



Full Depth Reclamation Project Performance

Experimental Project Progress Report EXP-SR-508

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County	Brevard
Financial Project	430658-1-52-01
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Objective

The objective of this study is to evaluate the relative long-term performance of a Full Depth Reclamation (FDR) rehabilitation compared to the performance of traditional full reconstruction used as the control.

Background

The Resurfacing, Restoration and Rehabilitation (RRR) project (430658-1-52-01) is on SR-508, in the City of Melbourne, Brevard County. The RRR project extends from milepost (MP) 38.636 (Eddie Allen Rd) in the West to MP 39.971 (SR5/US1) in the East, utilizing Full Depth Reclamation (FDR) of the two Eastbound lanes, and Full Depth Reconstruction of the two Westbound lanes. The typical section is a divided Urban Other Principal Arterial, with four 12-ft lanes and curbed grass median, 45-mph posted speed limit, and a 2017 directional AADT of 8,000 and truck percentage of 3.1%. The project was completed in March, 2017.

Project Description

The experimental section limits extend from MP 39.093 to MP 39.493, with FDR in the Eastbound travel lane (R2) as the test section, and Full Depth Reconstruction in Westbound travel lane (L2) as the control section. The pre-existing pavement profile consisted of fine silty sand embankment, 12 inches type B stabilization, 8 inches of soil cement base and 3 inches of asphalt cement. The pavement was in poor condition with alligator cracking and depressions in the wheelpaths. The advanced deterioration of the soil-cement base did not allow for a standard milling and resurfacing. Therefore, the eastbound lanes were milled down leaving 1.5 inches of soil-cement base in place. Milled asphalt and base materials were pulverized in place and asphalt emulsion was added to produce 7 inches of FDR base. The westbound lanes were milled down to bottom of soil cement base which was replaced with 8 inches of limerock base. All lanes received 1.5 inches SP 12.5 structural overlay, and 1.5 inches FC-12.5 friction course.

Pavement performance is evaluated in terms of cracking, rutting, smoothness, and deflection.



Figure 1 Project Location

**FDR
R2**

**Reconstruction (Control)
L2**

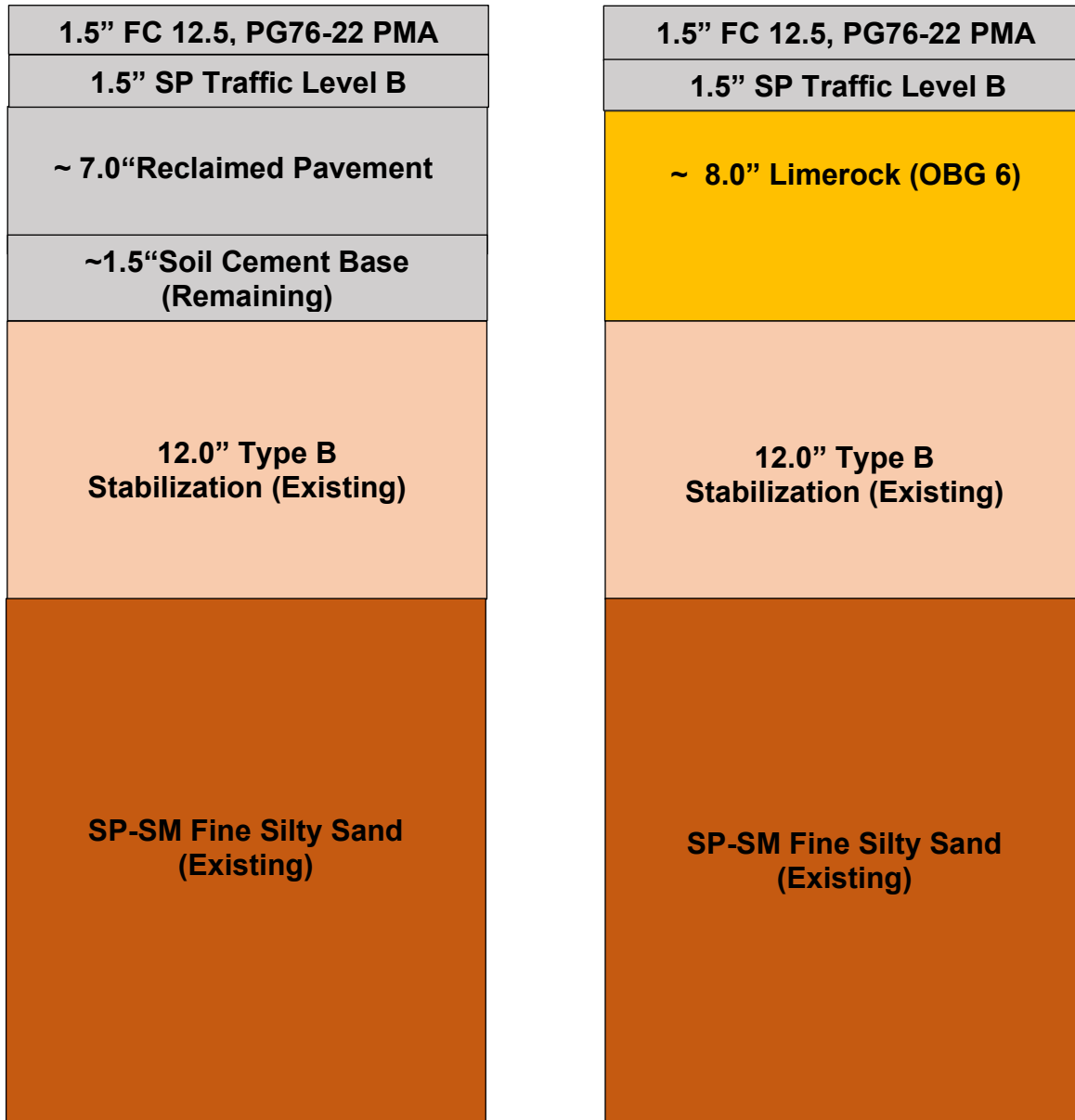


Figure 2 Typical Section

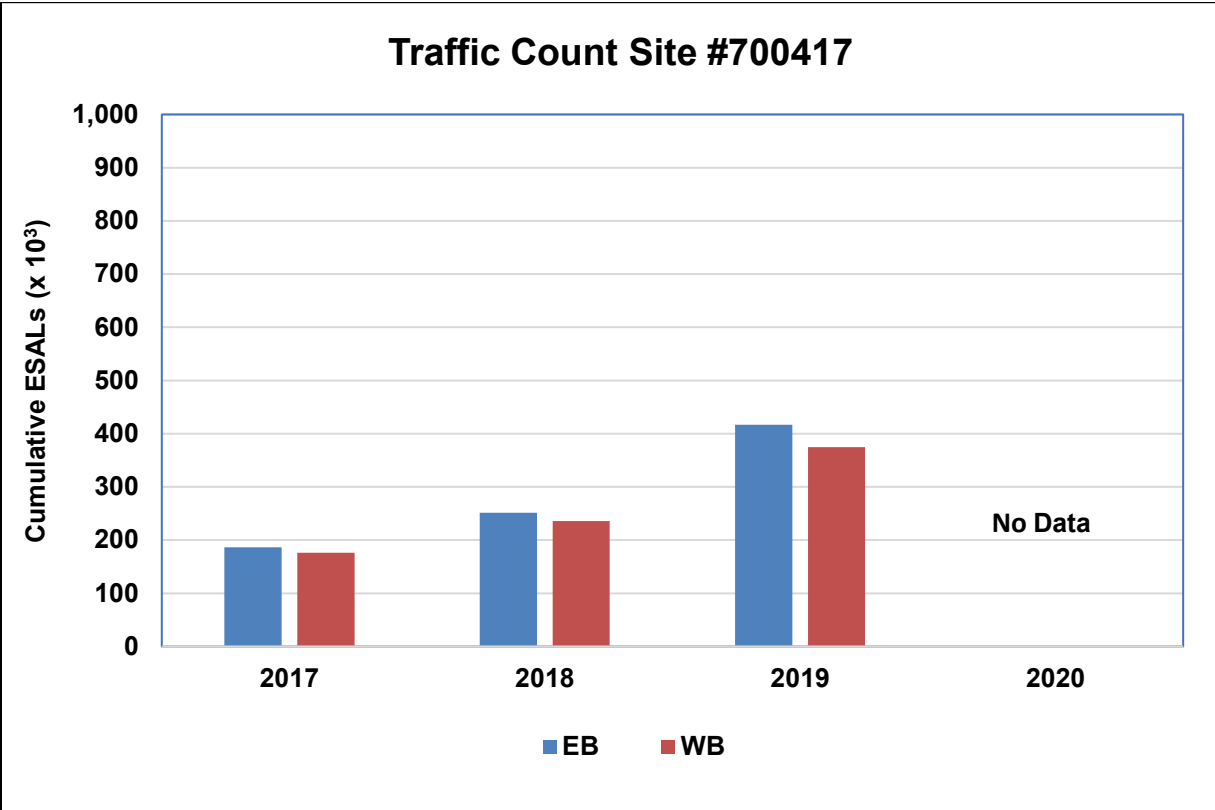


Figure 3 Traffic

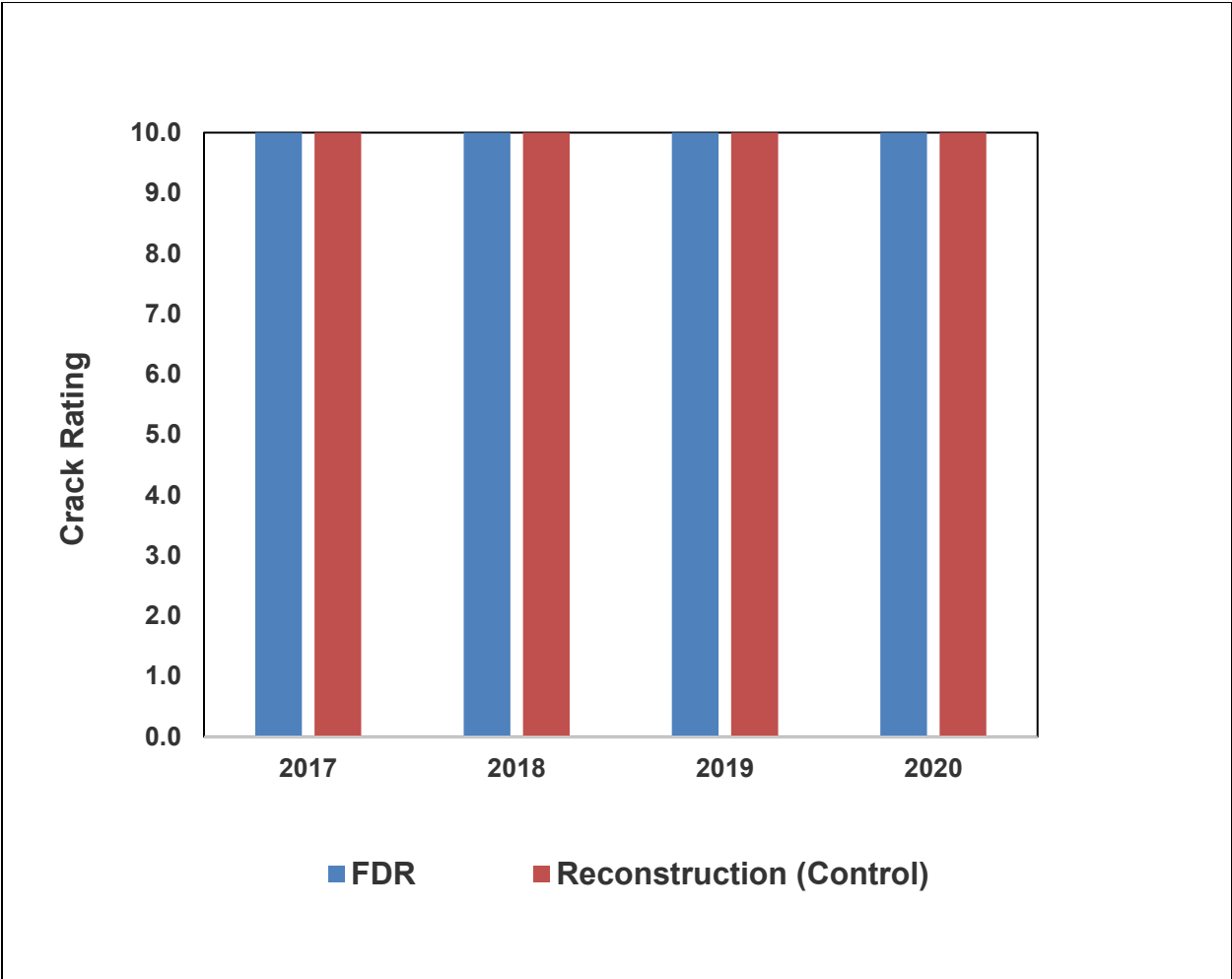


Figure 4 Cracking

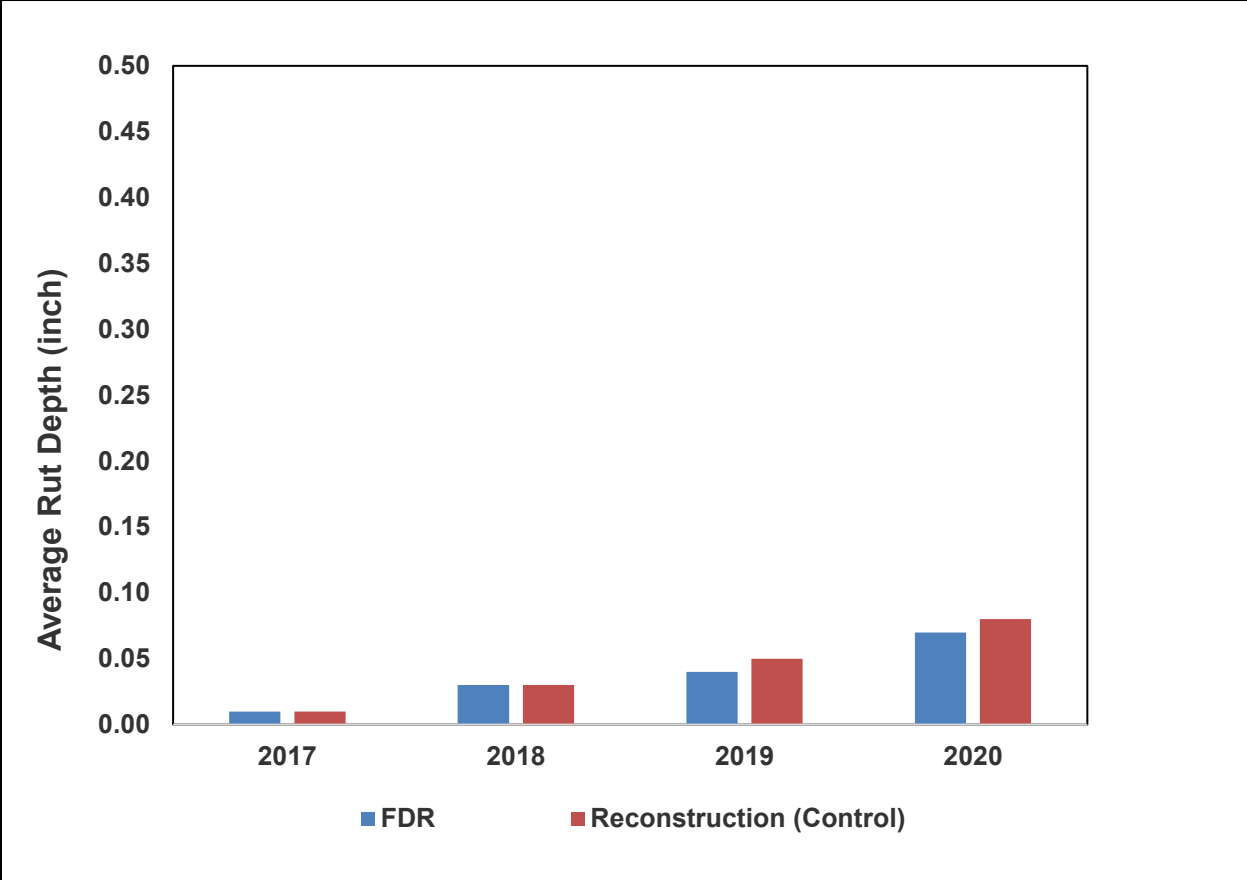


Figure 5 Rutting

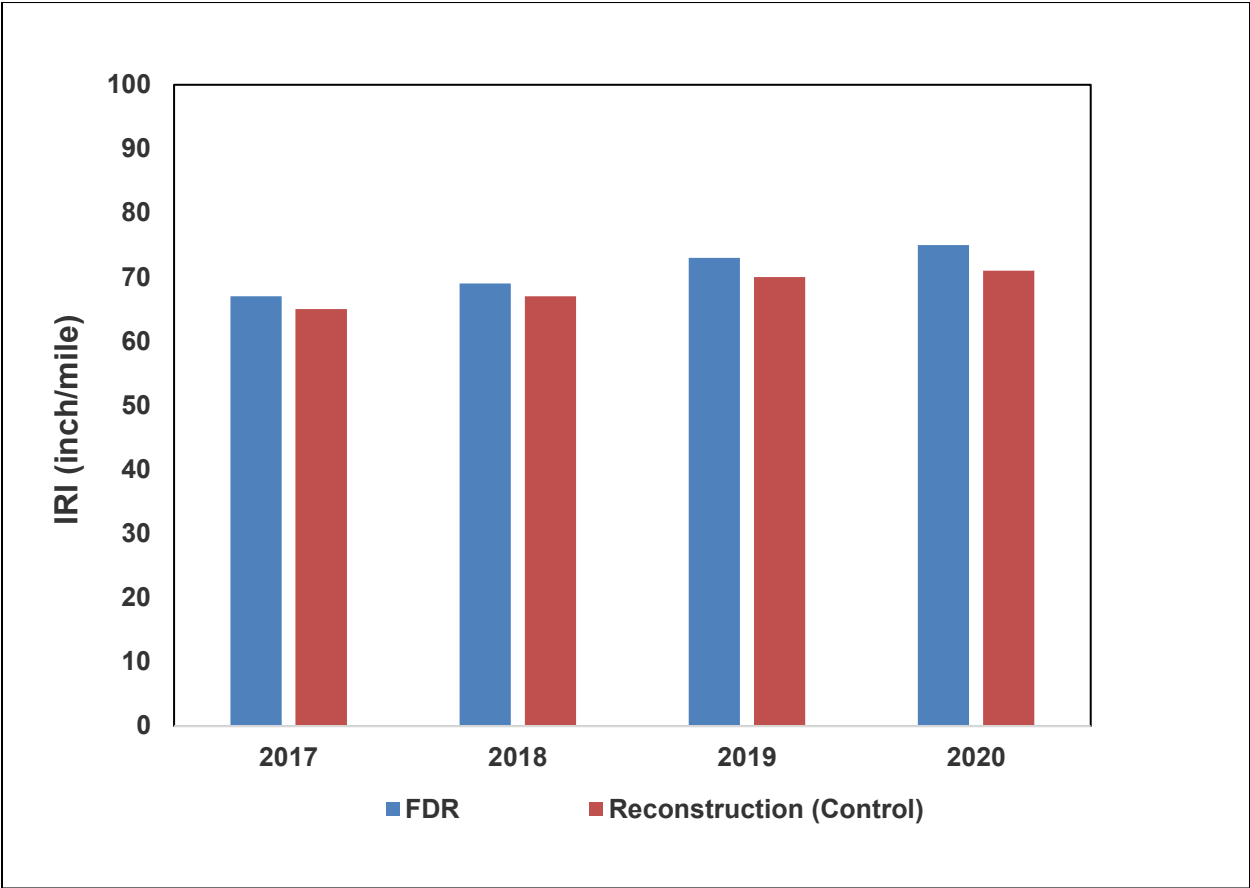


Figure 6 Smoothness

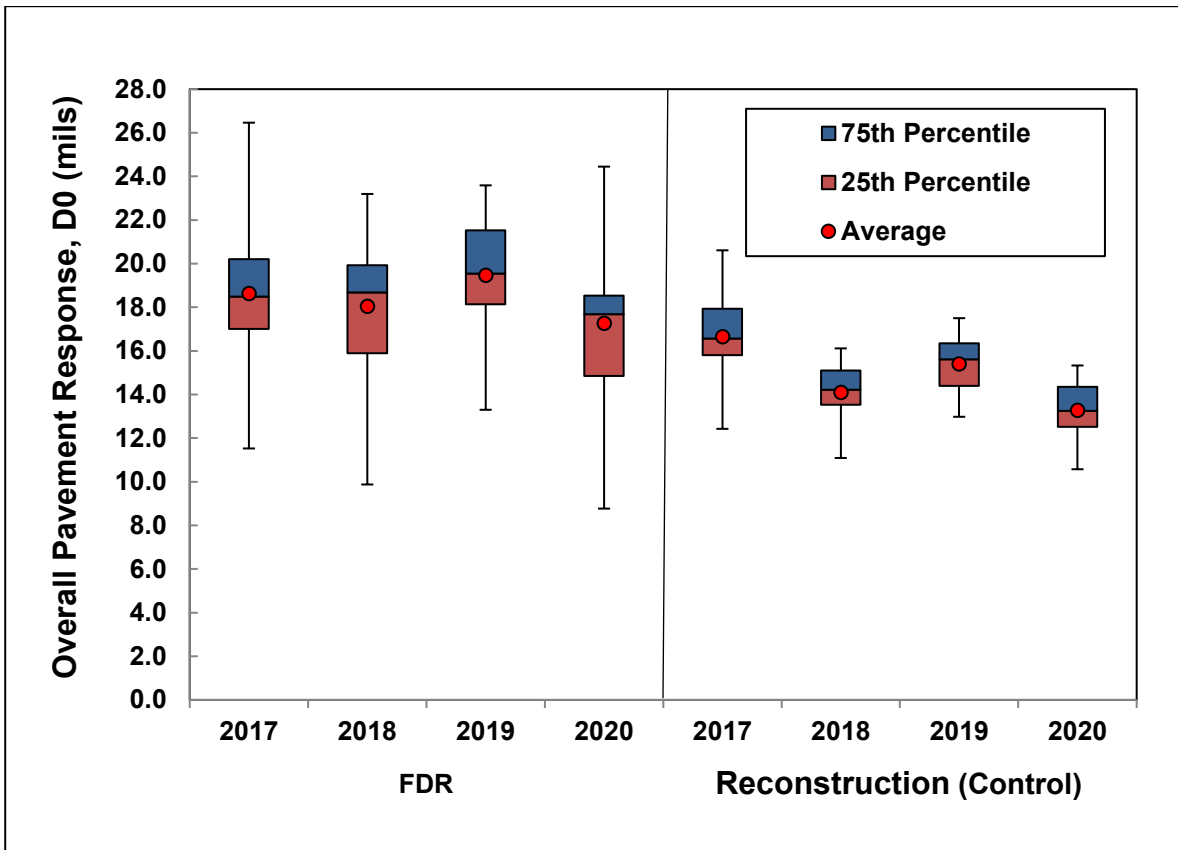


Figure 7 Deflection – Overall Response

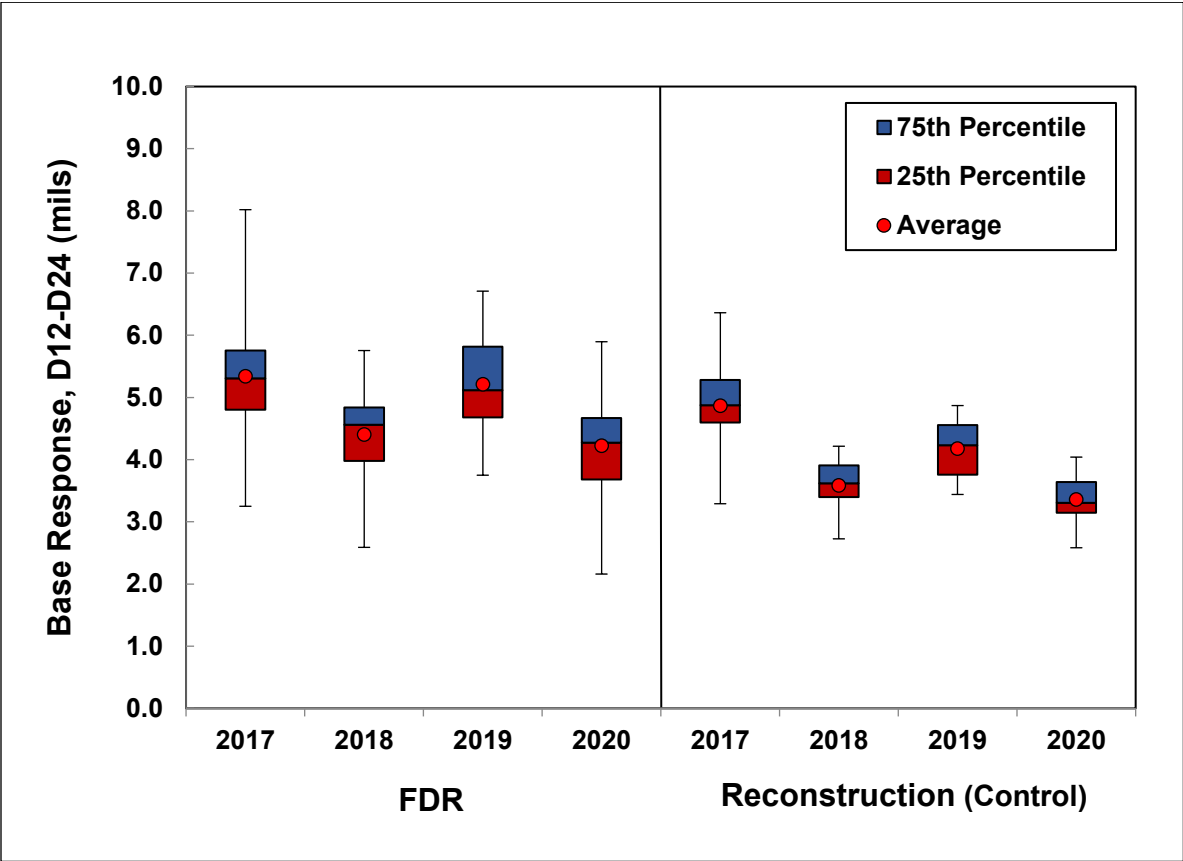


Figure 8 Deflection – Base Response