

POLICY DIRECTIVE

Jonathan Gulliver (signature on original)

ADMINISTRATOR

Tunnel Inspection and Testing Program

This Policy Directive supersedes Policy Directive P-13-003, dated March 15, 2013.

1. Purpose and Scope

- 1.1 To provide a uniform policy for tunnel inspection, life safety system testing and to establish the frequencies thereof for all tunnels under the jurisdiction of MassDOT.
- 1.2 The following tunnels under the jurisdiction of MassDOT are included in this policy: I-90 Tunnels (I-90 connector and ramps), I-93 Tunnels (Tip O'Neill Tunnel, Dewey Square Tunnel, I-90 Collector and Ramps), Ted Williams Tunnel, Callahan Tunnel, Sumner Tunnel, City Square Tunnel ("CANA"), Somerville Tunnel and portions of the Prudential Tunnel (includes Hynes/Prudential/Shaw's/Copley/Hancock).

2. Implementation

The condition evaluation of the tunnel elements shall be consistent with the references cited below. As the tunnels listed above are each of unique design and contain unique components of varying functional life expectancies, it is acknowledged that the tunnel inspection and operation protocols mandated by this policy will evolve over time. The procedures described in the documents below are anticipated to be amended to fit the specific conditions and operational needs of each tunnel listed above.

- 2.1 National Tunnel Inspection Standards (NTIS), 23 CFR 650 Subpart E, FHWA
- 2.2 Specifications for the National Tunnel Inventory (SNTI), FHWA
- 2.3 Tunnel Inspection Handbook, MassDOT
- 2.4 Tunnel Operations, Maintenance, Inspection & Evaluation (TOMIE) Manual, FHWA
- 2.5 MassDOT Highway Operations Center response plan documents:
 - RP101 Tunnel Roadway Fire
 - RP101A Fire Response for I93 and I90 Tunnels

- RP101B Fire Response for the Sumner/Callahan Tunnels
- RP101C Fire Response for the Prudential Tunnel
- RP101D Fire Response for CANA Tunnel

3. Frequency of Inspection (Updated February 2, 2018)

The maximum time period between inspections for tunnel components are as follows:

- 3.1 Ceiling panels and hanger systems over roadways supporting ceiling panels, mechanical equipment (jet fans), electrical equipment (lights), conduits, pipes, sign mounting assemblies, communications systems and catwalks in poor or fair condition (Condition States 3 or 4; using Element Level Ratings with a 1 to 4 scale) shall be inspected once per year.
- 3.2 All civil, structural, mechanical, electrical and fire/life safety systems and any protective systems as defined in Section 2.2 and 2.3 shall be inspected every two years.
- 3.3 Condition evaluation of the tunnel elements shall be based on the references cited in Sections 2.2 and 2.3 above. Element condition quantities (using a 1 to 4 scale), are then to be converted to an overall Component Condition Rating (1 to 9 scale). Any tunnel component that has a Condition Code of 4 (i.e. poor condition using 1 to 9 scale) or deemed in need of a special inspection frequency by the Tunnel Group, shall be scheduled as a priority and be inspected a maximum frequency of every six months for components described in 3.1 and shall be inspected every year for components described in 3.2. Only the components related to the poor condition require inspection, however, inspectors should be diligent and notify MassDOT of any safety concerns observed outside of the assigned scope of work or obvious changes in condition.
- 3.4 The scheduled preventive maintenance procedures on life safety systems and fire protection testing shall be summarized and reported every six months.
- 3.5 Ventilation testing shall be performed on each individual tunnel and tunnel ramp ventilation zone. The tests shall evaluate the ability of the components of the ventilation system to function as designed. Such tests shall be scheduled and conducted every six months with the results documented and reported. Additionally, there shall be an evaluation of the automated and manual response plan activation from the Highway Operations Center as well as local response plan activation at each vent building.

4. Inspection and Testing Results

- 4.1 Data generated by the tunnel inspections shall be stored in a computerized database compatible with the National Tunnel Inspection Standards.

- 4.2 Inspection results and testing results shall be utilized by MassDOT Maintenance and Engineering Departments to correct deficiencies, adjust scheduled preventive maintenance frequencies and plan capital improvements.