Washington Metropolitan Area Transit Authority

Board Action/Information Summary

○ Action ◉ Information	MEAD Number: 201932	Resolution: ○ Yes ◉ No

TITLE:

Update on Roadway Worker Protection (RWP)

PRESENTATION SUMMARY:

The Department of Safety & Environmental Management (SAFE) will update the Safety Committee on the Roadway Worker Protection (RWP) enhancements, which are critical in providing protection to individuals occupying the right-of-way.

PURPOSE:

The Board Safety Committee will receive an update on RWP enhancements, and actions being implemented to enhance roadway worker safety. The committee presentation provides transparency to our stakeholders, employees, and public in the Washington metropolitan area community.

DESCRIPTION:

Metro continues to work and is committed to identifying and mitigating hazards that pose a safety risk to our employees, contractors, and customers. A comprehensive RWP program is part of the safety defenses designed to keep all roadway workers from harm while on the right-of-way. Several enhancements have occurred to the RWP program, including process changes and incorporating new technology.

Key Highlights:

• The FTA/Protran Grant is moving forward; the pilot is slated to be installed at 13 locations and operational in August 2018.
• The Vehicle Awareness Technology consists of 30 units that will be installed on roadway maintenance machines (RMMs) and is scheduled to be operational in 3QFY18.
• Recent interim RWP Enhancements have improved roadway worker safety.

Background and History:

Many enhancements have been made since the last Board RWP review in June 2017, including instituting an Advanced Mobile Flagger process and completion of the Hot Spot review. There has also been progress in meeting the NTSB recommendation R-08-04 to enhance roadway worker protection through the use of technology that will provide another layer of protection. As developing the technology system-wide will

require several years to implement, Metro continues to explore interim measures to improve RWP.

Discussion:

FTA Grant / NTSB R-08-04
Metro continues to explore technology and other means to supplement the protection of roadway workers that will eventually meet the NTSB recommendation R-08-04, which states that the Authority must "implement appropriate technology to automatically alert wayside workers of oncoming trains and alert train operators the presence of wayside workers".

Metro has received an FTA grant to help fund the equipment and testing of advance bi-directional warning technologies to improve roadway worker safety. The project will also test a roadway worker location awareness system with enhanced RWP that will communicate with the Rail Operations Control Center (ROCC): 1) where the roadway worker is located on the right of way (ROW); 2) where the roadway worker entered the ROW or exited the ROW; 3) how long the roadway worker was on the ROW; and 4) where the train is in relationship to the roadway worker.

Several progress milestones are being monitored.
• Preliminary installation and tests have been completed between National Airport and Braddock Road in April 2017.
• Installation of roadway box units will begin at remaining locations starting in December 2017.
• Training will occur for all users in July 2018.
• The equipment is scheduled to be fully installed and operational in August 2018.

Locations/track sections have been selected to provide a representative sample of all hazardous track conditions present in the system. These locations include:
• Between Union Station and NoMa (both tracks)
• National Airport to Crystal City (Track 2)
• West Hyattsville to PG Plaza (both tracks)
• PG Plaza to College Park (both tracks)
• Suitland to Naylor Road (Track 1)
• Morgan Blvd to Largo (Track 2)
• Dunn Loring to WFC (Track 1)
• EFC to Ballston (Track 2)
• Pentagon to L'Enfant (Both tracks).

Vehicle Awareness Technology
The Vehicle Awareness Technology is intended to enhance RWP at fixed work zones, and is designed only for Class II / RMMs. Roadway workers wear armbands that provide an audio/visual alert when an equipped train approaches. Conversely a device installed at the entering end of the work zone informs approaching trains of the workers presence on the right of way by providing an audio/visual alert within the operators cab. In addition, the system is intended to alert Class II operators when their vehicles are within close proximity of each other to reduce the likelihood of collisions between equipped vehicles.

Thirty units are ready to be installed. Units are currently installed in two prime movers. The test plan is currently under development. This plan will identify the final scope and success parameters of the project. The hazard analysis is also being concurrently developed. This is to ensure greater hazards are not being introduced as part of the pilot project. It is projected that the technology will be fully deployed sometime in the third quarter of FY18.

Interim RWP Enhancements
Finally, interim RWP enhancements have been implemented while the technology-based pilot projects are being designed and tested.

As was discussed at an earlier committee meeting in June, the advanced mobile flagger process has been fully adopted. This process deploys a worker at each station that precedes each mobile work crew that is on the right of way. This worker stops the train when it enters the station and warns the train operator of the work crew ahead. The train is then to proceed at ½ the regulated speed until the train operator encounters the work crew, at which point the operator is to stop the train. The train is only allowed to move past the crew when the operator receives acknowledgement from the work crew.

A survey of the rail system was recently completed. This survey reviewed all areas for track hot spots, which are high hazard areas for roadway workers. These hot spots require special precautions, such as foul time, to pass through. Several new hot spots were identified (e.g., near National Airport).

These additional hot spots were added to the revised Track Access Guide. This Guide is also being modified to include system maps that would identify the level of protection required for a given section of track. This is currently communicated to roadway workers by chain marker notations with no map reference.

Lone workers are no longer able to walk track on the mainline without calling for foul time (i.e., when wayside personnel request the ROCC stop all train movement in a specified location), which greatly increases their level of protection.

RWP permanent orders are being reviewed and updated, and the RWP handbook is being integrated into the Metrorail Safety Rules and Procedures Handbook (MSRPH). This will reduce confusion by having only one roadway rule book.

Finally, enhanced emergency maintenance procedures have been developed to ensure the proper levels of protection are employed for certain track-related repairs and activities.

FUNDING IMPACT:

Information item only; no funding impact.	
Project Manager:	Patrick Lavin
Project Department/Office:	SAFE

TIMELINE:

Previous Actions	• RWP Review on June 22, 2017
Anticipated actions after presentation	• Continue to review advanced technology for RWP • Complete pilot tests

RECOMMENDATION:

To inform the Board's Safety Committee of the status of the RWP Program enhancements and continuing steps to enhance protection of our employees.

Washington Metropolitan Area Transit Authority

Roadway Worker Protection

Safety Committee
November 16, 2017

Highlighted Actions

- FTA/Protran Grant (NTSB R-08-04)
- Vehicle Awareness Technology
- Interim Roadway Worker Protection Enhancements

FTA/Protran Grant Project
(NTSB R-08-04)

- Bi-directional system adds layer of protection
- Roadway workers wear personal alert device on arm that activates boxes
- Passing trains are detected and notify personnel of their presence via armband (light and audible alert)
- Train operators alerted of nearby workers via the amber light on top of roadway box
- Location Awareness Technology will allow roadway worker locations to be tracked and remotely identified

FTA/Protran Grant Project
(NTSB R-08-04)

- Critical hot spots prioritized
  - 13 locations / track sections
    - Locations/track sections selected to provide a representative sample of all hazardous track conditions present in the system
  - 184 roadway box units
  - 178 alarm armbands
- Schedule
  - *April 2017:* Preliminary installation and tests completed between National Airport and Braddock Road.
  - *December 2017:* Installation of units will begin at remaining locations
  - *June/July 2018:* Training of armband use will occur for all users
  - *August 2018:* Equipment will be operational

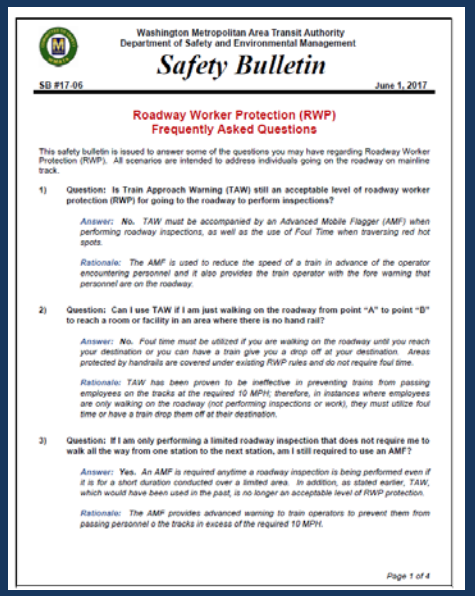
Vehicle Awareness Technology

- For Class II / roadway maintenance machines only
- Protection
  - Vehicle to vehicle
  - Vehicle to fixed work zone detection
  - Vehicle to personnel via armband alerts
- Alarms sound when vehicles/workers are in close proximity of each other

- <u>Update</u>:
  - Thirty units obtained
  - Two prime movers have the system installed
  - Test plan in development for the full pilot testing
  - Hazard analysis being conducted prior to full pilot implementation
  - Full pilot roll out: 3QFY18

Interim RWP Enhancements

- Advanced mobile flagger
- Resurveyed system for track hot spots
- Track Access Guide Revision
  - System maps addition
- Eliminated lone worker on mainline
  - An individual employee on right of way must have foul time
- Reviewing RWP Permanent Orders
- RWP integration with the MSRPH
- Enhanced emergency maintenance procedures



Washington Metropolitan Area Transit Authority
Department of Safety and Environmental Management

Safety Bulletin

SB #17-06 June 1, 2017

Roadway Worker Protection (RWP)
Frequently Asked Questions

This safety bulletin is issued to answer some of the questions you may have regarding Roadway Worker Protection (RWP). All scenarios are intended to address individuals going on the roadway on mainline track.

1) **Question: Is Train Approach Warning (TAW) still an acceptable level of roadway worker protection (RWP) for going to the roadway to perform inspections?**

Answer: **No.** *TAW must be accompanied by an Advanced Mobile Flagger (AMF) when performing roadway inspections, as well as the use of Foul Time when traversing red hot spots.*

Rationale: The AMF is used to reduce the speed of a train in advance of the operator encountering personnel and it also provides the train operator with the fore warning that personnel are on the roadway.

2) **Question: Can I use TAW if I am just walking on the roadway from point "A" to point "B" to reach a room or facility in an area where there is no hand rail?**

Answer: **No.** *Foul time must be utilized if you are walking on the roadway until you reach your destination or you can have a train give you a drop off at your destination. Areas protected by handrails are covered under existing RWP rules and do not require foul time.*

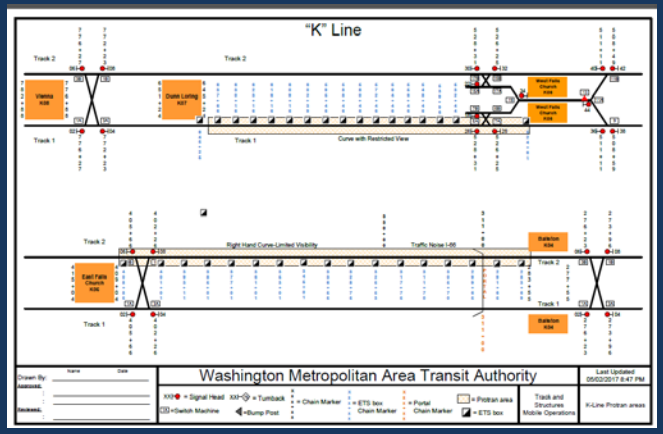
Rationale: TAW has been proven to be ineffective in preventing trains from passing employees on the tracks at the required 10 MPH; therefore, in instances where employees are only walking on the roadway (not performing inspections or work), they must utilize foul time or have a train drop them off at their destination.

3) **Question: If I am only performing a limited roadway inspection that does not require me to walk all the way from one station to the next station, am I still required to use an AMF?**

Answer: **Yes.** *An AMF is required anytime a roadway inspection is being performed even if it is for a short duration conducted over a limited area. In addition, as stated earlier, TAW, which would have been used in the past, is no longer an acceptable level of RWP protection.*

Rationale: The AMF provides advanced warning to train operators to prevent them from passing personnel o the tracks in excess of the required 10 MPH.

Page 1 of 4



Questions