

## On-Call Inspection - PENNDOT



**Location:**

Various Locations Throughout Pennsylvania

**MFS Project PM:**

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**Client Contacts:**

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 Pennsylvania Department of Transportation

**Date:**

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**Situation**

Pennsylvania Department of Transportation (PennDOT) used Metal Fatigue Solution's Electrochemical Fatigue Sensor (EFS) System to inspect nine bridges on the primary road system. The bridges, which included five interstate and three state highway bridges, all had a history of fatigue cracking. In some cases, repairs had been made or were planned. During the inspections, the EFS system was installed at visually identified cracks, adjacent to crack repair locations, and at additional locations exhibiting similar fatigue-prone details. The EFS data analysis was used to determine whether the documented fatigue cracks were still growing under ambient traffic flow.

Tests at various locations indicated:

- 37% of locations tested were actively cracking.
- 11% of locations showed potential growth activity.
- Many retrofits were verified as effective.
- Deferment of repair funds was possible.
- Many locations were identified for early (less expensive) repairs.



**Results**

A total of 112 locations were inspected using the EFS system. A total of 41 growing cracks were identified. In some cases, these growing cracks were located where repairs had previously been made. Another 12 locations exhibited microplasticity that is indicative of the potential for future crack growth.



The remaining 59 locations did not have actively growing cracks.

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