

### **8.3.11 Training**

All Designers are required to be familiar with work zone safety and mobility strategies, and the application of the Road User Cost manual. Training classes and seminars will be developed on an as needed basis.

Construction personnel shall be trained in work zone safety as per Department guidelines.

## Section 9 – Work Zone Safety and Mobility Policy

Policy & Procedure 815

### I. PURPOSE

To establish a Policy for the consistent and comprehensive application of work zone safety and mobility from planning through construction for Federal-aid highway projects. This policy shall conform to FHWA Final Rule on Work Zone Safety & Mobility 23 CFR Part 630 Subpart J published in the Federal Register on September 9, 2004.

### II. DEFINITIONS

**Federal-aid Highway** – A highway eligible for assistance under Title 23 United States Code (USC) other than a highway classified as a local road or rural minor collector. Projects on federal-aid highways may be administered by the owner (NJDOT), developers, or other agencies.

**Highway Workers** – Highway workers include, but are not limited to, personnel of the contractor, subcontractor, NJDOT, utilities, and law enforcement, performing work within the right-of-way of a transportation facility.

**Mobility** – Mobility is the ability to move from place to place and is significantly dependent on the availability of transportation facilities and on system operating conditions. With specific reference to work zones, mobility pertains to moving road users efficiently through or around a work zone area with a minimum delay compared to baseline travel when no work zone is present, while not compromising the safety of highway workers or road users. The commonly used performance measures for the assessment of mobility include delay, speed, travel time, and queue lengths. These are affected by traffic volumes, capacity, and access control.

**Project Manager (PM)** – The PM has the responsibility and authority for implementing the Transportation Management Plan (TMP) and other safety and mobility aspects of the project.

**Public Information (PI)** – The PI component of the Transportation Management Plan (TMP) includes communication strategies to inform affected road users, the appropriate public entities, area residences and businesses, and the general public about the project and its expected work zone impacts. The PI component varies depending on the project characteristics. It may include such things as information on the project characteristics, expected impacts, closure details, real time traffic information, and commuter alternatives.

**Safety** – Safety is a representation of the level of exposure to potential hazards for users of transportation facilities and highway workers. With specific reference to work zones, safety refers to minimizing potential hazards to road users in the vicinity of a work zone and highway workers at the work zone interface with traffic. The commonly used measures for highway safety are the number of crashes or the consequences of crashes (fatalities and injuries) at a given location or along a section of highway during a period of time.

Significant Projects – Federal-aid highway projects, regardless of funding source, which occupy a location for more than three days with either intermittent or continuous lane closures shall be considered significant.

Temporary Traffic Control Plan (TTC) – A TTC plan describes TTC measures used for facilitating road users through a work zone or an incident area. The TTC plan plays a vital role in providing continuity of reasonably safe and efficient road user flow and highway worker safety through work zones, or when incidents temporarily disrupt normal road user flow. The TTC plan shall be consistent with the MUTCD, AASHTO Roadside Design Guide, and NJDOT standards. In developing and implementing the TTC plan, pre-existing roadside safety hardware shall be maintained at an equivalent or better level than existed prior to project implementation. The TTC plan shall either be a reference to specific TTC elements in the MUTCD, approved standard TTC plans, or be designed specifically for the project.

Traffic Mitigation (TM) – Traffic mitigation is the management of motor vehicle, bicycle, and pedestrian traffic to provide work zone safety and reduce user costs.

Traffic Mitigation Advocate (TM Advocate) – The TM Advocate facilitates the management of TM Policies and Procedures in the Department.

Transportation Management Plan (TMP) – The TMP consists of strategies to manage the work zone impacts of a project. The scope, content, and degree of detail may vary based on the expected work zone impacts. A complete TMP, required for significant projects, consists of the Temporary Traffic Control Plan (TTC) and addresses the Transportation Operations (TO) and Public Information (PI) components.

Transportation Operations (TO) – The TO component of the TMP identifies strategies that will be used to mitigate impacts of the work zone on the operation and management of the transportation system within the work zone impact area. Typical TO strategies may include such things as demand management, corridor/network management, safety management and enforcement, and work zone traffic management. The scope of the TO component varies depending on the project characteristics, and the transportation operations and safety strategies.

Work Zone – A work zone is an area of a highway with construction, maintenance, or utility work activities. A work zone extends from the first warning sign or TTC device to the End Road Work sign or last TTC device.

Work Zone Crash – A work zone crash is a traffic crash in which the first harmful event occurs within the boundaries of a work zone or its affected area. This includes crashes occurring on approach to, exiting from or adjacent to work zones.

Work Zone Impacts – Work zone impacts refer to work zone-induced deviations from the normal range of transportation system safety and mobility. These impacts may extend beyond the physical location of the work zone itself and affect other highway

corridors or other modes of transportation. The extent of the work zone impacts may vary based on factors such as road classification, area type (urban, suburban, and rural), traffic and travel characteristics, type of work being performed, time of day/night, and complexity of the project.

### III. POLICY

The systematic consideration and management of work zone impacts shall be undertaken, as a minimum, on all federally funded projects and projects that are on the Federal-aid highway system. Work zone impacts and traffic mitigation strategies shall be addressed throughout the various stages of project development. Guidance, procedures, and processes, developed in partnership with the FHWA, will be utilized.

The Department is committed to providing a network of transportation facilities that enables the public to move safely and efficiently throughout the State. Developing and maintaining a statewide transportation network requires periodic upgrades and improvements to these facilities through construction projects. The Department's first priority is to complete these projects in a timely, cost-efficient, and safe manner. However, it is recognized that construction work zone impacts might inconvenience the public, in some cases resulting in delays, road user costs and disrupted businesses.

Work zone impacts are affected by traffic volumes and capacities. Therefore, a volume to capacity analysis should be evaluated for roadways within the project limits affected by the construction to help determine the level of impacts.

For significant projects, a Transportation Management Plan (TMP) will be developed to address safety and mobility impacts. For non-significant projects, a TMP may consist of only the TTC plan, although the TO and PI components should be considered as well. Benefits of the TMP for the public and the Department may include:

- Improved motor vehicle, bicycle, and pedestrian traffic flow through the construction area and along detour routes, minimizing disruptions
- Educated public concerning the purpose of and plans for construction projects, helping to reduce citizen complaints and build goodwill for the Department
- Encouraged use of transit and other alternate modes, and travelers educated about the benefits of these modes
- Efficient and timely completion of construction projects, offering short and long term cost savings, while minimizing the disruption for motorists
- Reduced number of incidents in construction corridors
- Enhanced incident detection and emergency response

The TMP should be developed in consultation with interested parties. Interested parties may include public officials, local stakeholders, other transportation agencies, utility companies, and transit providers. The extent of the outreach and development will generally increase as the anticipated impacts increase.

### IV. ROLES AND RESPONSIBILITIES

The Department as a whole shall provide reasonable, sensible, and responsible work

zone safety and mobility for highway workers and the traveling public.

Transportation Management Plans are generally multi-dimensional. The plans and TM activities might encompass numerous mitigation strategies, cross municipal boundaries, and require participation of many Departmental Divisions and entities external to the Department, depending on the project impacts and location. Each of these entities must understand its role and responsibilities, the roles of other groups, and how and when the roles interact.

The TM Advocate will help develop and maintain policy to provide continuity. The Project Manager will ensure that TMP activities are coordinated from planning through construction. A consistent approach during all project phases should preserve TMP decisions, unless warranted by design changes. The Project Manager will ensure the balance of constructability, schedule, budget, safety, road user impacts, and the community through leadership and collaboration.

## V. GOALS

The work zone safety and mobility goals are to:

- Balance the Department's need to minimize roadway construction costs with the need to minimize construction-related inconvenience for motorists, bicyclists, pedestrians, local residents, businesses, and other stakeholders
- Provide a high level of safety for workers and the public
- Ensure that traffic mitigation needs are addressed systematically in all projects
- Provide adequate lead-time for the Department and outside partners to implement traffic mitigation strategies
- Ensure that the cost of traffic mitigation is included in project cost estimates and that funding is provided
- Provide the contractor adequate access to complete the work efficiently while meeting the quality requirements of the contract
- Establish measurable design and construction criteria for the improvement of safety and mobility in the work zone.

## VI. AUTHORITY

Federal Register, Title 23 Highways, Code of Federal Regulations (CFR), Part 630 – Preconstruction Procedures, Subpart J – Work Zone Safety and Mobility

## **Section 10 – Additional Resources**

Work Zone Rule Examples may be found at

[http://www.ops.fhwa.dot.gov/wz/resources/final\\_rule/examples.htm](http://www.ops.fhwa.dot.gov/wz/resources/final_rule/examples.htm)

Best Practices Fact Sheets may be found at

<http://www.ops.fhwa.dot.gov/wz/practices/factsheets/factsheets.htm>

Road User Cost Manual may be found at

<http://www.state.nj.us/transportation/eng/documents/RUCM/>