or **Walkie-Talkies-This is the only method to use**
- Interim Flaggers

Communication With the Workers

- Various signals and procedures
- How you plan to warn the workers

- **With the Job Supervisor:**
 - Problems you may encounter with traffic
 - Relief schedule
 - Close calls and accidents
 - Safety violations
 - What type of work is being preformed.

Communication with Co-Flaggers

- What radio channel will be used
- Make sure you give an accurate description and color of the last two vehicles.
- Always acknowledge last car-clear to send traffic-etc.
- Communicate cars entering/exiting the work zone.
- Dangerous situations
- What positions are needed
 - Ends
 - Middle
 - Intersection

Alternate Relay Methods

- Flag-carrying Car
 - Last car carries flag to opposite end of work zone.
- Official Car
 - Official Car follows last car in line.
- Pilot Car
 - Leads line of cars through work zone or detour.

Construction Equipment/Flaggers Exposure

- The flagger has serious exposure in the highway construction work zone, to construction vehicles and equipment
- Statistics show that more workers are struck and seriously injured or killed by construction vehicles that are in the process of backing up within the work zones than for any other injury source.
- The majority of the incidents involved dump trucks backing over workers in the construction work zone.
- Beware of the hazards and blind spots associated with working near moving equipment. The operators may not see you.
- The majority of the incidents and fatalities involved dump trucks backing over workers in the construction work zone.

REVIEW

The Flagger Uses Three Methods to Give Directions

1. STOP/SLOW Paddle Method
2. Red Flag Method
3. Red Light Wand Method
(supplemental)

The Common Element is:

STOP – PROCEED – SLOW (SPS)

Flaggers physical position within the work zone

- **Never** stand in the lane being used by moving traffic
- **Never** turn your back to traffic
- **Never** assume a vehicle is going to stop until it does
- **Never** detour your traffic unless the Prime Contractor authorizes the detour.
- **Never** have your vehicle parked next to you
- **Never** stand alongside a stopped vehicle to talk with the driver
- **Never** leave your position
- **Never** attempt to do anything other than flagging
- **Never** ride on any of the equipment. If being transported to the work location do not sit on the sides or tailgate of the truck.



Why flaggers become injured

- Flaggers are injured when they do not follow the guidelines that are established
- Flaggers are injured when they leave their flagging station and go into the active traffic lane
- Flaggers are injured when they turn their back on traffic.
- Flaggers are injured when they become distracted and are not paying attention to the traffic and equipment around them.
- Flaggers should not put themselves at risk attempting to stop vehicles intruding into the work zone
- Flaggers become too comfortable in their job.

STOP Command

PREFERRED METHOD
STOP/SLOW Paddle



ALTERNATE METHOD
Red Flag



ALERT/SLOW TRAFFIC Command

PREFERRED METHOD
STOP/SLOW Paddle



ALTERNATE METHOD
Red Flag



PROCEED Command

PREFERRED METHOD
STOP/SLOW Paddle



ALTERNATE METHOD
Red Flag



Correct Position



Ineffective Procedures

- To this point, you have been shown correct procedures
 - A flagger using correct procedures can move traffic smoothly through a work zone
 - A flagger using incorrect procedures can cause traffic problems – even danger
- Following are Ineffective, Inappropriate, and Dangerous Procedures
 - Care must be taken to avoid these errors
 - Errors may seem small
 - The consequences of small errors can be serious



Incorrect Position & Flag



Out of position! Never sit down to control traffic



Out of position-Back to traffic-Paddle is not the correct height.



Stop and Slow Paddles are **not** to be used in an intersection.



What do you see incorrect in the following Pictures.

- Accidents happen when flaggers are out of position.
- Flaggers are not using the proper equipment
- Lack of communication
- Not paying attention to their traffic
- Watching the work in progress
- Become distracted with workers, etc.
- Talking & texting on cell phones, listening to radio, ipod, etc.

Never leave your position. You need to be in control of your traffic!!



Poor Positioning and No Escape Route.







Remember the ABCs

- **A**-Advance warning signs must be in place
- **B**-Be visible and alert at all times
- **C**-Control traffic with the proper procedures that you have learned

<http://jrkflaggers.webs.com/WEBPROTECT-test.htm>

Click on the above link to print the test.
Once completed mail the completed test to

JRK Enterprises
415 Shelton Ave
Alexandria, PA 16611

