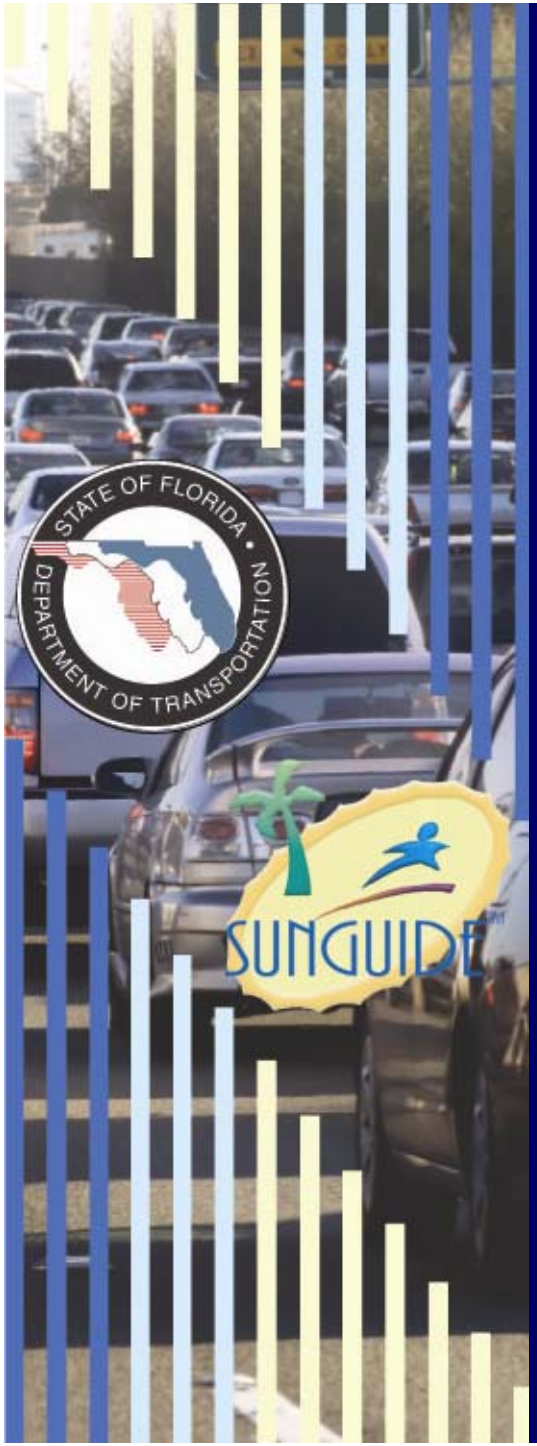

FDOT Traffic Engineering Research Laboratory (TERL) Project

Liang Y. Hsia

P.E. Administrator

TERL Programs

1/2

- Quality Engineering
- Certification – APL (Florida Statute 316.0745)
- SunGuide^{SM} Software Change Management, Independent Verification and Validation Test
- ITS Devices Change Management and Test
- TERL Research Project

TERL Programs
2/2

- Specifications Test and Update
- Device, Equipment, System Test
- Traffic, ITS, and Communications Labs
- Statewide Central Data Warehouse for performance measures and data sharing

TERL Major Areas

- Quality Engineering
- Traffic Signal Device Evaluation and Testing
- ITS Device Evaluation and Testing
- TMC and Communications Evaluation and Testing
- Specifications and Standards development
- Research Projects

Traffic Engineering Systems Team

Traffic Engineering Research Lab

Achieving excellence in advanced traffic engineering applications

FDOT & FSU

SUNGUIDE℠ Florida's Intelligent Transportation System

PBS&J

Southwest Research INSTITUTE®

TELVENT

Farradyne

FLORIDA STATE UNIVERSITY

Florida Statutes 316.0745

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Traffic Engineering & Operations

TE&O Home

FAQs–Public Interest

Programs

Operations

ITS

Traffic Incident Management

Traffic Systems

General Info

State Traffic Engineering and Operations Office

External links will open in a new browser window.

Approved Product List (APL) for Traffic Control Signal Devices

Click here to view the APL

- APL Approval Process
- APL Equipment Specifications (MSTCSD)
- APL Equipment Feedback & Information

Traffic Systems APL Overview

Section 316.0745, Florida Statutes, states that "All official traffic control signals or official traffic control devices purchased and installed in this state by any public body or official shall conform with the manual (MUTCD) and specifications (in our case it is the MSTCSD) published by the Department of Transportation."

Qualification, Certification, and the FDOT-APL

Quality Assurance:	**Vendor and/or Manufacturer QA Program Evaluation**
Certification:	**Device Evaluation and Test**
APL:	**Device Meets QA and Certification Requirements**

http://www.dot.state.fl.us/trafficoperations/Traf_Sys/terl/apl.htm

FDOT-APL Approval Process

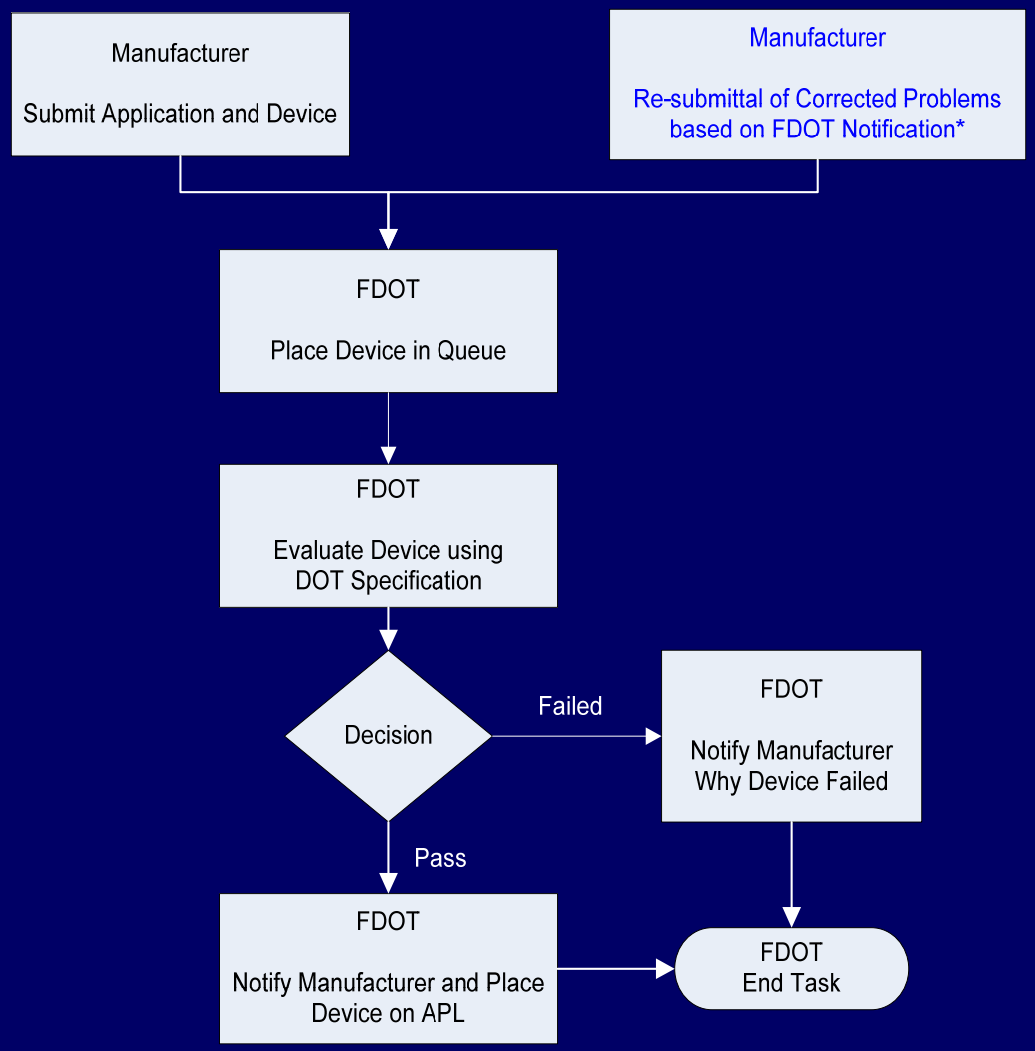
Device Specifications Evaluation

All (qualified) prospective APL vendors must show evidence that the device meets FDOT device specifications (by passing the FDOT Device Evaluation) before a device can be listed on the FDOT-APL.

Equipment Specifications:
(http://www.dot.state.fl.us/TrafficOperations/Traf_Sys/terl/apl4.htm)

Device Evaluation Procedure

APL CERTIFICATION PROCESS



*Note

Failure Practice

1st Failure = Can't Resubmit for 90 Days

2nd Failure = Can't Resubmit for 1 Year

APL Testing

ITS ITB Device Evaluation

1/5

- Fiber optic patch cords,
  - ST-ST connectors
  - SC0-SC connectors
  - ST-SC connectors
- Fast ethernet patch cords
- Cable fiber optic,
  - single mode (6 strands)
  - single mode (12 strands)
  - single mode (24 strands)
  - single mode (48 strands)
  - single mode (72 strands)
  - single mode (96 strands)

ITS ITB Device Evaluation

2/5

Type 336

- CCTV cabinet (Type 336) pole mounted
- CCTV/Detection cabinet (Type 336) pole mounted
- Detection cabinet (Type 336) pole mounted
- DMS cabinet (Type 336) sign structure mounted
- DMS/Detection cabinet (Type 336) sign structure mounted
- CCTV cabinet
  - Type 336 base mounted
  - Type 332 base mounted
- Hub cabinet
  - Type 332 base mounted, air conditioned
  - Type 332 base mounted, double width, air conditioned
- Managed edge ethernet switch

Type 332

ITS ITB Device Evaluation

3/5

- Device server
- Uninterruptible power supply
- Media converter
- Digital video encoder
- Digital video decoder, hardware
- Digital video decoder, software
- Managed field ethernet hub switch
- Digital video encoder / managed edge Ethernet switch / device server combination unit

ITS ITB Device Evaluation

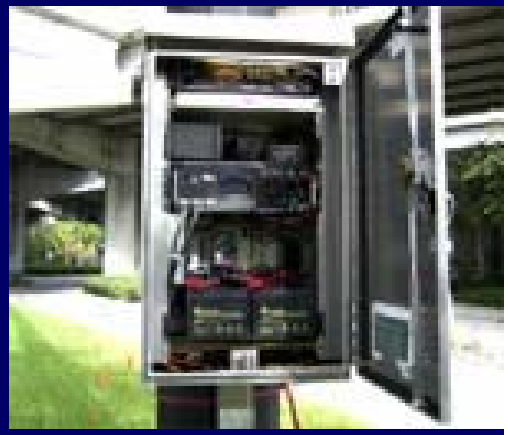
4/5

- Microwave vehicle detection system
  - 50 ft lead-in cable
  - 100 ft lead-in cable
  - 250 ft lead-in cable
  - 350 ft lead-in cable
  - 400 ft lead-in cable
  - 575 ft lead-in cable
- CCTV camera assembly
  - dome - pressurized
  - dome - non-pressurized
- CCTV camera assembly, barrel mount, external positioner,
  - 500 mm lens - pressurized
  - 500 mm lens - non-pressurized

ITS ITB Device Evaluation

5/5

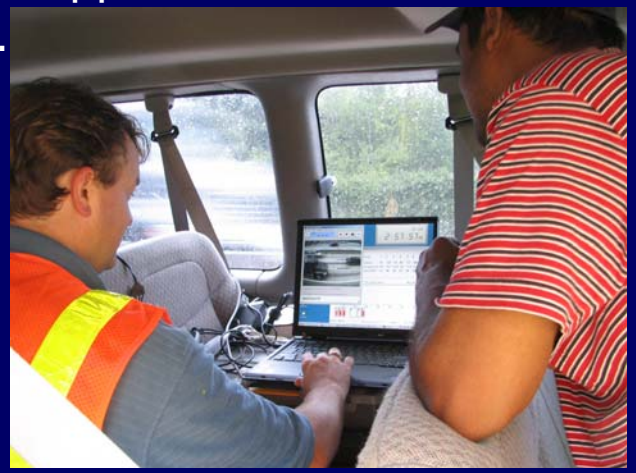
- DMS sign
  - full matrix, walk-in access
  - line matrix, walk-in access
- Transient Voltage Surge Suppressor (TVSS) protection
  - 240 VAC power
  - 120 VAC power
  - 12 VAC power
  - 24 VAC power
  - 48 VAC power
  - RS-422 serial data
  - RS-485 serial data
  - Ethernet data
  - analog video
  - T1



ITS ITB Device Evaluation

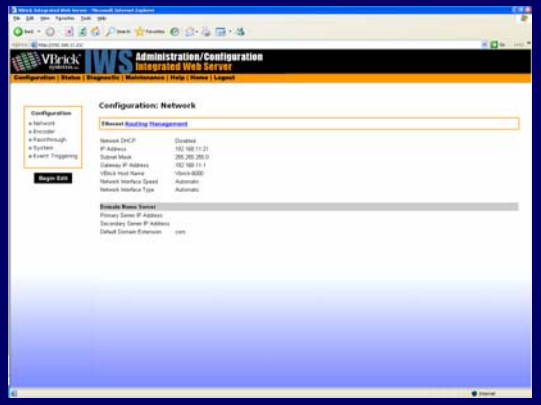
Evaluation and Test to support Statewide ITS device procurement effort ITB-DOT-05/06-9032-RR-1

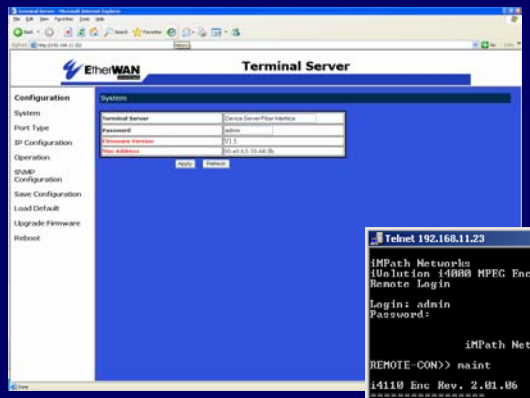
- Field and laboratory evaluations performed on 50 items to assure compliance with project specifications.
- The 50 items Include CCTV, DMS, MVDS, Network Devices, encoder, decoder and other products applicable to statewide ITS deployments.



Transportation Sensor System Test

Video Encoder/Decoder and Network Device Tests



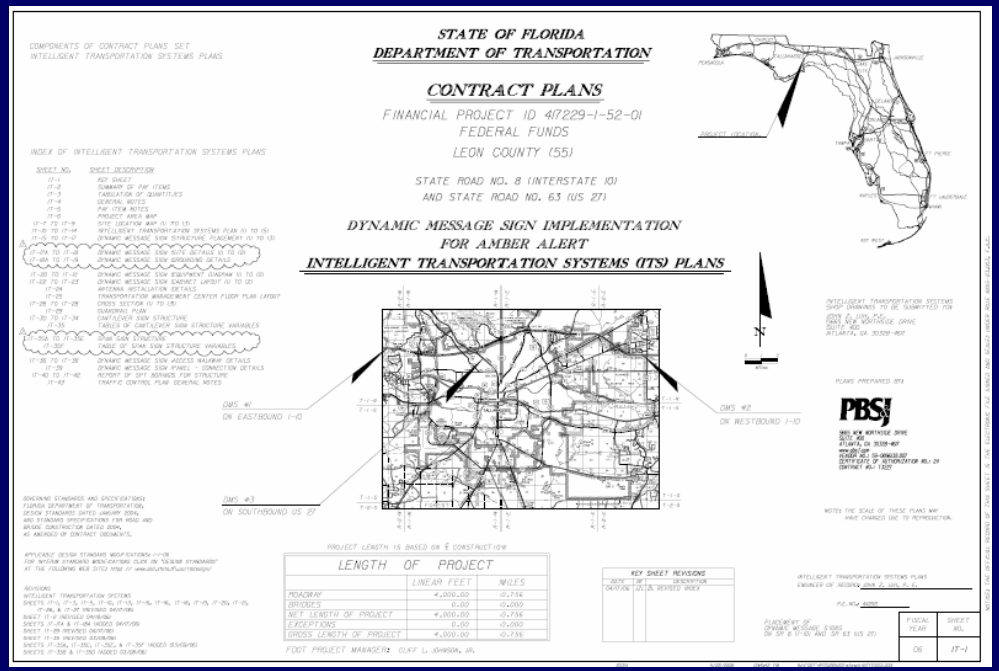


Ramp Meter Firmware Test

March 29, 30 Test Procedure Dry Run
April 11, 12 Firmware IV&V

Camera Lowering Device Evaluation

District 3 Tallahassee Amber Alert DMS Project Support



STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

CONTRACT PLANS

FINANCIAL PROJECT ID 417229-1-52-01
FEDERAL FUNDS
LEON COUNTY (55)

STATE ROAD NO. 8 (INTERSTATE 10)
AND STATE ROAD NO. 63 (US 27)

DYNAMIC MESSAGE SIGN IMPLEMENTATION
FOR AMBER ALERT
INTELLIGENT TRANSPORTATION SYSTEMS (ITS) PLANS

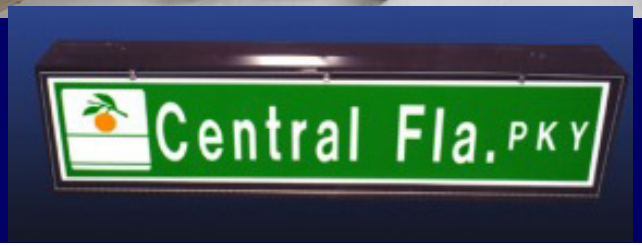
LENGTH OF PROJECT

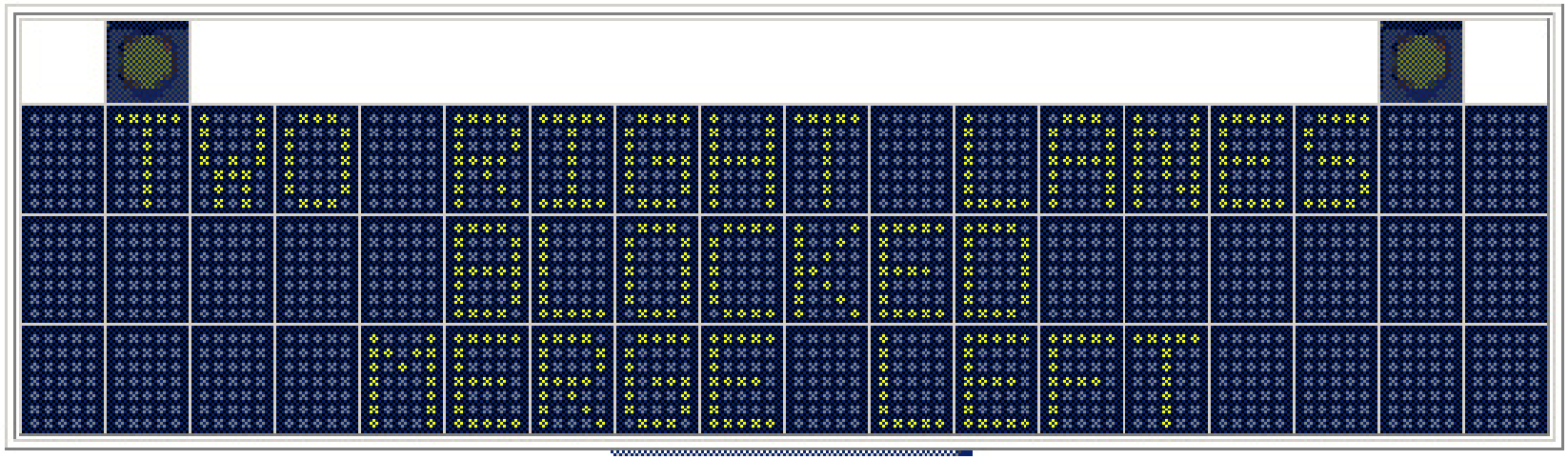
	LINEAR FEET	MILES
ROADWAY	4,000.00	0.756
BRIDGES	0.00	0.000
NET LENGTH OF PROJECT	4,000.00	0.756
EXCEPTIONS	0.00	0.000
GROSS LENGTH OF PROJECT	4,000.00	0.756

Actuated Signal Controller

- **Econolite ASC/3-2100**

Optical Tests





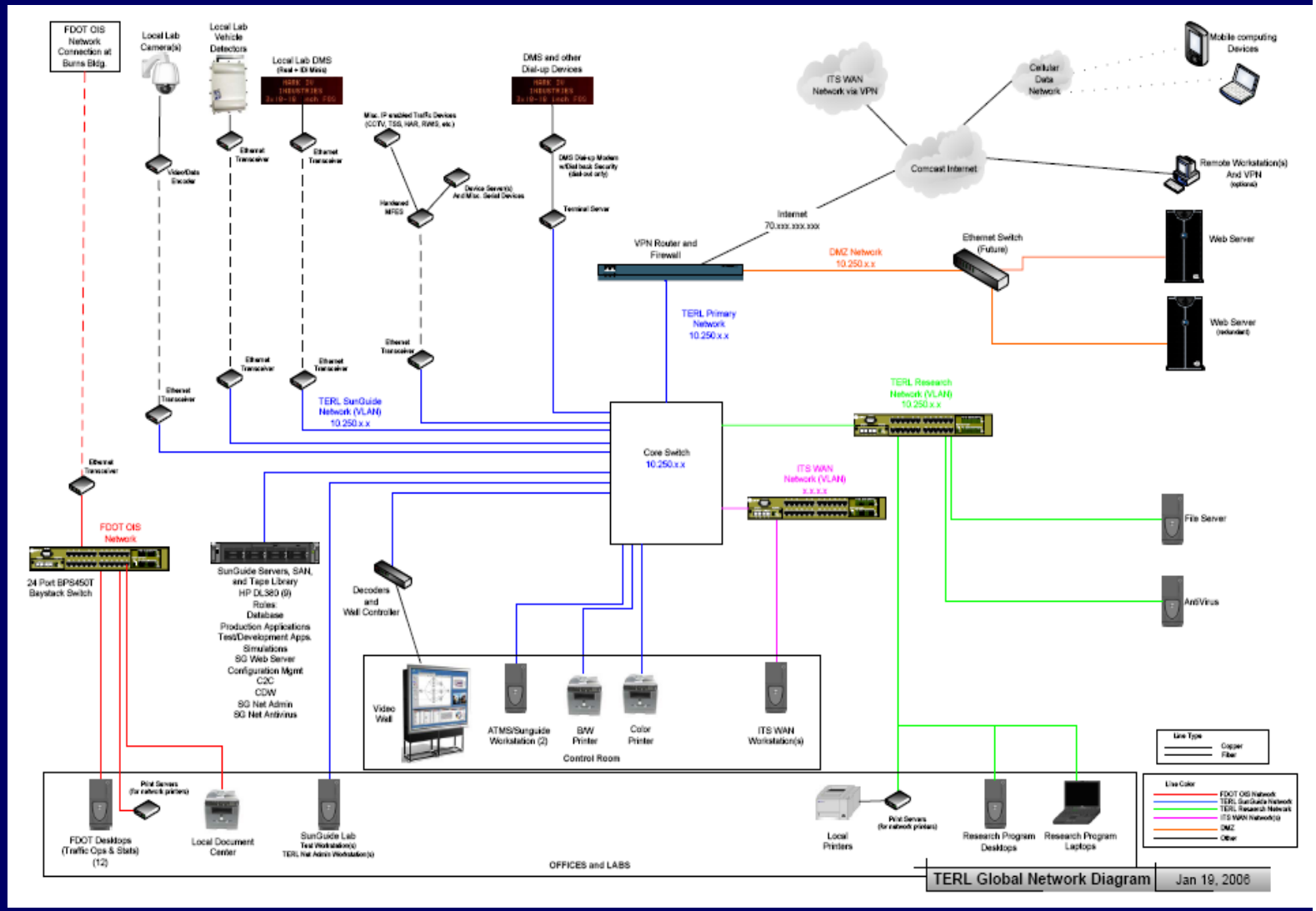
Maintenance Of Traffic

Work Zone Signals

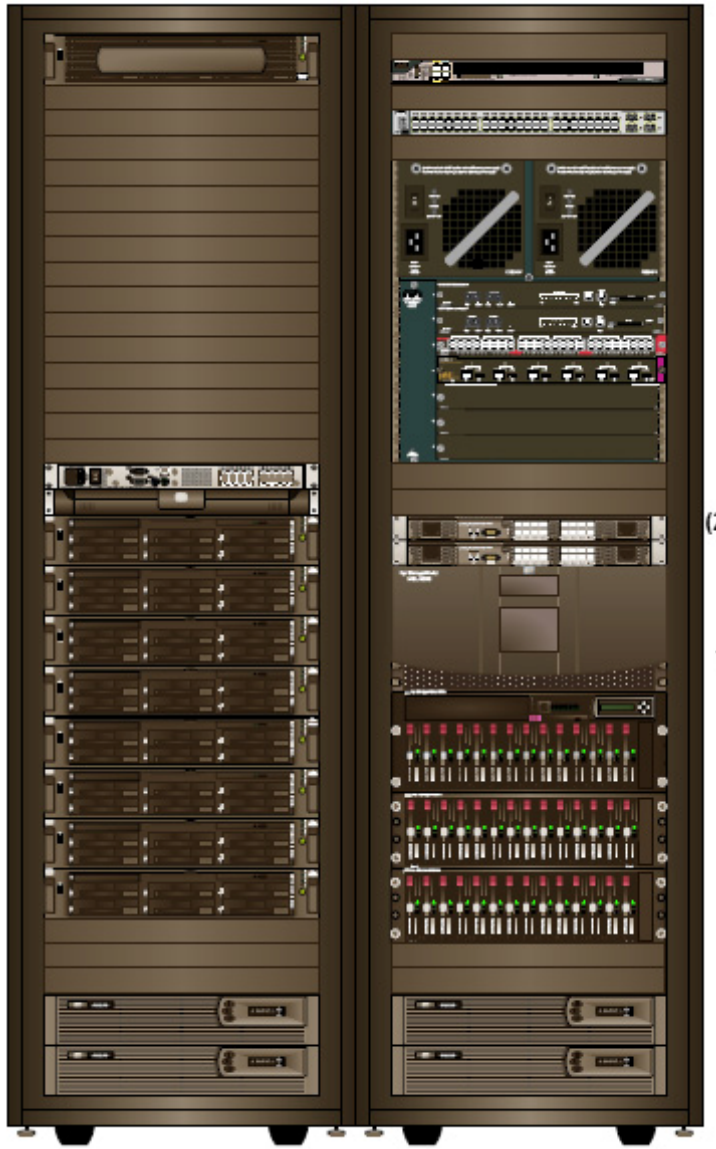
Automated Flagger Assistance Device Test

Pull Boxes for Conduit and Cable

TERL Network Diagram



TERL Server and SAN Racks



TMC and Communications Testing SunGuide^{SM} Software, ITS Hardware

Statewide Central Data Warehouse Research Project

Local TMC's

iFlorida

Others?

How can we use our data to the fullest?
Prototype methods and tools
RCI
Traffic Counts
Crash Records
Incident Management

FDOT GIS Functional Steering Committee

Arc GIS 9.2
TeleAtlas Dynamap, Google Maps, etc.
Unified Florida Roadway Base Map Initiative
FDOT GIS Team Room Web Site:
http://cosharepoint.dot.state.fl.us/sites/gis/default.aspx

NTCIP 1204

Environmental Sensor Station Standard
FDOT was invited as a voting member

AASHTO State DOT ITS Standards Testing Program Partners

- AASHTO Invited TERL on December 6, 2006
- AASHTO Interviewed TERL on February 21, 2007
- US DOT & AASHTO selected TERL for NTCIP 1204 v1.08 CCTV for funding and additional consideration on March 19, 2007

Incident Management Product Evaluation and Inventory

CB Wizard

DMS

HAR

Asset, APL Submittal Inventory

Questions?

Traffic Engineering Systems Section (TESS)
Traffic Engineering Research Laboratory (TERL)
(850) 921-7350

Web Site:
http://www.dot.state.fl.us/trafficoperations/Traf_Sys/terl/TERL.htm