

POLICY DIRECTIVE

Frank DePaola P. E. (signature on original)

ADMINISTRATOR

Tunnel Inspection and Testing Program

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 and Ramps), Ted Williams Tunnel, Callahan Tunnel, Sumner Tunnel, City Square Tunnel ("CANA") and portions of the Prudential Tunnel (includes Prudential/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 Inspection Manual for Tunnels and Boat Structures, Volume 5, November 2003
- 2.2 Highway and Rail Transit Tunnel Inspection Manual, 2005, FHWA
- 2.3 MassDOT Highway Operations Center response plan documents:
 - RP101 Tunnel Roadway Fire
 - RP101A Fire Response for 193 and 190 Tunnels
 - RP101 B Fire Response for the Sumner/Callahan Tunnels
 - RP1 01 C Fire Response for the Prudential Tunnel
 - RP101D Fire Response for CANA Tunnel

3. Frequency of Inspection (Beginning January 1, 2013)

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/exhaust fans), electrical equipment (lights), conduits, pipes, sign mounting assemblies, communications systems and catwalks shall be inspected once per year.
- 3.2 Remaining tunnel components, including but not limited to: roof/lining concrete, walls, SPTC walls, columns wall panels, air supply ducts, exhaust air ducts, safety walks, barriers, curbs, roadway pavements, decks, slabs, drainage, base slab, lining concrete, pump stations, roof beams, roof beam connections, roof slabs and structural protective coatings shall be inspected every two years.
- 3.3 Condition evaluation of the tunnel elements shall be based on the references cited in Section 2.1 above. Any tunnel component that has a Condition Code of 4 (poor) shall be scheduled as a priority and be inspected every six months for components described in 3.1 and shall be inspected every year for components described in 3.2.

Any tunnel component that has a Condition Code of 3 (serious) or less shall be scheduled as the highest priority and be inspected every three months for components described in 3.1 and shall be inspected every six months for components described in 3.2.

- 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. Additionally, the ventilation tests shall include 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. Such tests shall be scheduled and conducted every six months.

4. Inspection and Testing Results

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