FDOT and NTPEP Pavement Marking Materials Test Decks

Project Overview

FDOT Office
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About NTPEP

The National Transportation Product Evaluation Program (NTPEP) provides product evaluation and plant inspection services. Product evaluation ensures that products that are commonly used by state Departments of Transportation (DOTs) are tested in accordance with national standards. This collaboration between NTPEP, state DOTs, and product manufacturers reduces duplication of effort by DOTs and provides a single source of testing for manufacturers. To learn more, visit www.ntpep.org.

Project Overview

The primary purpose for pavement marking materials, also known as traffic striping, is delineation of traffic which is critical to motorist safety. Traffic striping, like all paints, will eventually deteriorate. There are several factors that contribute to how quickly this process occurs such as (1) the type of road the striping was used on, (2) the traffic volume on the road, (3) weather conditions and (4) the quality of the product itself. Re-striping a road after pavement markings have lost their effectiveness has a financial cost and can be disruptive to the traveling public. The materials that work best are those that are long-lasting and most effective in helping drivers to stay in their lanes while traveling during the day, nighttime and wet conditions.

In October 2009, FDOT became part of a rotating group of state highway agencies that perform field testing to evaluate the performance of pavement marking materials (PMM) for NTPEP. By varying the location throughout the United States, DOTs can judge how a product might perform in their state based on similar weather conditions. Florida is currently the only test site for the Southern U.S.

FDOT, NTPEP and several product manufacturers install a new set of products roughly every three years following the NTPEP PMM Field Testing Work Plan. Characteristics such as applied thickness and drying time are measured during installation. Based on a defined schedule, department personnel periodically return to the site to test retroreflectivity, daytime color, nighttime color and the durability of the markings. Temporary products are also evaluated based on the ease and thoroughness of removal.

Pavement Marking Materials are normally used to mark longitudinal lines, stop bars, messages and symbols in travel lanes. For testing purposes, products are installed across the lane (transverse) in accordance with the NTPEP Work Plan.

Product Types

The types of products currently being tested include tapes, thermoplastics, paints and two-component materials. Each product type has unique features and benefits. For example, some materials may perform better on either concrete or asphalt. Some types are better suited for creating symbols, such as turn arrows, than for lane striping. Testing the various materials in the same place helps illustrate these differences and allows a direct comparison between products.

Test Deck Locations

Each site that is used for testing is referred to as a test deck. In 2009 and 2012, test decks were started in Polk County on Interstate 4 (I-4). These testing cycles have been completed. The only active sites are in Brevard County on Interstate 95 (I-95). Specific location information is as follows:

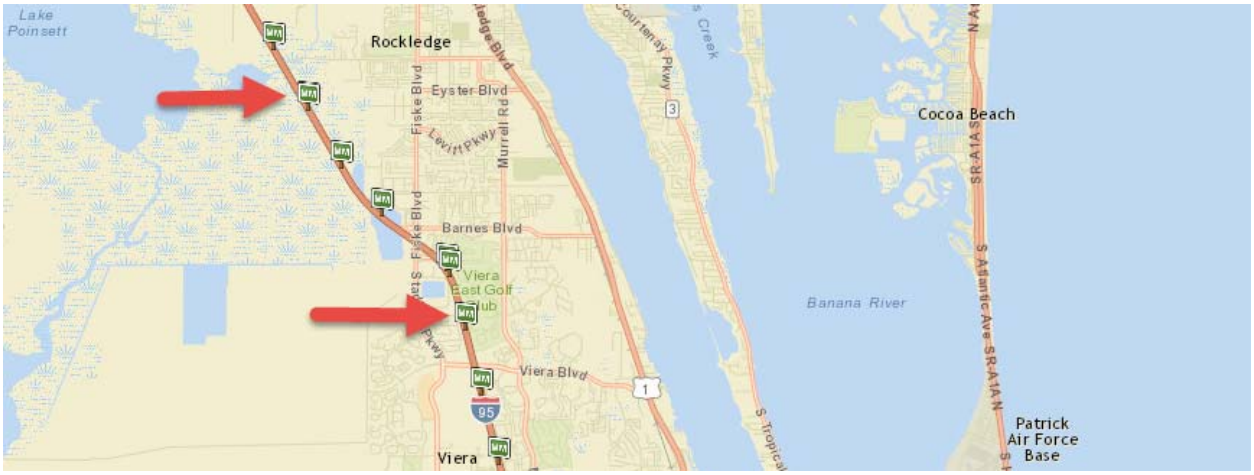
Interstate 4 (District One, Polk County)

2009 – I-4 westbound, Mile Marker 27 to 29, Polk County
2012 – I-4 eastbound, Mile Marker 27 to 29, Polk County

The installation and testing of pavement marking materials on I-4 began in October 2009. The testing for the Interstate 4 sites ended in fall 2015.

Interstate 95 (District Five, Northern Brevard County)

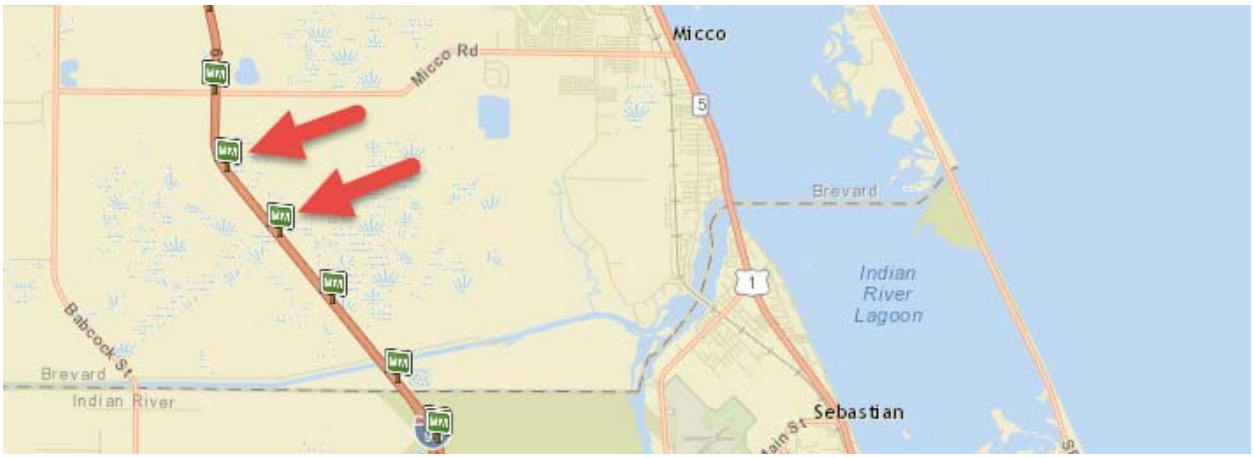
2015 – I-95 northbound, Mile Marker 194 to 198, Brevard County



The installation and testing of pavement marking materials on a concrete section of I-95 began in October 2015. This testing will continue over a period of three years ending in October 2018.

Interstate 95 (District Five, Southern Brevard County)

2016 – I-95 southbound, Mile Marker 162 to 163, Brevard County



The installation and testing of pavement marking materials on an asphalt section of I-95 began in October 2016. This testing will continue over a period of three years ending in October 2019.

Selected sites must meet strict criteria outlined by the NTPEP work plan. Drivers traveling on each test deck are assisting FDOT and other State DOTs with the long-term evaluation of traffic striping products used on interstate highway systems.

Testing Status

Interstate 4 (District One, Polk County)

Year	Direction	Installation	Status
2009	Westbound	42 products	Testing completed in fall 2012
2012	Eastbound	78 products	Testing completed in fall 2015

Interstate 95 (District Five, Northern Brevard County)

Year	Direction	Installation	Status
2015	Northbound	109 products	Testing will be completed in fall 2018

Interstate 95 (District Five, Southern Brevard County)

Year	Direction	Installation	Status
2016	Southbound	73 products	Testing will be completed in fall 2019

Long-Term Benefits

FDOT specifications have minimum performance standards for pavement marking materials. Manufacturers must demonstrate that their product can meet these standards before the product is approved for use on state highways. FDOT approves standard traffic paints and temporary tapes based on the results of this project testing. The Department's Product Evaluation Office maintains an Approved Product List (APL) that identifies these products.

An additional outcome of this project is the ability to determine if the transverse testing format can be used for the acceptance of more product types. Testing in longitudinal (skip) lines requires a half-mile section per product. Transverse testing allows for approximately 100 products in the space it takes to test a single product installed as skip lines. The grouping of products in a relatively small area creates a more consistent test for all products. This format has proven to be feasible for paints and temporary tapes. The department is reviewing results as they relate to thermoplastics, permanent tapes and two-component materials.