3. System Design

3.1 Overview

The RTMC is the central hub for a number of systems both physical and technological. I-4, I-95, and I-75, as well as the CFX toll roads, and various arterial highways comprise the physical system, while SunGuide, ITS systems, and the multitude of devices along the physical system feeding information to the RTMC comprise a technological network.

3.2 SunGuide and other Operating Software

The RTMC uses SunGuide as the primary interface between operators and the network. SunGuide is comprised of multiple subsystems which operate different device groups or systems. For example, the CCTV subsystem provides the operator with the ability to interface with camera devices, while the TVT subsystem compiles and analyzes detector information and computes travel times for roadways.

CFX toll roads have also migrated their DMS, CCTV and TVT subsystems to a unique version of SunGuide. While CFX SunGuide provides access to view and PTZ their CCTV, they continue to maintain secondary software that provides the same functionality, Cameleon Client. Cameleon Client is only available on the CFX workstations located at Operator 4, Operator 5, and the RTMC Manager Desk.

3.3 Interstate Highways

The interstate highways covered by the RTMC provide the bulk of incidents which the RTMC will encounter during daily operations. I-4, I-95, and I-75 are all covered in some part by the RTMC, and they are major avenues of commerce. For this reason, FDOT has invested
heavily into intelligent transportation systems on these roadways, to mitigate the effects of traffic.

On Interstate 4 and Interstate 95, detectors can be found approximately 1/2 mile apart. The data collected is used to calculate travel times, and provide RTMC operators with speed, volume, and occupancy data for any given segment of interstate. There are two types of detectors currently in use, those which are cut into the ground, magnetic loop detectors, and those which are posted on the side of the road, known as radar detectors (Wavetronics).

Cameras along the interstate highways are the primary means of monitoring active incidents and events. These cameras have the ability to pan, tilt, and zoom, making them incredibly powerful tools in incident detection and confirmation.

DMS on interstate highways are placed strategically as to allow pertinent information to reach motorists, information ranges from travel times to road closures, and even adverse weather conditions.

3.4 Toll Road Systems

Central Florida has one of the largest networks of toll roads in the nation. Florida's Turnpike (SR-91) passes directly through Central Florida, and even intersects important roadways in this District. However, the RTMC is only responsible for incidents on those toll roads under the jurisdiction of the Central Florida Expressway Authority (CFX).

Incidents on Florida’s Turnpike (SR-91) and toll roads outside of Orange County come under the jurisdiction of the Turnpike TMC. Frequent communication with Turnpike TMC regarding major incidents on these networks is necessary to facilitate proper incident management.

3.5 Arterial Highways

Arterial highways are major thoroughfares which are not limited access. While they carry large amounts of vehicular traffic, they are also traveled by pedestrians and often have businesses and residences alongside the right of way. Travel times on these
roadways are calculated by electronic toll tags, when a vehicle passes through a segment, the time between reading devices is calculated and a travel time computed.

Arterial highways which fall under the jurisdiction of the RTMC present unique challenges in incident management because information is typically less complete (regarding directions and lane blockage) and there is often no way to verify with devices.

It is the responsibility of the each operator to monitor the Florida Highway Patrol live crash report website for incidents on arterial highways. If information is limited, the operator should kindly ask a dispatcher to update the RTMC when a trooper arrives on scene. Some crashes may be handled by local police or sheriff agencies, if this is the case, the operator should find the appropriate contact information for that agency in the workstation handbook. Communication with these local law enforcement agencies will allow us to provide better information to the traveling public via our 511 system.

Arterial highways are served by camera devices at major intersections and detour signs on typical detour routes. These devices provide a great deal of support for major incidents both on arterial and interstate highways. For example, a major incident on an interstate may require a detour onto arterial highways, the use of detour signs helps motorists follow the appropriate detour.