

I-595 Express – A NEW ITS EXPERIENCE



2010 TRANSPO

Project Overview and Current Status

- 5 Year Construction Period
- *Concessionaire operates ITS Devices from FDOT District 4 TMC*
- During Construction Period, *Interim TMS (ITMS)* operational
- ITMS Two phases:
 - I. Operate existing field devices until construction affects fiber network

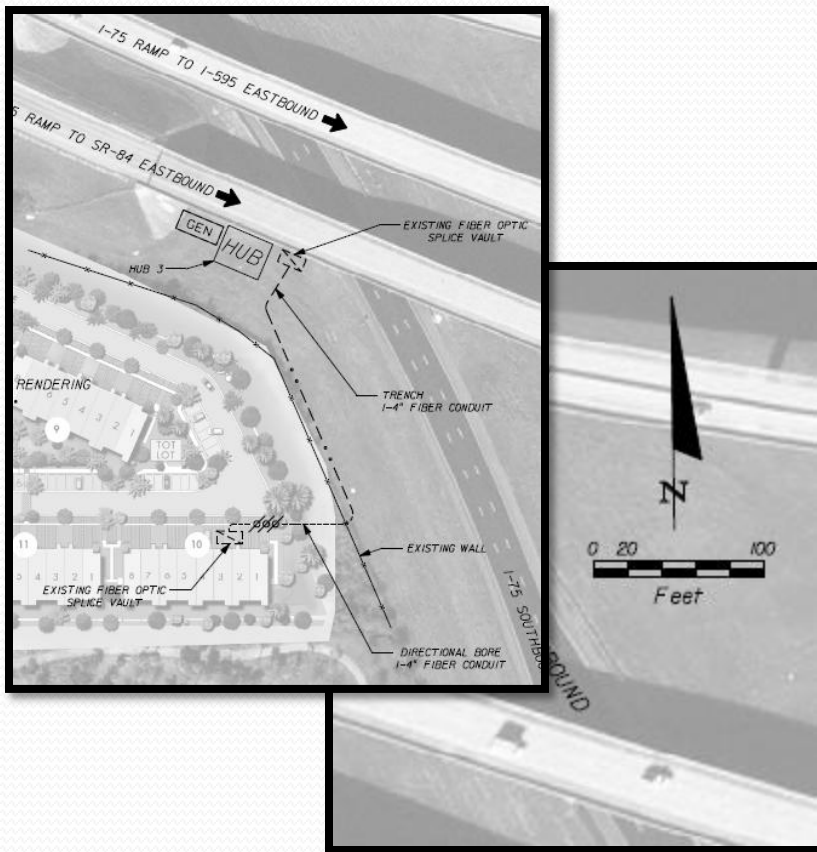


Project Overview and Current Status

- II. Operate mobile trailer wireless network until Substantial Completion
- 26 ITMS Trailers currently in operation (4 located at Florida's Turnpike)
- 5 Concrete poles installed for wireless communication to ITMS trailers



Design Process



- Corridor Master Plan submitted in June 09
- 90% Permanent ITS Design Finalized
- ITS Electrical System and Emergency Power System
- Fiber Optic Locate System

Permanent ITS Subsystems

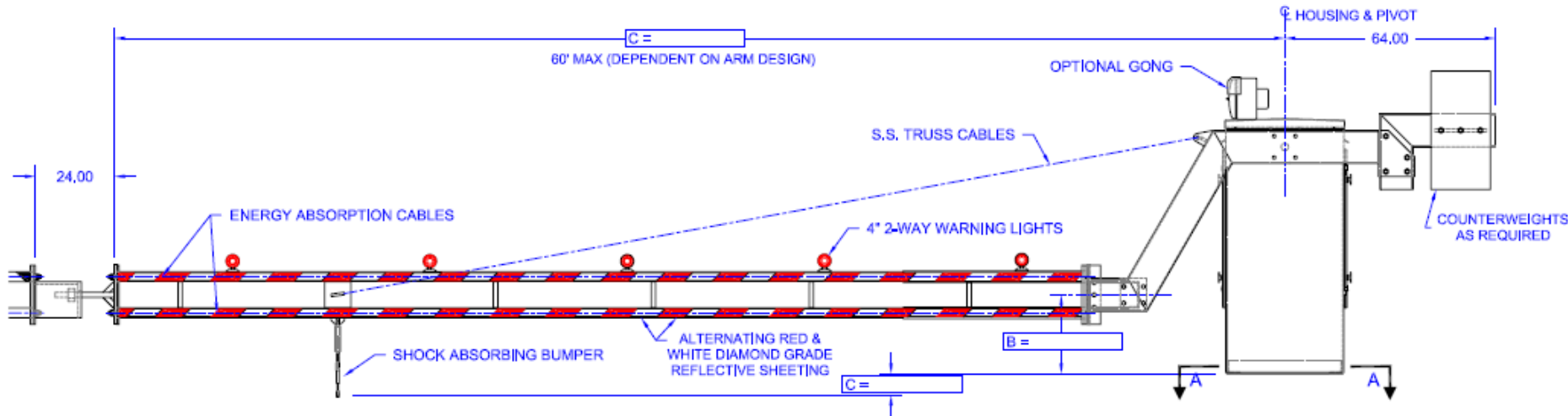
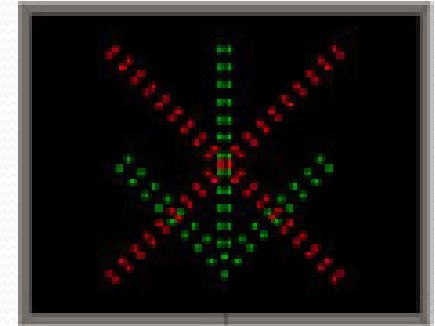
- 52 CCTV Cameras
 - Spaced for freeway and managed lanes coverage
 - Supplemented with additional CCTV cameras for Changeable Message Sign (CMS) and Dynamic Message Signs (DMS) message confirmation
- 93 Microwave Vehicle Detector Devices
 - Minimum Half Mile Spacing
 - Coverage for both mainline directions and bi-directional managed lanes
- 8 Freeway DMS / 7 Arterial DMS (SR 84)
 - Located at key decision points
 - Ensure proper viewing
 - Ability for drivers to make a decision and safety act
- 2 HAR Transmitters with 6 HAR Beacon Signs
- 35 CMS Panels for Express Lanes Status and Toll Information

Permanent ITS Subsystems

- 3 Communication HUB Buildings
 - Connection to I-75, I-95 and Florida's Turnpike
 - Two Room Buildings (FDOT and I-595 Express)
- 1 Toll Gantry and 1 Toll Communication Building
 - Signature Gantry

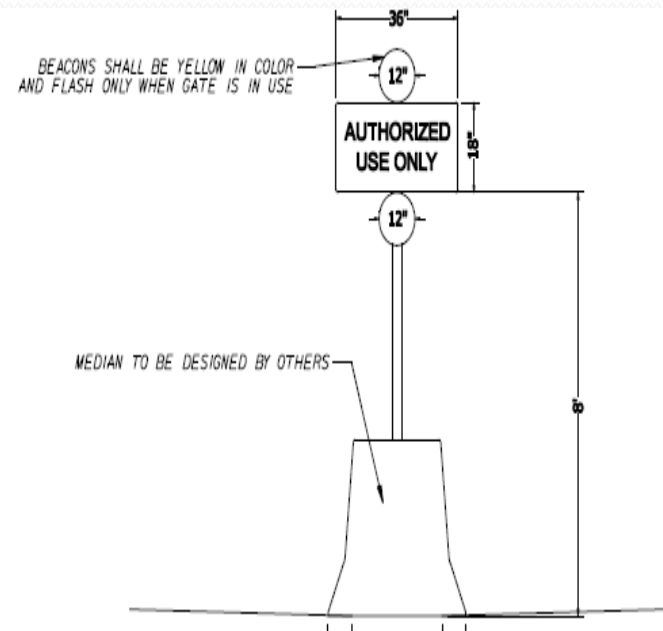
Permanent ITS Subsystems – Express Lane Access Control Subsystem

- Express Lane Access Control Subsystem
 - 35 Access Control Warning Gates
 - 5 Access Control Barrier Gates
 - 7 Lane Control Signal Sites



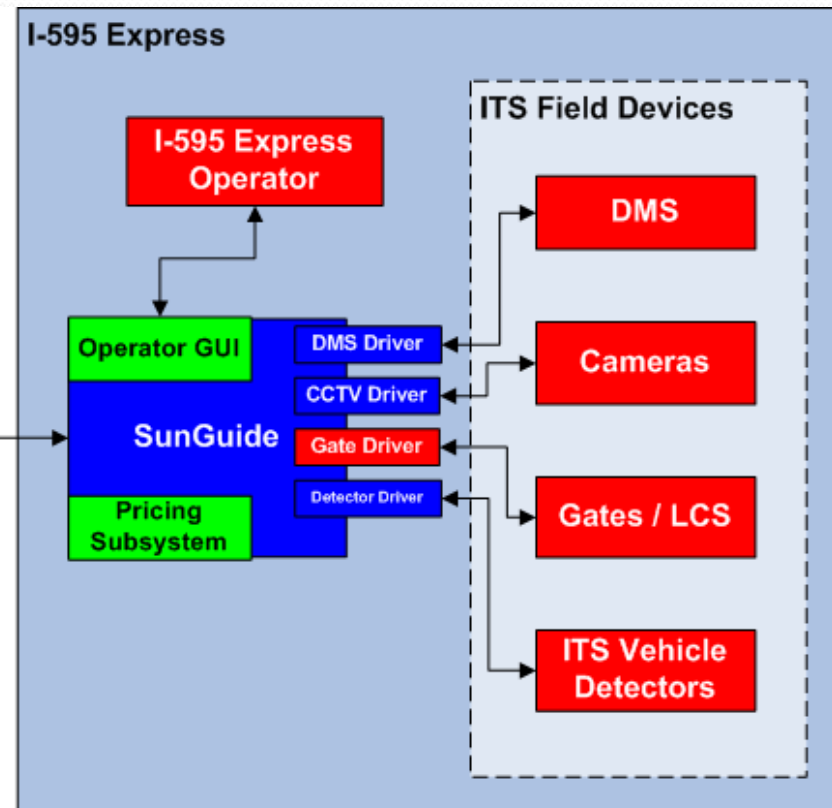
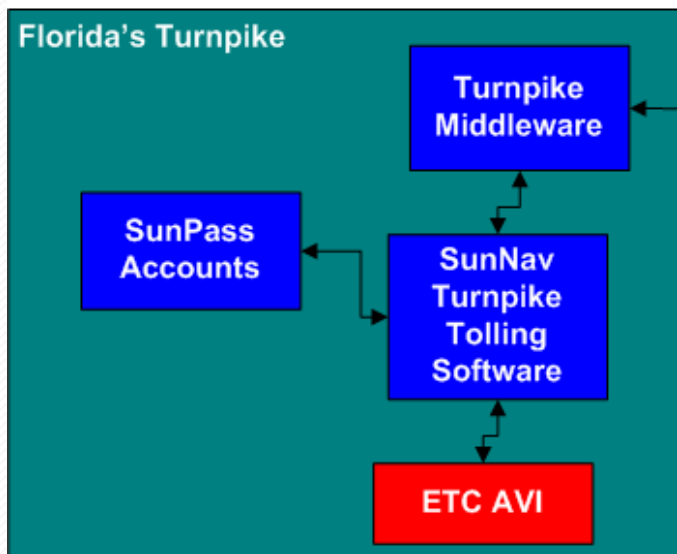
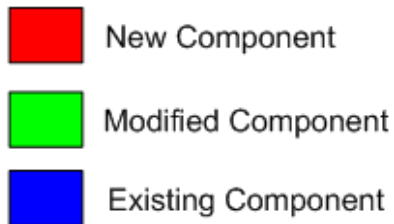
Permanent ITS Subsystem – Emergency Access Gates

- 5 Emergency Access Gate Locations
 - Each with 6 Warning Signs and 4 Beacons
 - Access for emergency vehicles only
 - Controlled by TMC

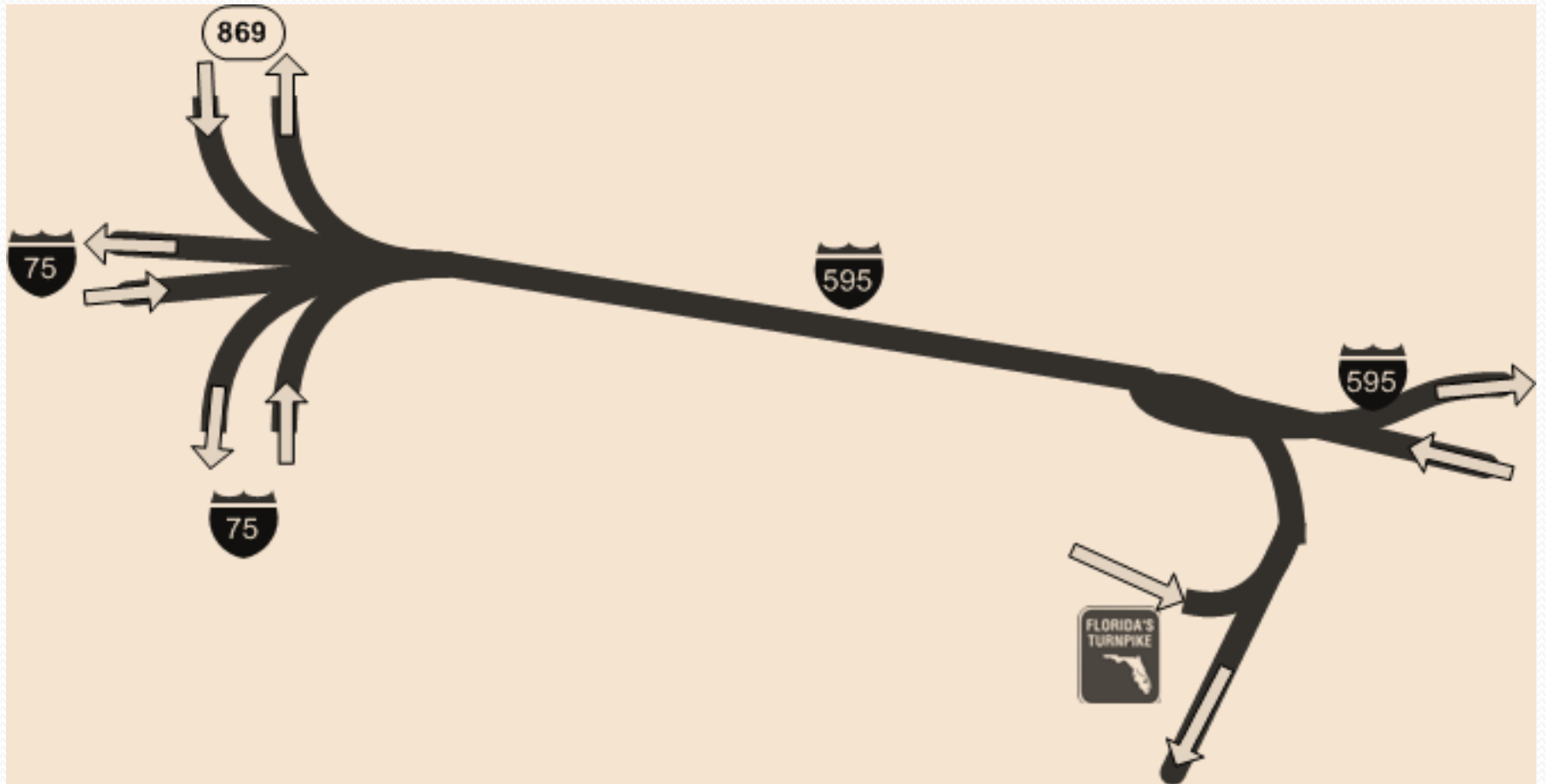


Reversible Lane Module Integration

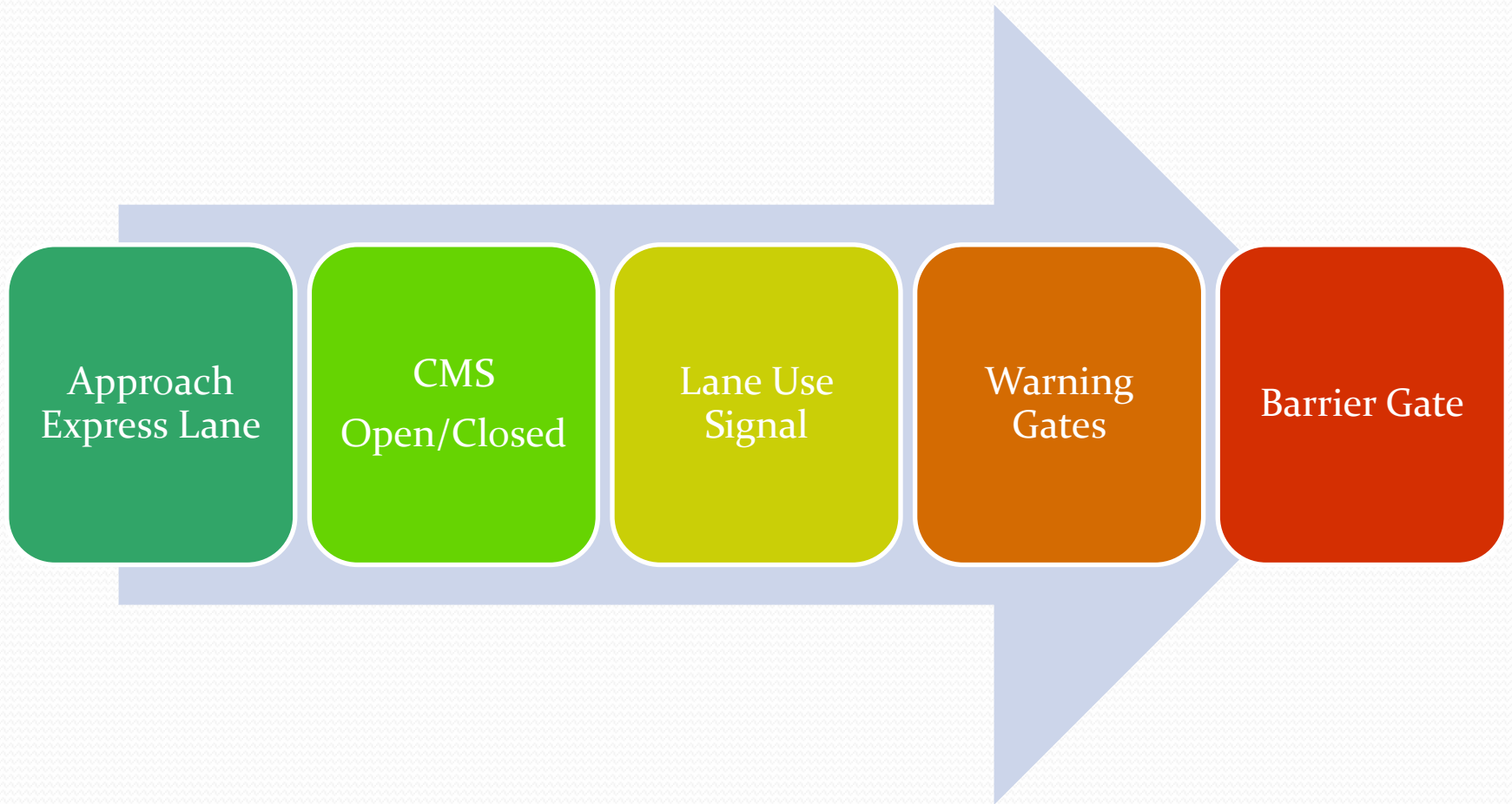
SunGuide Integration



Express Lane Operation

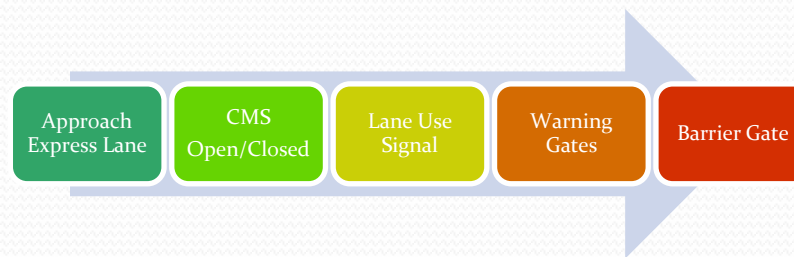


Motorist Guidance and Control



Operational Safety

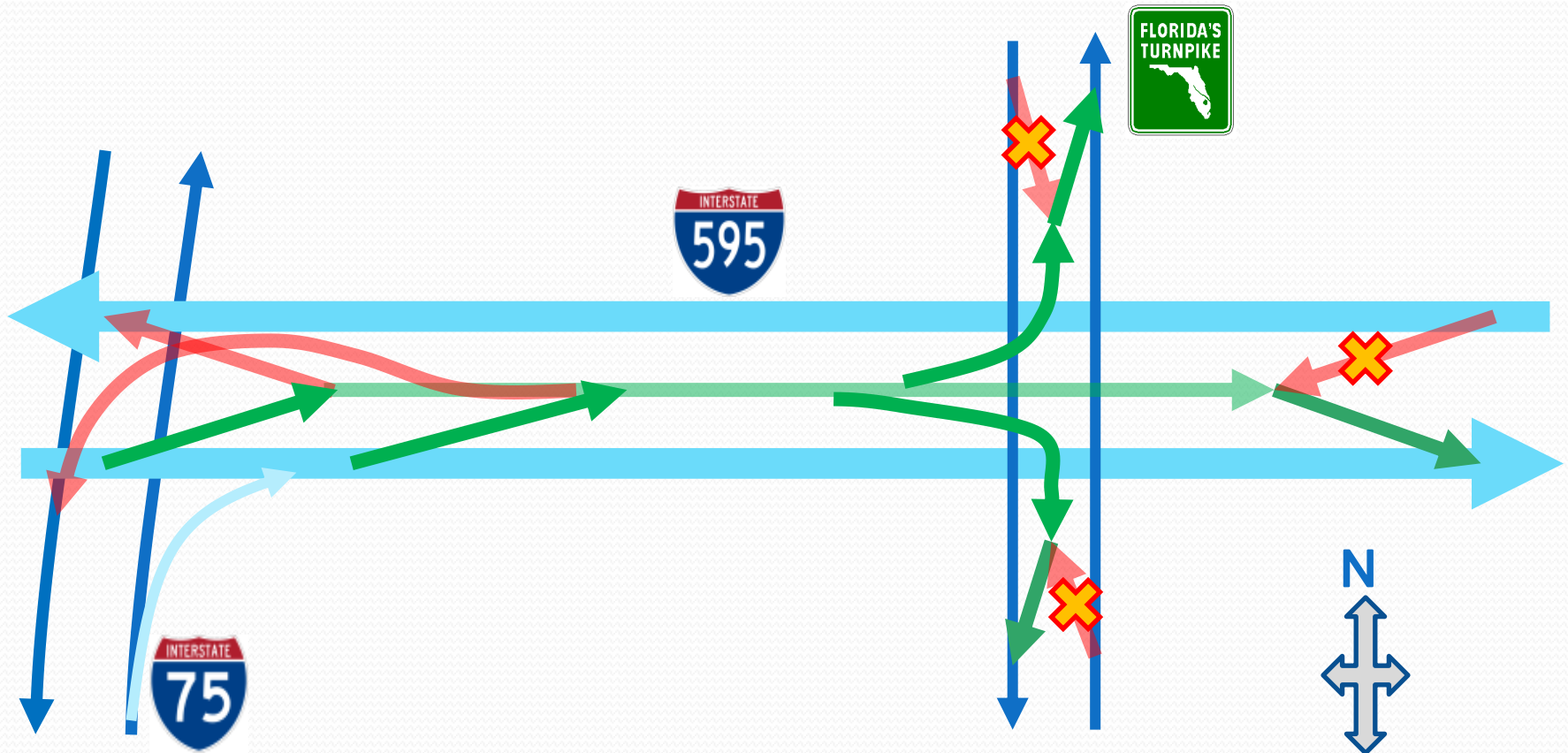
- Safe Management of Access to the Expressway
 - Verification that variable message signs, lane use signals, warning gates and barrier gates have received instructions and reflect the correct status



- Verification that the express lane is clear from the closed entry points to all exit points
 - Use CCTV
 - Use Road Rangers

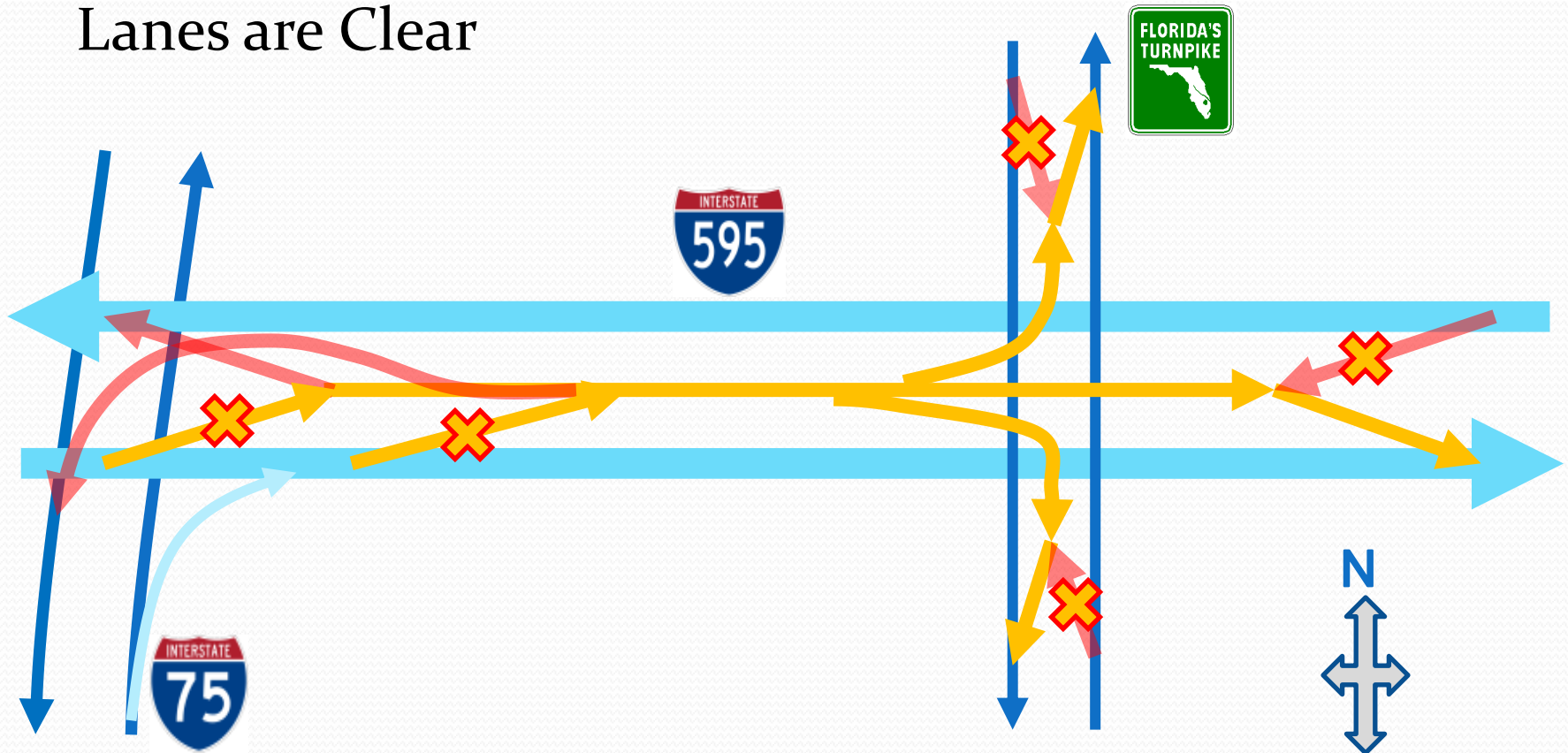
Reversible Lane Operation

- Morning Movement - EB Access Open



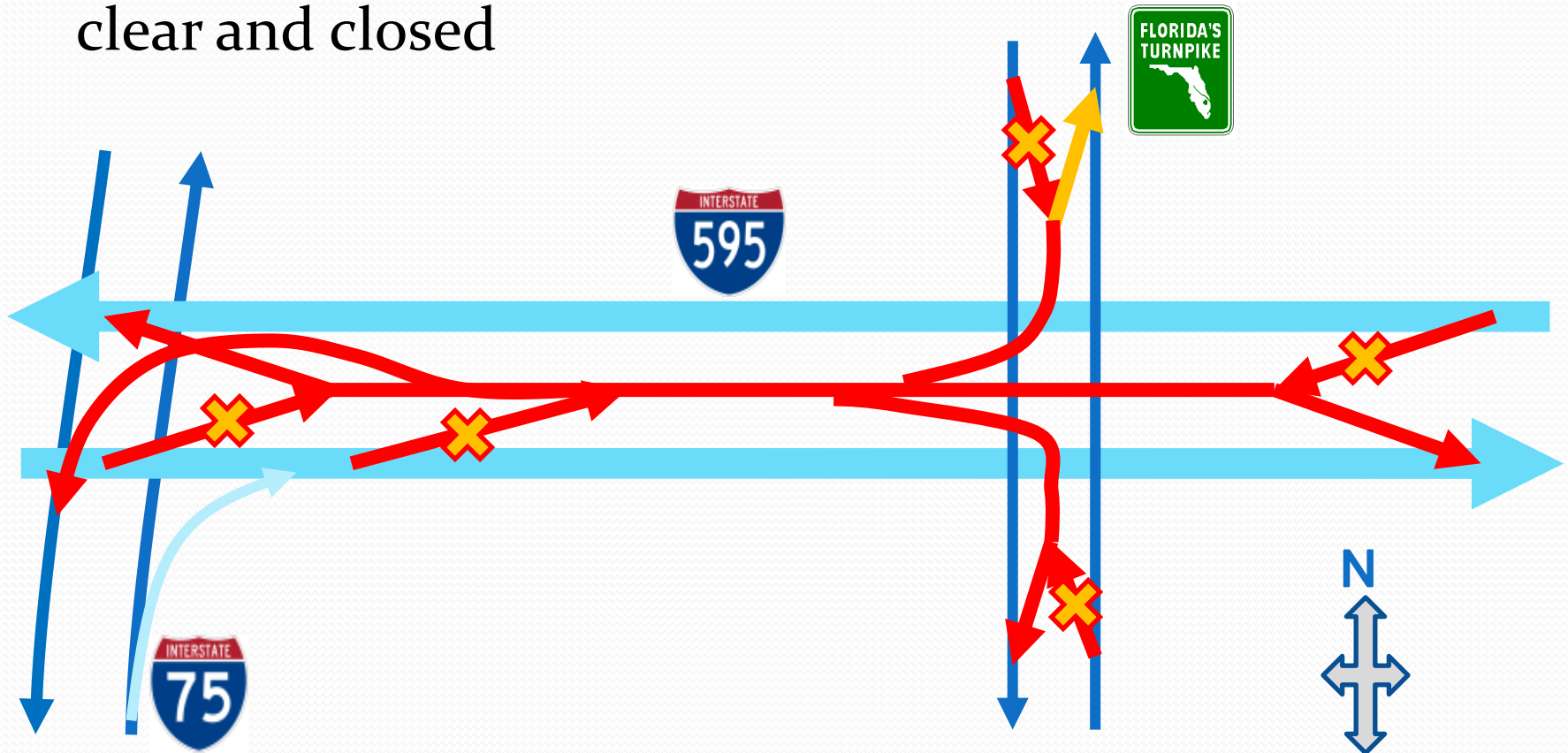
Reversible Lane Operation

- End of Morning Movement: Verification that Express Lanes are Clear



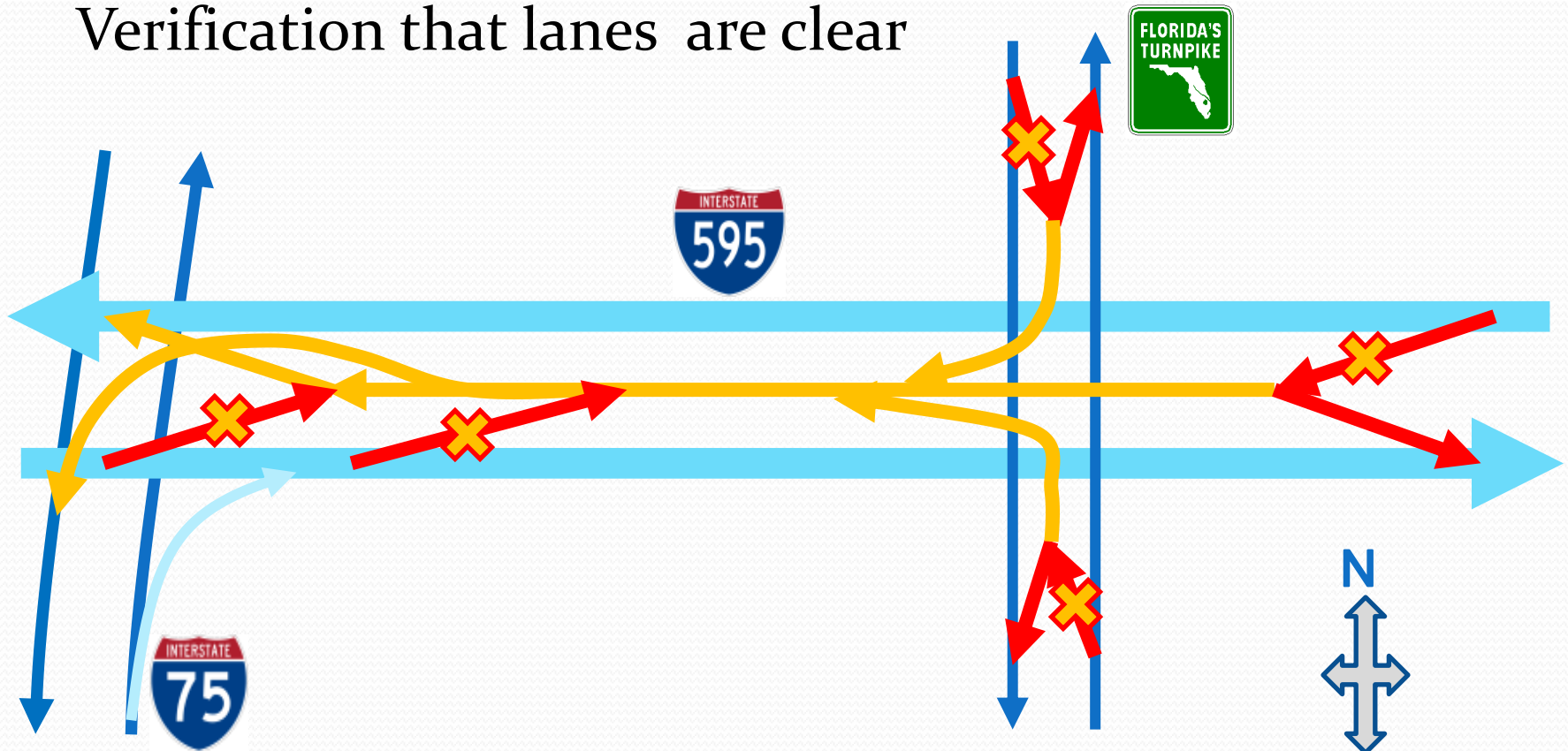
Reversible Lane Operation

- Transition to WB movement – Confirm all lanes are clear and closed



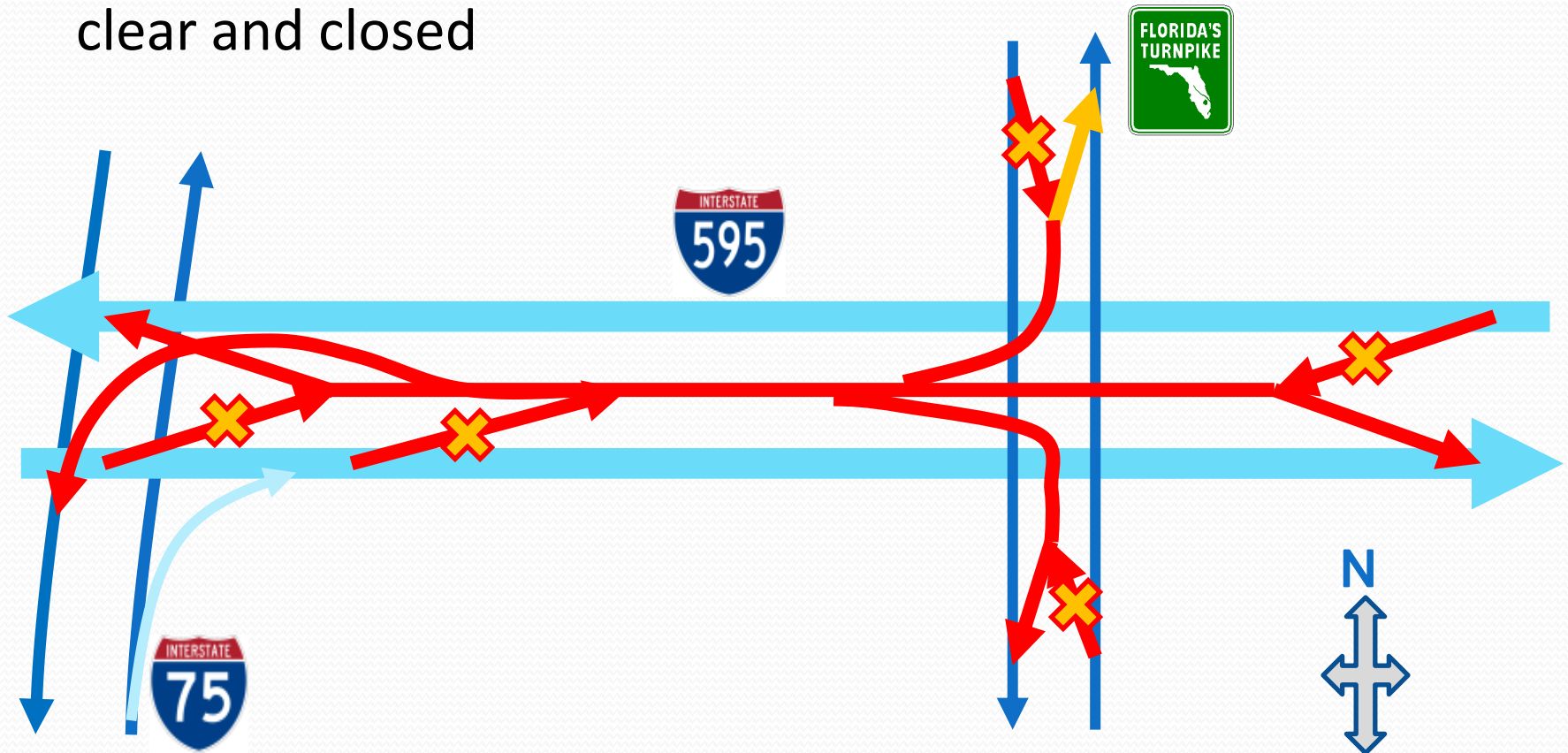
Reversible Lane Operation

- End of Afternoon Movement - WB Ramps Closed - Verification that lanes are clear



Reversible Lane Operation

- Prepare for Transition to EB movement - All Lanes are clear and closed



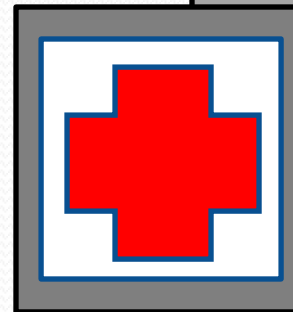
Express Lane Availability

- Florida's Turnpike
Enterprise is responsible for the collection of toll, FDOT District 4 responsible for determining the use of the expressway
- Congestion pricing – dependent on I 595 general lane use



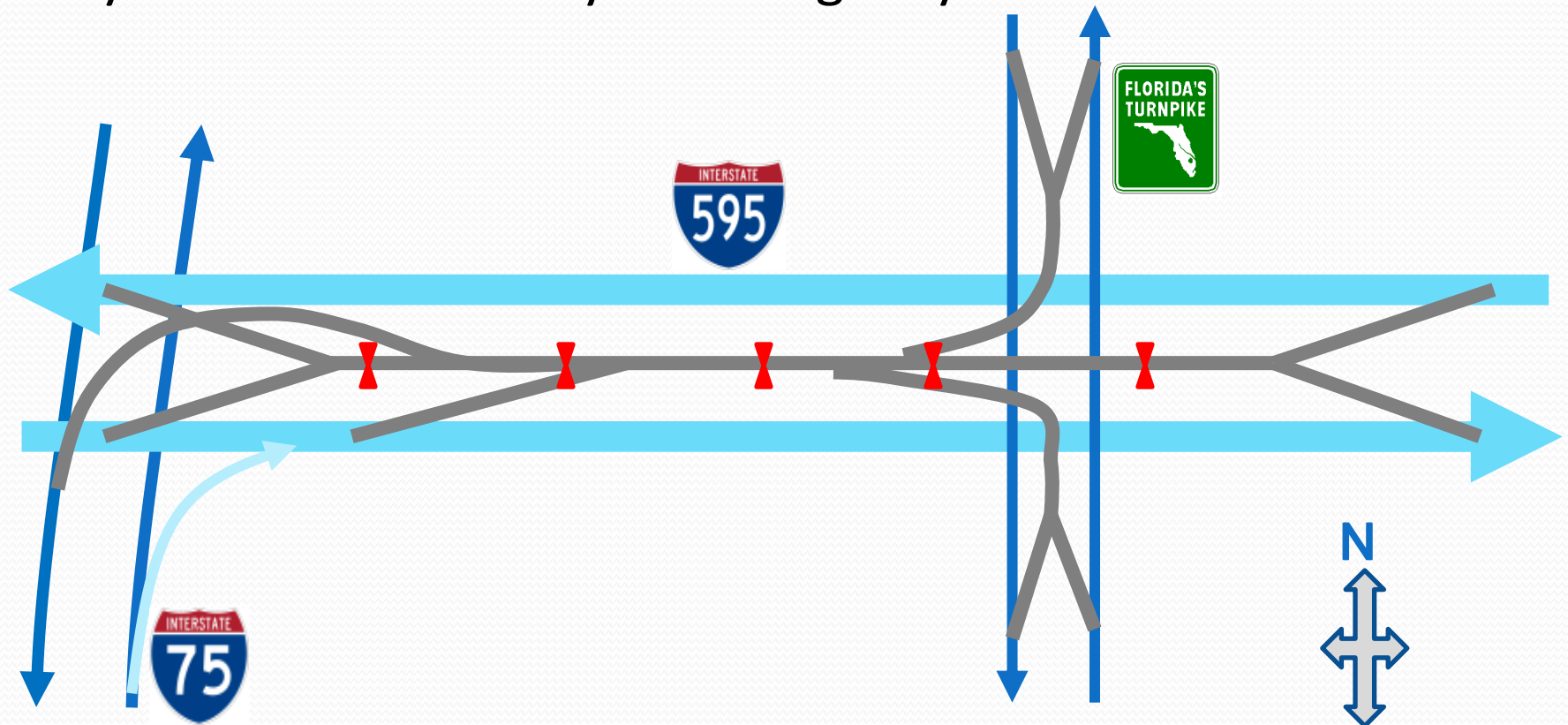
Emergency Management and Safety Features

- CCTV monitoring
- Road Rangers monitoring (30 minutes patrols)
- Emergency Access Gates
- Fire suppression system
- Fire truck connections every 500 feet
- Road Ranger MOT support
- Manual operation of barriers



Safety – Emergency Gates

- Five emergency gates located along the express lane system to allow entry of emergency vehicles





Thank you