

High Friction Surface Treatment at I-10 & I-110 Interchange

FDOT District 3 implemented High Friction Surface Treatment (HFST) along with other safety countermeasures at the I-10 & I-110 Interchange Ramps. This document focuses on hydroplane and wet road crashes, comparing the before and after crashes resulting from the installation of HFST on the interchange ramps. Crash analysis is summarized in the table below.



HFST Locations on Ramps

The safety countermeasures include the application of HFST across five ramps as shown in the adjacent figure, installation of guardrails along the outside of the I-10 WB on-ramp (Ramp H), installation of audible edge lines along I-10 WB off/on ramps (Ramp G1, Ramp H), and deployment of advisory speed signs on I-10 WB on-ramp (Ramp H). The project was under construction from April 2022 to October 2022 at a cost of \$2.25 M.

An analysis of 2023 crash data (wet road crashes) revealed significant improvements in safety outcomes following the implementation of these countermeasures. All ramps experienced

substantial reductions in total crashes with a **100% reduction in fatal and serious injury crashes**, demonstrating the effectiveness of the implemented countermeasures in mitigating hydroplaning risks.

Before/After Wet Road Crash Comparison

Ramp	Crashes	Before					After	Percent Reduction
		2019	2020	2021	Total	Average	2023	
Ramp F1** I-10 EB onto I-110 SB	F + SI	1*	0	0	1*	0.3	0	100%
	All	4	5	3	12	4.0	2	50%
Ramp E** I-110 NB onto I-10 EB	F + SI	0	0	0	0	0.0	0	-
	All	8	27	24	59	19.7	0	100%
Ramp B1** I-110 NB onto On-ramp to SR 291	F + SI	0	1	0	1	0.3	0	100%
	All	6	4	1	11	3.7	2	45%
Ramp G1 I-10 WB onto I-110 SB	F + SI	0	0	0	0	0.0	0	-
	All	17	12	6	35	11.7	6	49%
Ramp H I-110 NB onto I-10 WB	F + SI	0	3	0	3	1.0	0	100%
	All	32	44	54	130	43.3	1	98%

Note: * Fatal Crash; ** Ramp with only HFST; F+SI refers to Fatal plus Serious Injury Crashes; Construction in 2022

The I-10 & I-110 Interchange Safety Project exemplifies the active approach adopted by FDOT District 3 in addressing hydroplane crashes to enhance roadway safety. Through the application of safety countermeasures, especially HFST, the project successfully reduced crashes and improved overall safety. The three (3) ramps with only HFST showed a decrease of approximately 85% in total wet road crashes. Ramps H and G1 showed a combined 87% decrease in wet road crashes.