

# IMPLEMENTING INTEGRATED CORRIDOR MANAGEMENT BY MESHING FREEWAY OPERATIONS WITH ARTERIAL OPERATIONS

By Florida Department of Transportation District 5 Regional Traffic Management Center

## IN THIS CASE STUDY YOU WILL LEARN:

1. How Florida Department of Transportation (FDOT) District 5 successfully implemented Integrated Corridor Management (ICM) to accommodate extreme growth in the region's population and tourism.
2. The ICM program is integrated with Florida's traveler information platforms.
3. How lessons learned from Hurricane Irma led to the use of the Emergency Shoulder Use Plan.

## BACKGROUND

Central Florida has faced a multitude of transportation challenges. Orlando was the second fastest-growing city in the United States in 2017 and according to Visit Orlando, 72 million visitors traveled to Orlando, breaking the record for most visitors to a single U.S. destination. To improve the transportation system to accommodate this growth and tourism, experts began exploring viable options to maximize existing resources while still prioritizing safety, including implementing Integrated Corridor Management (ICM) at the District 5 Regional Traffic Management Center (RTMC).

**The purpose of the D5 ICM program is to improve travel time efficiency, travel time reliability, and to perform incident management throughout the network by meshing freeway operations with arterial operations.**

## TSMO DEPLOYMENT AND USE OF TECHNOLOGY

The ICM program works to build on successes and searches for new and innovative ways to improve traffic in Central Florida. Timing plans and diversion routes have proven to be effective at maximizing existing resources. Arterial operations perfectly compliment freeway operations by utilizing Advanced Traffic Management Systems (ATMS) platforms to maximize system efficiency through notifications and coordination with



local agencies. The ICM Signal Timing Engineer at the District 5 RTMC worked extensively with the city of Orlando to re-enable vehicle detection so data could be pulled and utilized again. This allowed data such as travel times, travel time reliability, transit and signal priority and emergency vehicle preemption to be consistently gathered and tracked over time to identify trends and to learn which corridors require adjustments.

Further adding to the complexity of the ICM program, its success depended in part on its ability to effectively utilize and implement state-of-the-art technology. Central Florida has one of the largest Connected Vehicle (CV) deployments in the United States, and is one of only 10 recognized Autonomous Vehicle Testing Groups. Central Florida also has the second largest Smart Signals (Automatic Traffic Signal Performance Measures and more) deployment in the country.

## CASE STUDY: IMPLEMENTING INTEGRATED CORRIDOR MANAGEMENT BY MESHING FREEWAY OPERATIONS WITH ARTERIAL OPERATIONS

### COMMUNICATIONS PLANNING AND PARTNERSHIPS

The ICM program communicates with the public through its website ([www.cfsmartroads.com](http://www.cfsmartroads.com)) and by posting urgent updates via the Florida 511 Traveler Information System's floodgates ([www.fl511.com](http://www.fl511.com)) and Dynamic Message Signs (DMS). FDOT also coordinates closely with WAZE, a community-based GPS, map and traffic navigation app to provide its users with accurate and timely information utilizing FDOT resources.

**There is a high priority placed on creating more partnerships in this area. Developing a partnership with LYNX, a Central Florida public transportation provider, is in the works to report on-time delay information and improve communication.**

The ICM program also coordinates with the I-4 Ultimate project and provides Maintenance, Operations and Transportation (MOT) in support of it. Ramp metering is currently in development as a part of ICM and the I-4 Ultimate project and is expected to reduce crashes by 15-40%.

### OUTCOME, BENEFIT AND LEARNINGS

As of this writing:

- The District 5 ICM program has an estimated benefit-to-cost ratio of 5-10:1.
- Thanks to effective traffic signal control, emissions have been reduced by 3-22% and variable speed displays have reduced CO2 emissions by 10-20%.
- Dynamic Shoulder Running reduces travel times by up to 25% while proving to have no adverse effect on safety.
- Transit Signal Priority improves bus times by 2-15% with minimal impact to side streets, and Adaptive Signal Control reduces overall delays by 4-40%.

FDOT chose to activate their Emergency Shoulder Use Plan as an example of lessons learned from Hurricane Irma, which ravaged Florida in September 2017, displaying the importance of incident management as hundreds of thousands of Floridians evacuated ahead of the disaster.

The program also provides better mobility to the traveling public by providing alternate solutions in the event of freeway congestion or closures, including multi-modal alternatives.



### FURTHER INFORMATION

Central Florida Smart Roads Website: <http://www.cfsmartroads.com>

Florida 511 Traveler Information System Website: <https://fl511.com>

NOCoe Knowledge Center: <https://transportationops.org/knowledge-center>