



Project Number

BDV31-977-75

Project Managers

Jon Heller

FDOT Maintenance Office

Principal Investigator

Andrew Koeser

University of Florida

Florida Department of Transportation Research

Clear Recovery Zone Vegetation Requirements, and Review of Current Tree Pruning and Maintenance Practices for Landscape, Urban and Rural Areas within the Right of Way

October 2020

Current Situation

With over 100 million tourists visiting Florida every year, the Florida Department of Transportation (FDOT) recognizes that Florida's roadways are a major part of the visitor experience, including roadways' efficiency, quality, and beauty. Roadway plantings contribute more than beauty, however. They are critical to preventing erosion and maintaining the integrity of the roadway. They also absorb carbon dioxide and reduce driver speed, encouraging safer driving in general. With such a significant investment in plants along thousands of miles of roadway, understanding how installation and management techniques affect the long-term survival of plants is important.

Research Objectives

University of Florida researchers assessed the establishment and health of FDOT plantings installed along Florida's highways between 2011 and 2016 to gain insights into trees' responses to varying site conditions and management techniques.

Project Activities

The researchers conducted a review of the extensive literature about roadside plantings and their evaluation. Studies of this type in the southeastern U.S. are fewer as are studies of roadside plantings of palms, which are frequently used in Florida. Therefore, this project offered a valuable addition to the literature.

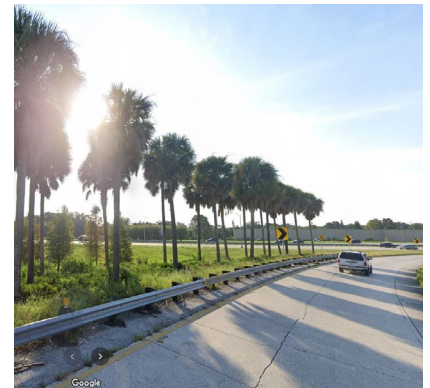
During summer and early fall of 2017, the researchers evaluated trees at 21 planting projects across seven FDOT districts. Statistics were compiled on mulching, staking, estimated rooting area, and damage to trees from lawn care machinery. District 6 (Miami) was excluded because of tree losses due to Hurricane Irma in September 2017. Palms in the species *Phoenix* were also excluded because of the losses from lethal bronzing disease. Planting project areas were randomly chosen from those installed between July 2012 and October 2015. Single installations could have several hundred trees planted along every side of an interchange or FDOT property; therefore, one contiguous section of an interchange or site was selected at random for inventory.

Among other findings, the researchers found that in-ground irrigation was significantly linked to higher assessed visual conditions, which can be a predictor of long-term health. Immediate survival rates, however, were generally the same for plantings irrigated by water truck (with the exception of planted Sabal palmetto). Mowing damage was not as significant as witnessed in other studies. The researchers also developed an efficient, repeatable, and peer-reviewed means of assessing the health of palms for use in FDOT inspections, including a completely updated palm maintenance guide. Five face-to-face technology transfer events were conducted statewide.

Project Benefits

The Florida-specific results of this project can lead to better establishment and maintenance of roadside tree plantings and further safeguard this valuable investment in Florida roadways.

For more information, please see www.fdot.gov/research/.



Roadside trees make Florida's roads safer and more beautiful.