

# **Evaluation of Reclaimed Concrete Aggregate (RCA) as Base Material**

**Experimental Project Interim Report EXP-SR-43**

<b>FDOT Office</b>	<b>State Materials Office</b>
<b>Reported by</b>	<b>Abdenour Nazef, P.E.</b>
<b>District</b>	<b>1</b>
<b>County</b>	<b>Manatee</b>
<b>Project No.</b>	<b>422603-1-58-01</b>
<b>Roadway ID</b>	<b>13020000</b>
<b>State Road</b>	<b>43</b>
<b>US Road</b>	<b>301</b>
<b>Report Date</b>	<b>01/13/21</b>

# Project Description

<b>District</b>	1
<b>County</b>	Manatee
<b>Financial Project</b>	422603-1-58-01
<b>Roadway ID</b>	13020000
<b>State Road No.</b>	43
<b>US Road No.</b>	301
<b>Lanes Tested</b>	L2

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## Objective

The objective of this study is to evaluate the relative long-term performance of Reclaimed Concrete Aggregate (RCA) used as base material compared to the performance of a standard limerock base (control).

## Background

This experimental project is on SR 43/US-301 in Manatee County. Two 0.2-mile test sections were constructed in the Westbound travel lane (L2), one using RCA the other using Limerock as base materials. The experimental sections were part of a 4.1 miles reconstruction project (FIN 422603-1-58-01) completed in February of 2012.

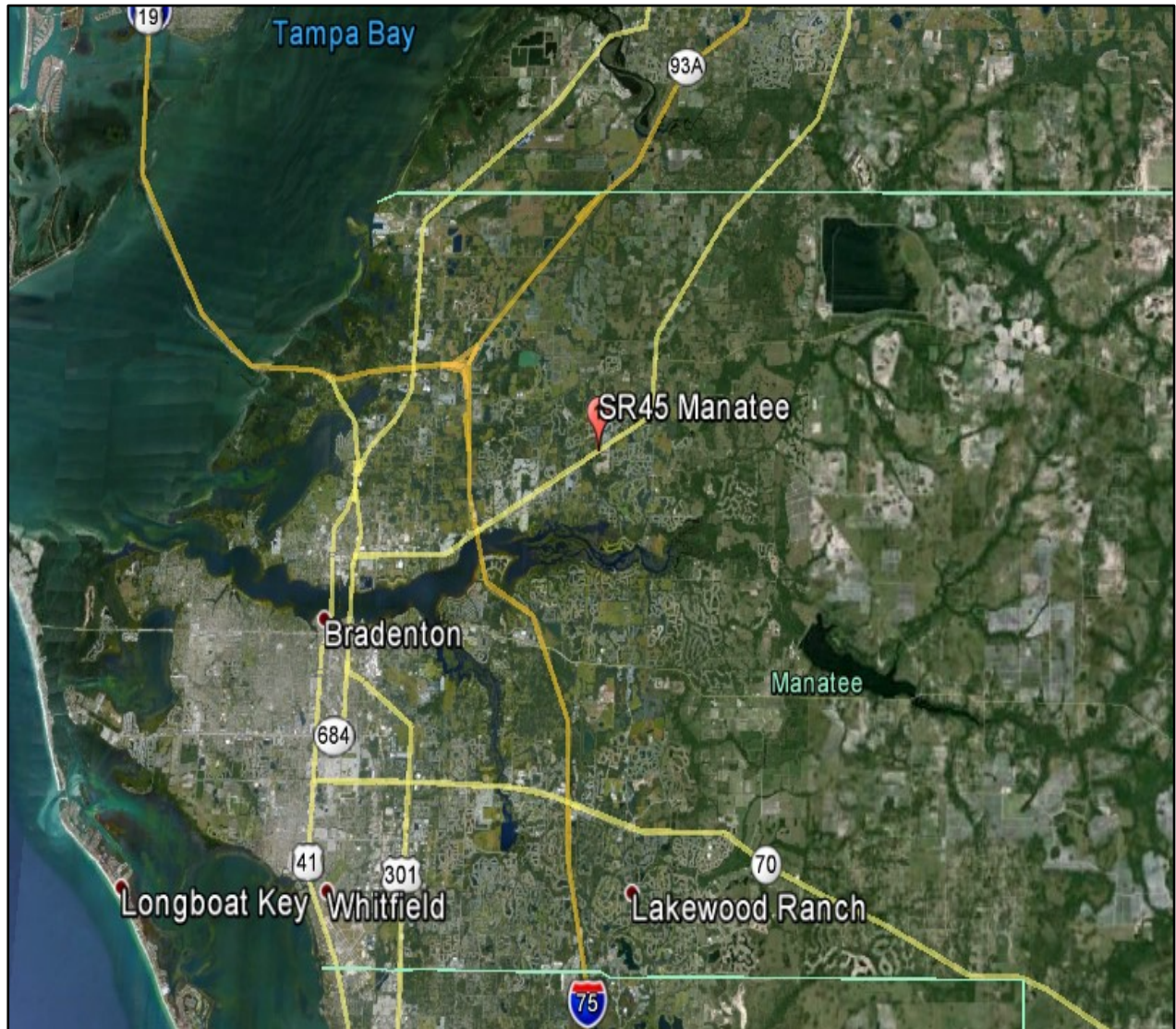
A 2014 intersection improvement project included the realignment of Fort Hamer Road to form a single intersection with 121st Ave E and SR 43A resulted in resurfacing 450 feet of the original limerock section on the north end. The section starting limit was adjusted accordingly from milepost 9.929 to MP 9.844.

## Description

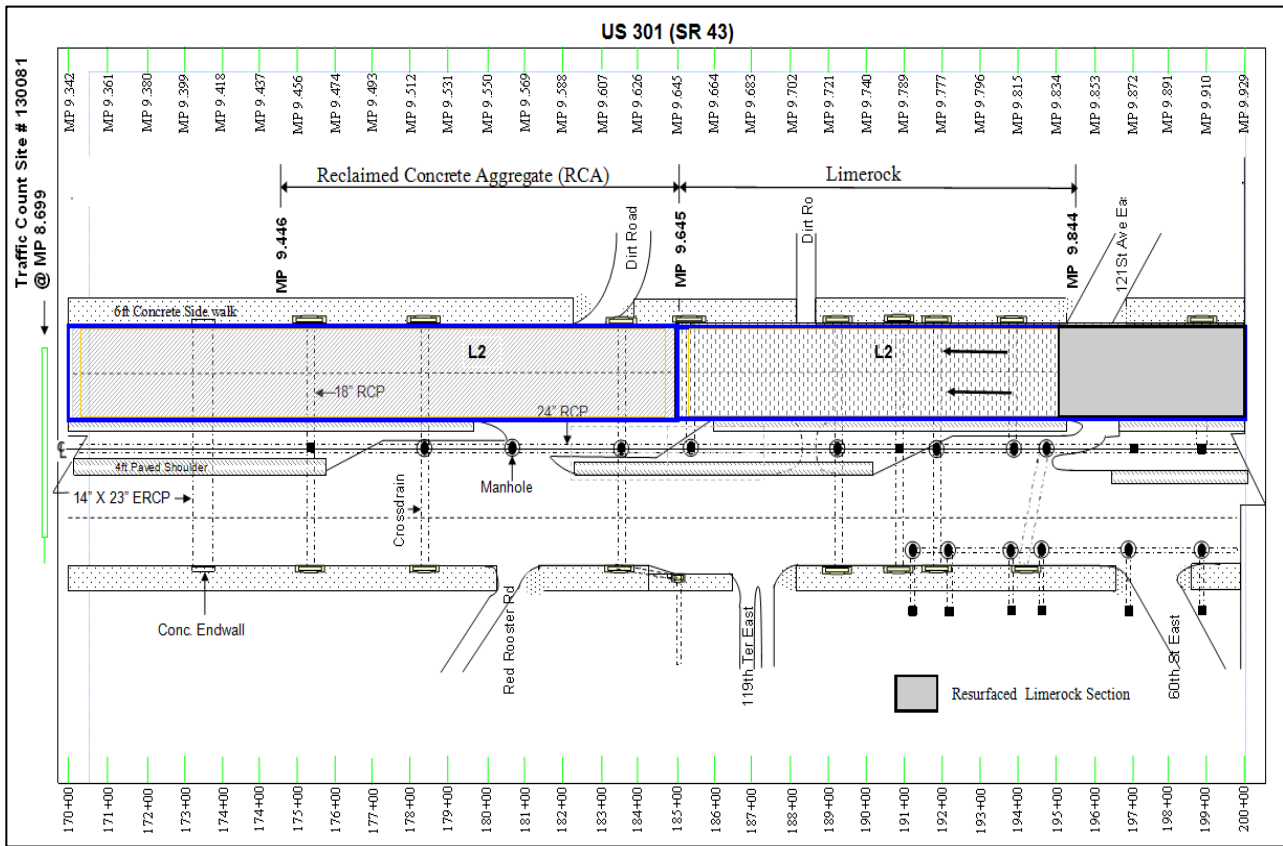
The experimental design called for 12 inches Type B stabilization (LBR 40), 10 inches base, 1.5 inches SP-12.5, 1 inch SP-9.5, and 1 inch FC 9.5. Pavement performance is evaluated in terms of pavement deflection, cracking, rutting, and smoothness. Starting in 2016, performance will be evaluated every two years.

# Project Location

**District** 1  
**County** Manatee  
**Financial Project** 422603-1-58-01  
**Roadway ID** 13020000  
**State Road No.** 43  
**US Road No.** 301  
**Lanes Tested** L2



# Project Layout

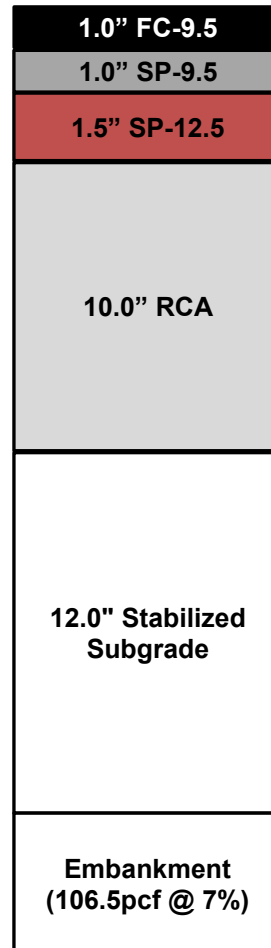


# Thickness

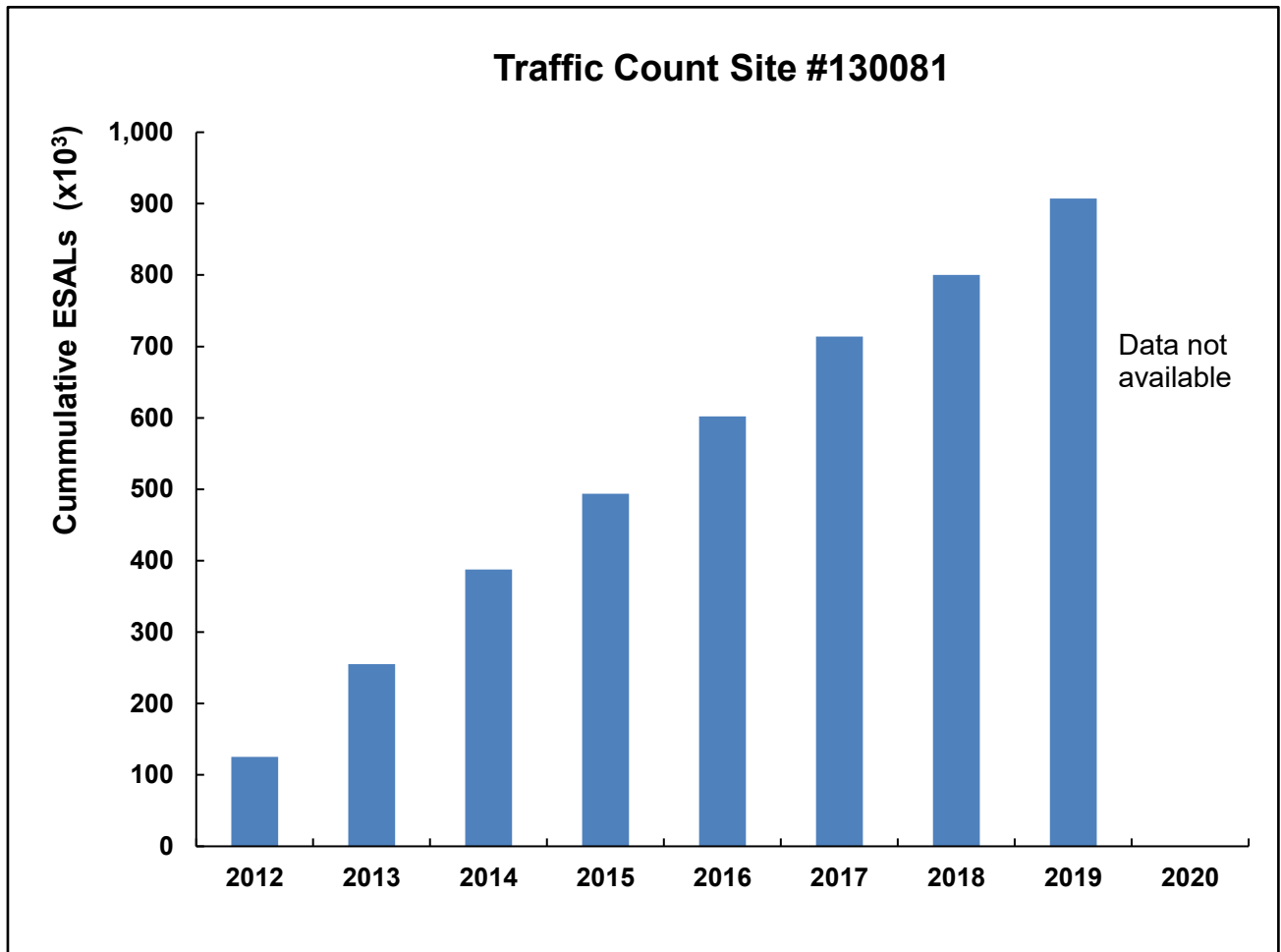
## Limerock



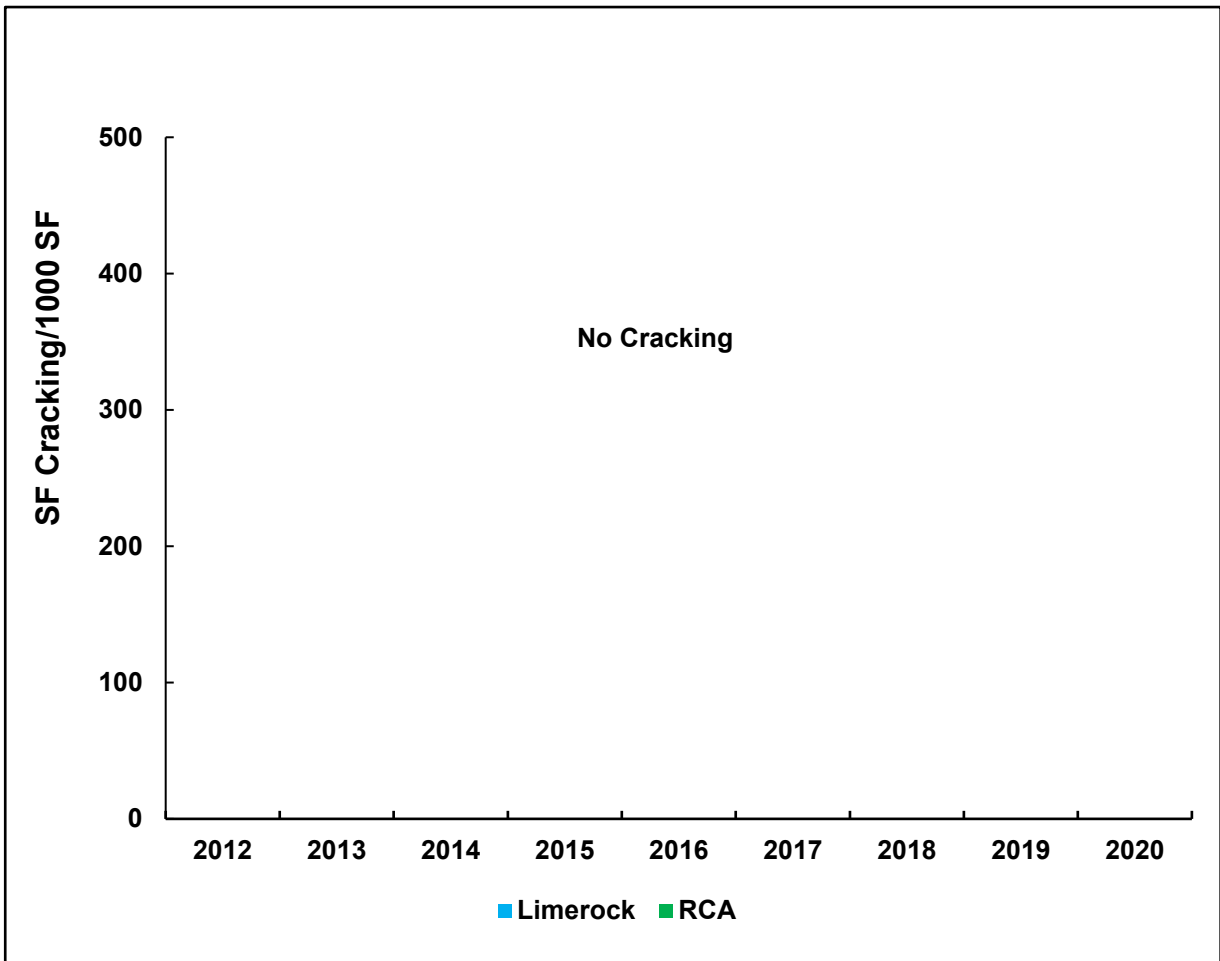
## RCA



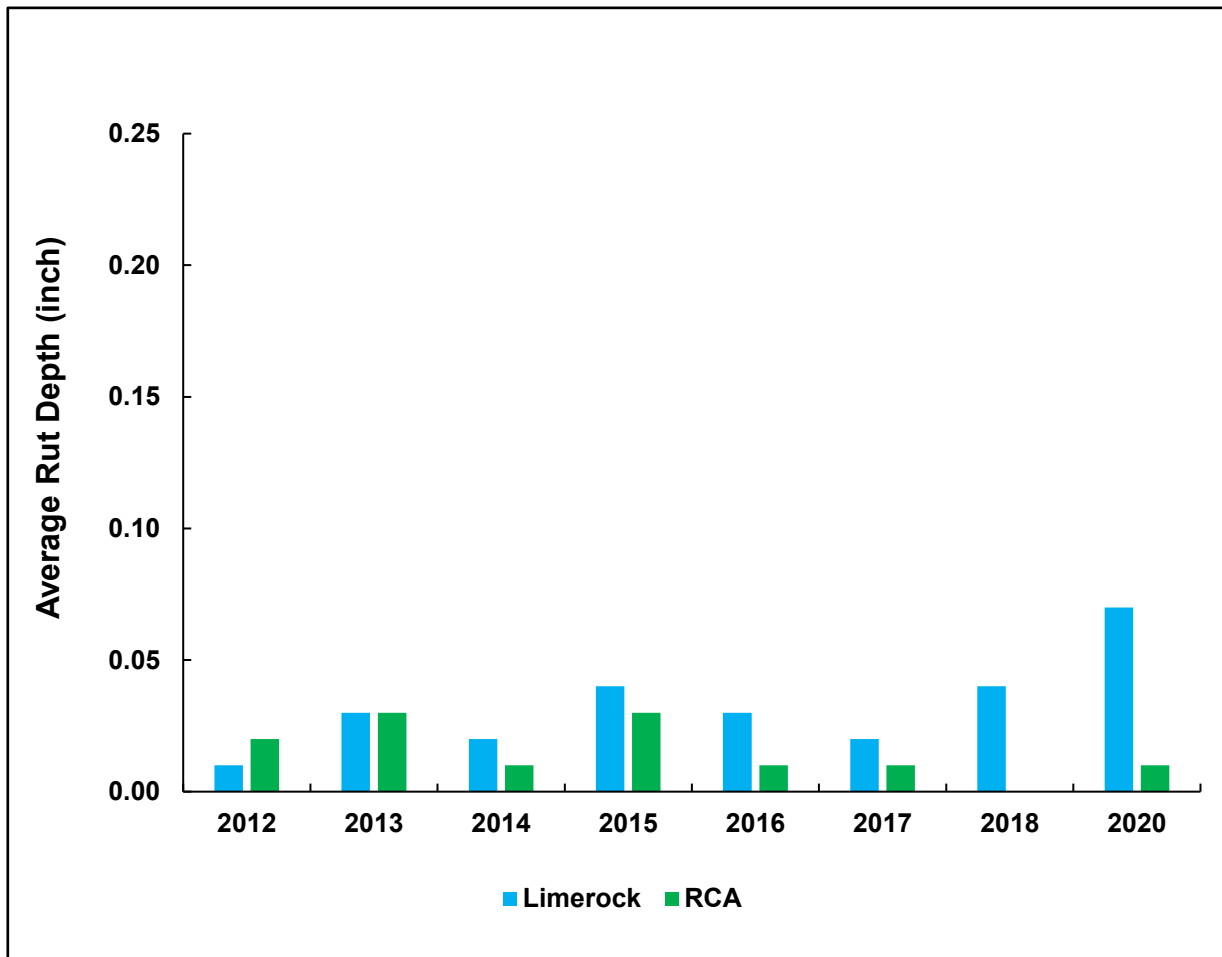
# Traffic



# Cracking

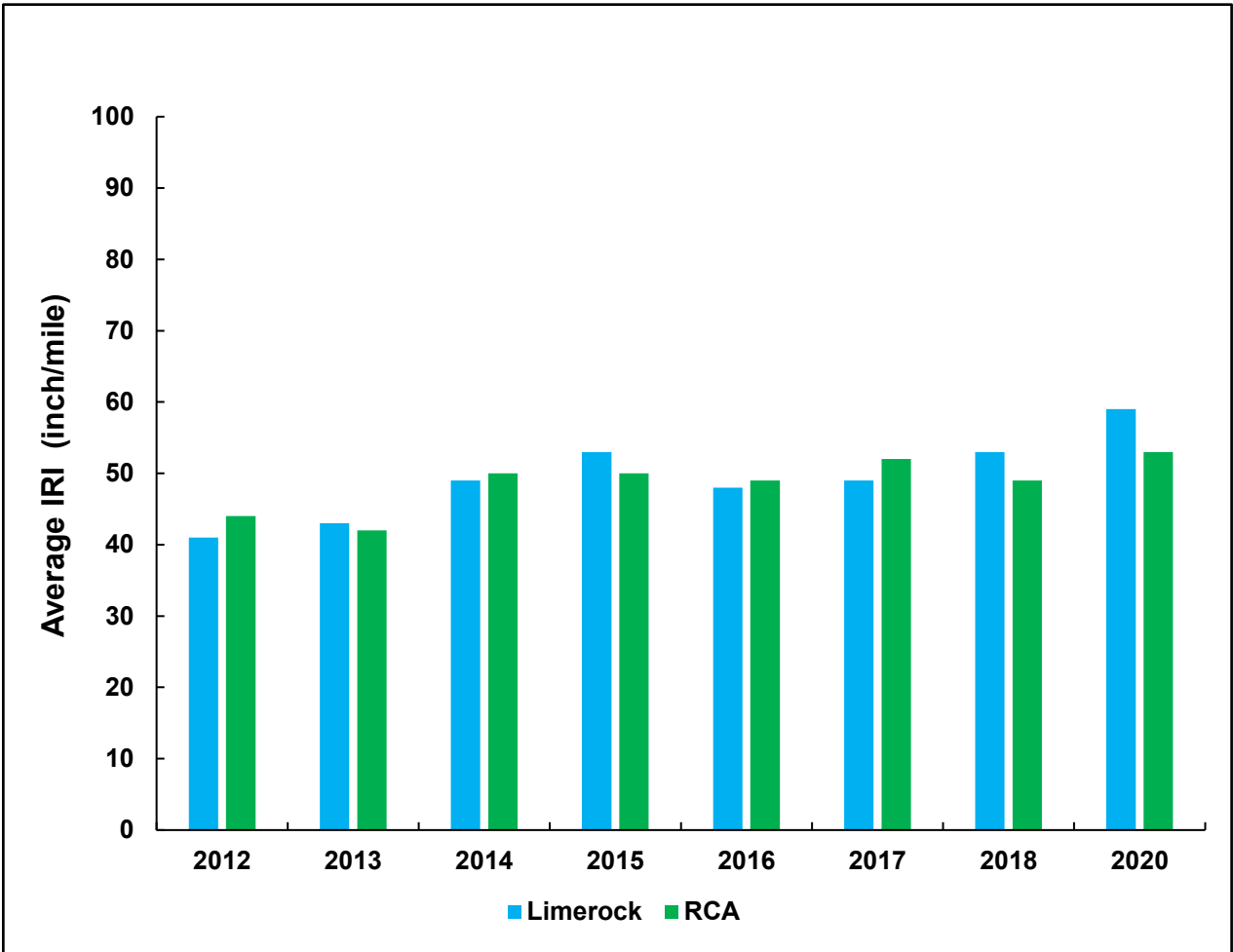


# Rutting



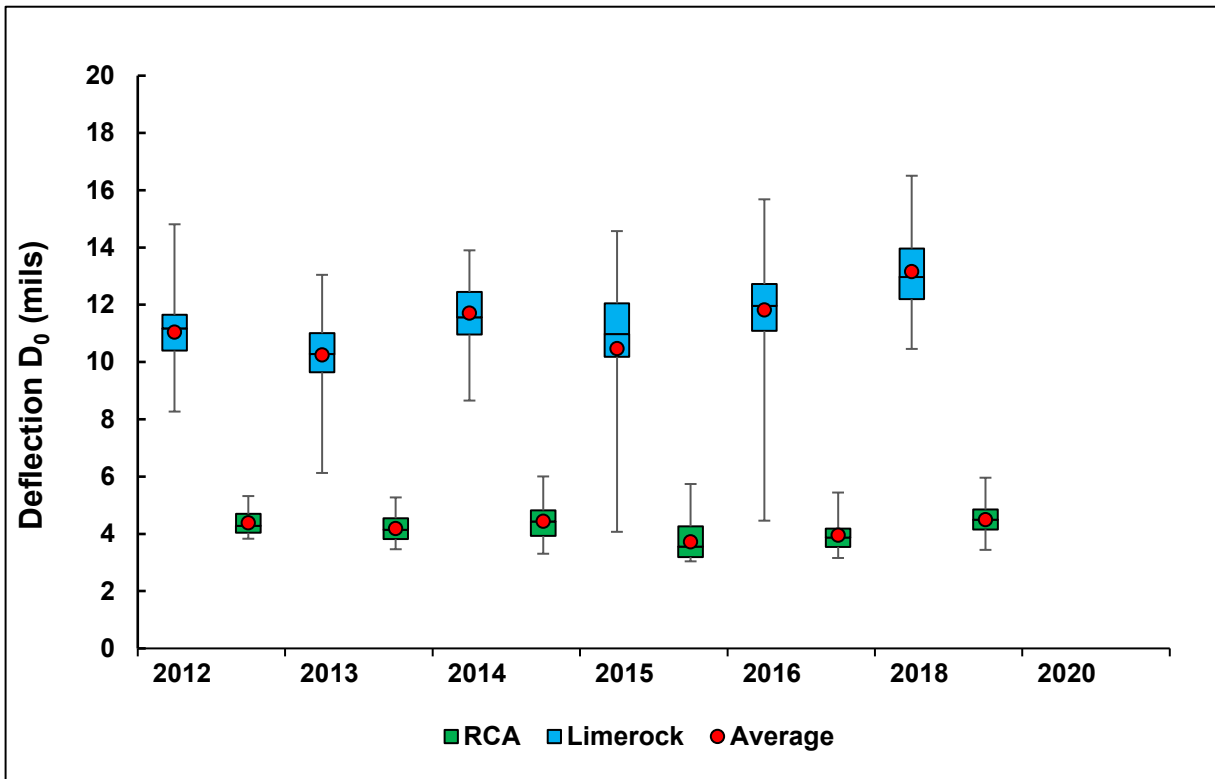


# Smoothness

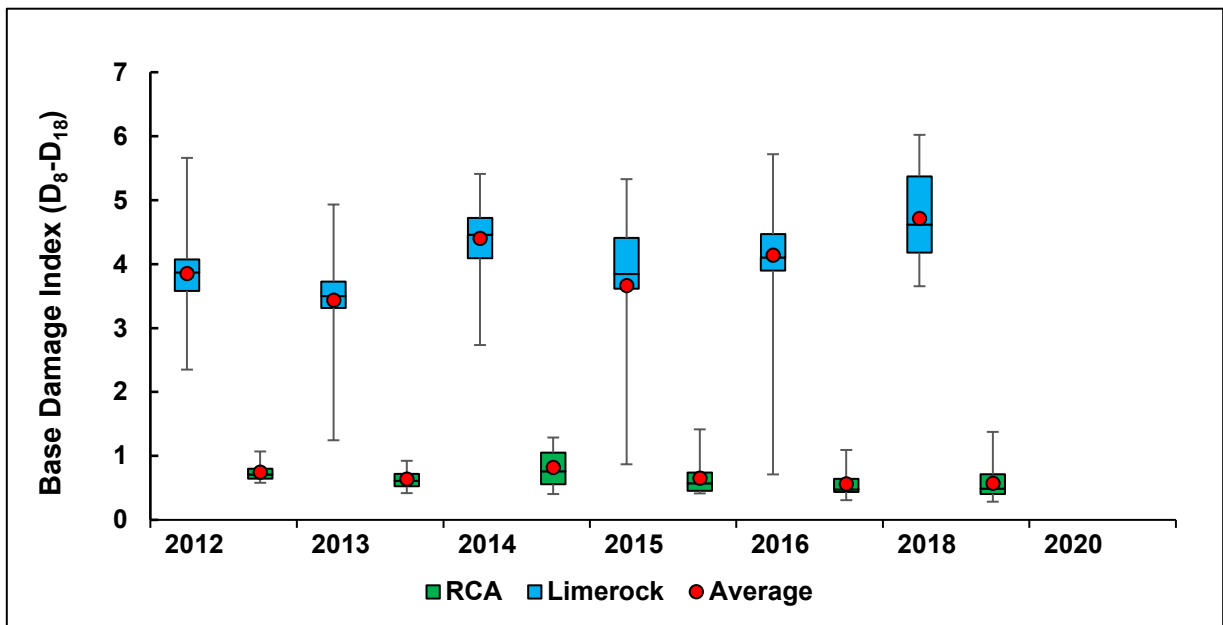


Note: 2020 data was collected with line laser compared to spot laser in previous years

# Deflection



2020 FWD data not available due to lack of MOT funding



2020 FWD data not available due to lack of MOT funding