

Tunnel Maintenance: Lighting

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Overview

- In mid-September, during routine inspection, a single “cracked nut” was discovered in the Ted Williams Tunnel
- MassDOT instructed the inspectors to focus on the nuts, and 41 additional nuts were discovered
- At no point did the issue pose a public safety risk
- A plan was developed to inspect every nut on every light fixture in the TWT, I-90 Connector, and I-93 tunnels, flag any nut that appeared compromised, and develop a systematic approach for addressing the maintenance need.

Nuts and Bolts

Cracked nut



Strut System



Inspection Findings

(10/19/15)

Ted Williams Tunnel

5,000 light fixtures x 6 nuts per unit	30,000 total nuts
3,515 light fixtures inspected x 6 nuts per unit	21,090 nuts inspected (70%)
Nuts Recommended for Replacement	878
Approximate % of Nuts Recommended for Replacement	4%

I-90 Connector and I-93

17,925 light fixtures x 6 nuts per unit	107,550 total nuts
2,486 light fixtures inspected x 6 nuts per unit	14,916 nuts inspected (14%)
Nuts Recommended for Replacement	49
Approximate % of Nuts Recommended for Replacement	.034%

Process Going Forward

- Complete the inspection of TWT by end of October
 - I-90 Connector and I-93 by end of November

- Systematic approach will be to remove, repair, replace nuts moving from lane to lane

- Any fixture with a minimum of 1 cracked nut will be removed and the nut will be replaced

Tunnel Maintenance: Leaks

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Maintenance Approach for Leaks

- MassDOT monitors and addresses tunnel leaks through a robust inspection and maintenance program

- Last year: 16 million gallons pumped out of 3 tunnels
 - Average \$5.2M spent on addressing leaks for these tunnels between 2008-2014

- FHWA has set a “practical point of reference” for the acceptable threshold of tunnel leakage of 1 gallon per minute (FHWA CA/T Interim Report, 2005)

Maintenance of Tunnel Leaks

- Short term plan is always to address and treat the issue through maintenance
- Long term plan is focused on the root causes
- FHWA is a critical partner in this long term plan and in this long term discussion