



## Project Number

BDV31-977-142

## Project Manager

Jeremy Dilmore

FDOT Traffic Engineering and  
Operations Office

## Principal Investigator

Siva Srinivasan

University of Florida

# Florida Department of Transportation Research Road Ranger Program for Arterials

August 2022

## Current Situation

From a personal view, a traffic slowdown may mean inconvenience, late arrival, or even low gas. From a system perspective, slowdowns are costly, with delayed deliveries, millions of gallons of gas wasted by idling vehicles, and tons of additional greenhouse gases and pollutants. More importantly, slowdowns can induce secondary crashes caused by incautious drivers. Not only do these crashes put drivers in danger, they also regularly kill or injure emergency workers and road workers. In 2000, in response to the increasing costs of traffic slowdowns, the Florida Department of Transportation (FDOT) instituted the Road Rangers Service Patrol, which actively patrols major highways to detect and respond to crashes, stranded drivers, road debris, etc. and assist at incident sites. Studies have shown the success of this program in clearing crash sites more quickly, reducing slowdowns, and expediting emergency services response. Even for situations as simple as drivers running out of gas or experiencing a vehicle breakdown, the Road Rangers can help get drivers on their way and reduce the dangers of being stranded.



A Road Ranger assists at a crash site.

## Research Objectives

University of Florida researchers examined the possibility of extending the Road Rangers program from only limited access highways to major urban arterials in the Orlando area.

## Project Activities

The study area was a section of central Orlando, with one part north of W. Colonial (SR-50) to SR-436 and SR-434, bounded by US-441 (west) to US-17 (east), and another part south of W. Colonial (SR-50) to Sand Lake Rd (SR-482), bounded by Kirkman Rd (CR-435; west) to US-441 and I-4 (east). In the study analysis, only incidents that occurred between 6 a.m. and 10 p.m. on weekdays were considered because currently, Road Ranger service patrols usually operate during daytime hours only. Segments of I-4, the East-West Expressway, and Florida's Turnpike within the study area were not included because they are already served by Road Rangers.

A spatiotemporal analysis of crash frequencies and clearance times identified the southern part of the study area as the primary candidate for the service patrol program. Numerical simulations of a staged and centrally dispatched service program with one service vehicle indicated that the service vehicle could respond to over 70% of crashes on average, with an average clearance time per crash of 30–40 minutes. This is an average reduction of 36–45 minutes in clearance time. The service vehicle would be occupied for about 3–4 hours per day, or about one half of a shift. This indicates that additional service vehicles are perhaps not necessary at this time.

Based on the project results, a staged and centrally dispatched service patrol of one vehicle will be deployed as a pilot in the southern part of the study area. The first week or two of operations will be observed carefully for unanticipated issues. Data collected after about 18 months of deployment will be used to re-evaluate the program, make suitable modifications, and recommend the best approaches for deploying service patrols on other Florida arterials.

## Project Benefits

The findings of this report can begin to bring the Road Rangers program and its benefits to a wider range of roadways in Florida, with reductions in crashes, faster incident response times, and less time lost to traffic slowdowns.

For more information, please see [www.fdot.gov/research/](http://www.fdot.gov/research/).