ITS Network and Devices Support Safe, Efficient Traffic Flow

Operators at the Florida Department of Transportation (FDOT) District 5’s new Regional Transportation Management Center (RTMC) use state-of-the-art technology to monitor and manage traffic throughout the nine-county district.

The RTMC’s four massive video walls provide 84 monitors showing current conditions on freeways and other major roadways. Forty-two computer workstations process and display data about traffic speeds and volume, crash locations, Road Ranger vehicles, and more.

But from where does all of that information come?

FDOT has built and manages the Intelligent Transportation Systems (ITS) network to enable it to collect and analyze real-time traffic data. The backbone of the ITS network consists of miles of fiber optic cable buried along the state’s roads, which connects a vast array of roadside devices to the RTMC. Those roadside devices include:

- **Video cameras**: FDOT District 5 and partner agencies have more than 1,000 video cameras installed along freeways and state highways that feed high-resolution video to RTMC operators. The video is available to the public on www.FL511.com, and many TV news stations use the cameras for their on-air traffic reports.

- **Traffic sensors**: More than 391 sensors use microwave or radar technology to determine the current speed and volume of traffic on monitored roadways. This helps detect slowdowns that can indicate incidents.
- **Control boxes:** Protective boxes mounted on or near ITS equipment poles house the communication technology that keeps ITS devices connected, plus battery backups to power them during outages.

- **Dynamic message signs:** Overhead digital signs display travel times and can warn of incidents ahead. They also communicate safety messages and alerts, including AMBER, Silver and Blue alerts. All of these messages originate in the RTMC.

With the advent of connected vehicles, FDOT will soon deploy devices to communicate with passing cars, trucks and buses. These devices will connect to the ITS network and send data to and receive data from the RTMC.

A single roadside pole can support multiple ITS devices, including a CCTV camera, traffic sensors, and a control box. There is also room to mount equipment to communicate with connected vehicles.