

# Traffic Engineering Research Lab for ITS



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## Traffic Engineering Research Lab



- Traffic Engineering Systems
- Intelligent Transportation Systems
- Statewide Communications Research



- Certification - APL
- Quality Engineering
- SunGuide<sup>SM</sup> Software, Hardware Change Management and Test
- Device system test with specifications updates
- ITS Communications
- TERL Research Project



- Statewide DMS Specification
- DMS NTCIP Standards
- NTCIP Testing Tools
- NTCIP Test Procedures Perform In-House Testing
- DMS Manufacturer QA Program



## Traffic Engineering Research Lab ITS Accomplishment



- Non-Intrusive Vehicle Detection Guidelines and Specifications for:
  - Video,
  - Microwave;
  - Magnetic;
  - Acoustic;
  - Infrared; and
  - Ultrasonic



## Traffic Engineering Research Lab ITS Accomplishment



- GPS Travel Time Software for Traffic Studies
- Optical Testing System for DMS and Traffic Signal LED
- APL Vendor Qualification Program;
- Provide various product tests



# Research Team



**Traffic Engineering  
Research Lab**  
Advanced research in road and air traffic engineering applications







**FLORIDA STATE UNIVERSITY**







**PB FARRADYNE**  
a Parsons Brinckerhoff Company

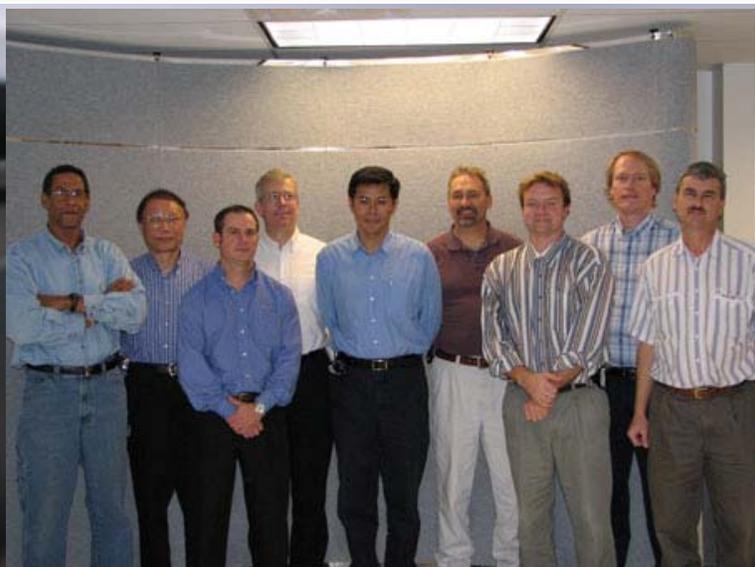






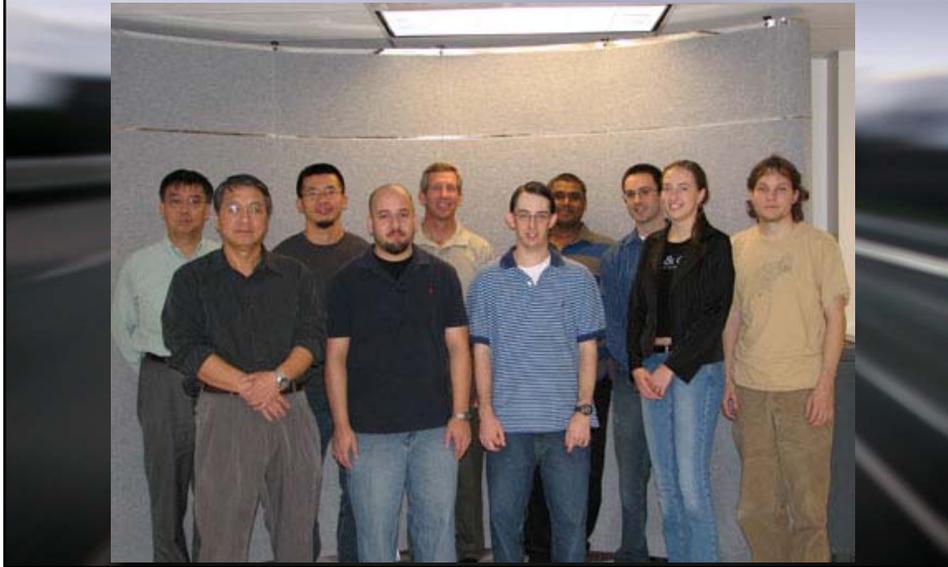
# Test and Research Team







## Research Team



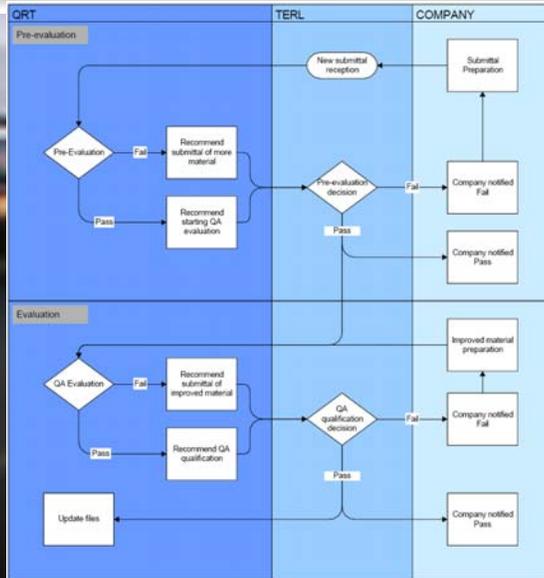
## Traffic Engineering Research Lab Current ITS Projects



- ITS Product Approval Program
- Develop & Update ITS Specifications;
- ITS Device Testing Procedures;
- ITS Device Tests;
- ITS Device Quality Assurance; and
- ITS APL Web Site.



## Quality Assurance Procedure



## Proposed Traffic Engineering Systems Research



- Quality Engineering Research
- NTCIP Standards/Testing Development for Actuated Signal Controllers
- Traffic Signal System Certification
- Traffic Sign and Signal Structural Support



## Proposed ITS Research Projects



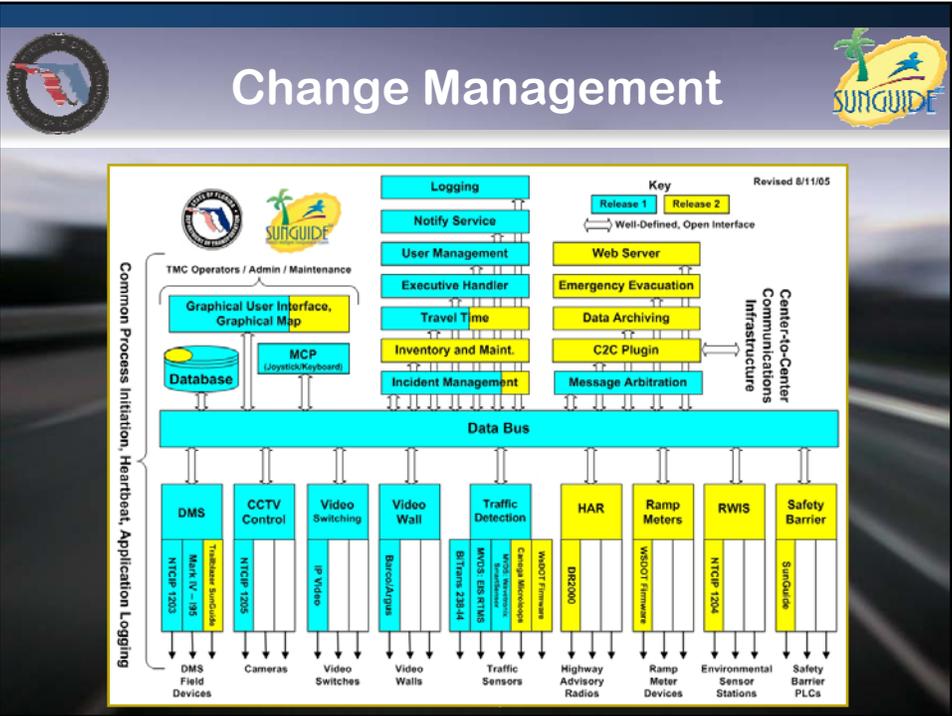
- TERL ITS and SunGuide Software Lab Setup with Ongoing Change Management (software, hardware, and network)
- ITS Device Testing and Certification Processes Research to maintain and update ITS Specifications
- ITS Devices NTCIP Florida MIB



## Proposed ITS Research Projects

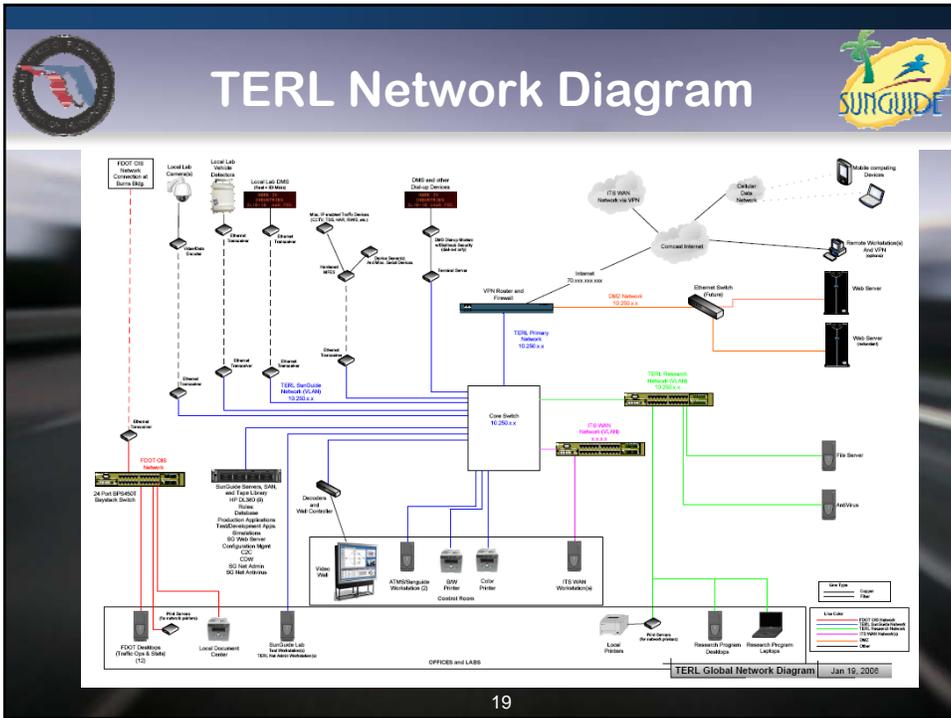


- ITS Software Integration and Acceptance Tests
- ITS Software Interfaces with DYNASMART
- ITS Center-to-Center Communications



- # ITS Network and Hardware
- Servers for SunGuide<sup>SM</sup> Software Applications
  - Database
  - Production Application
  - Test Application
  - Configuration Management
  - Simulation Host
  - Web Application
  - C2C
  - Central Data Warehouse
  - Network Administration
  - Storage Area Network (SAN)
  - Storage and Backup, Tape Backup
  - Network Equipment
  - Switches and Routers for Device and System Interconnect
  - Network Administration Tools

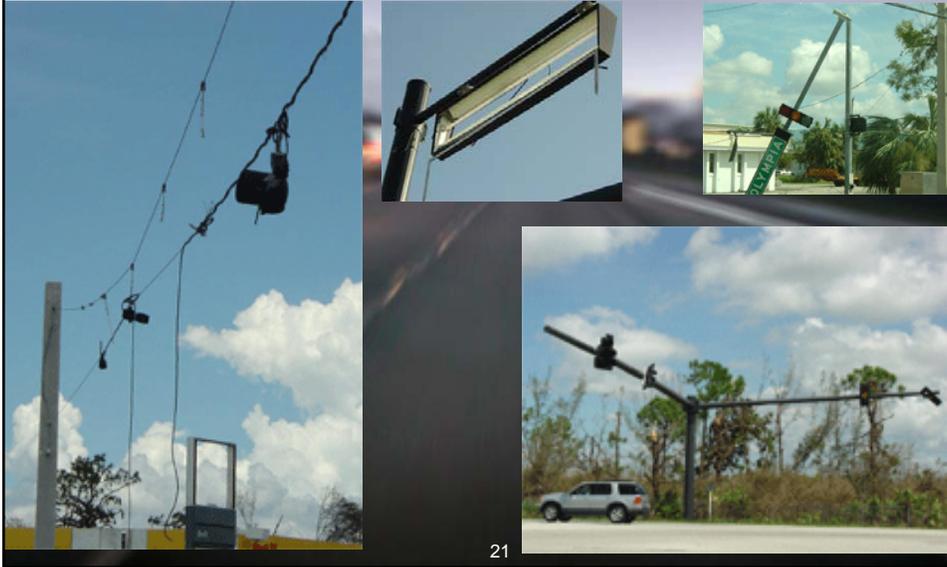






## Signal and Sign Support System

After Hurricane Charley, August 13, 2004



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## ITS Device Object Definitions and NTCIP Testing



- NTCIP 1203 Dynamic Message Signs v1.0 Amendment 1
- NTCIP 1204 Environmental System Sensors (RWIS) v02.18
- NTCIP 1205 Closed-Circuit Television Control v01.08 Amendment 1
- NTCIP 1206 Data Collection Management
- NTCIP 1207 Ramp Meter Control
- NTCIP 1208 Video Switches v01.11
- NTCIP 1209 Transportation System Sensor

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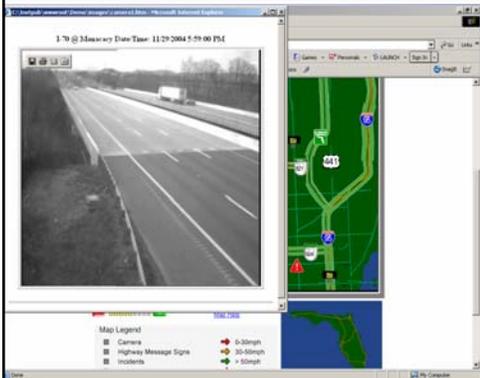
**NTCIP 1203**  
**Dynamic Message Signs**






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**Web Server: Snapshots and DMS**

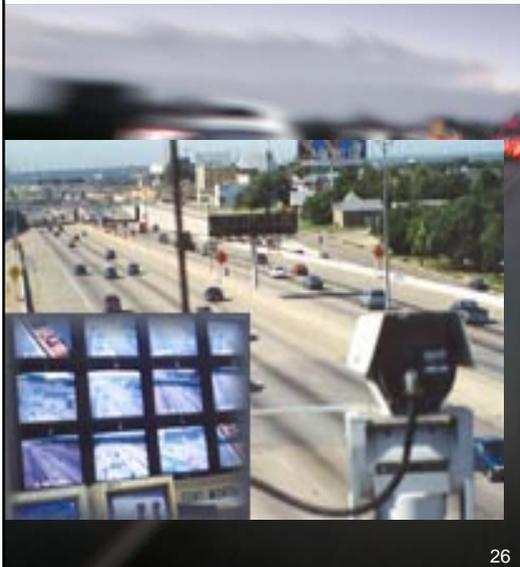

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**NTCIP 1204**  
**Environmental System Sensors**  
(RWIS on FDOT Tallahassee Microwave Tower)



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**NTCIP 1205**  
**Closed-Circuit Television Control**



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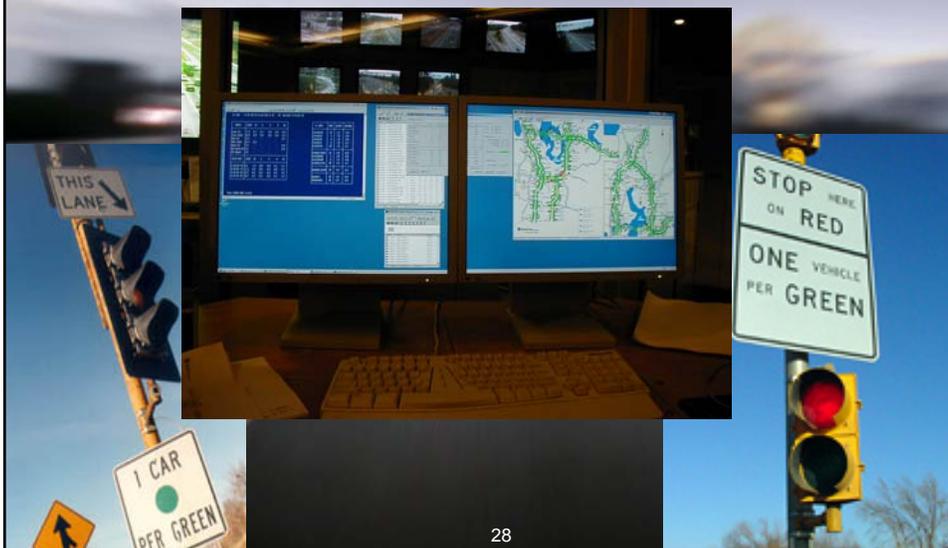
# NTCIP 1206 Data Collection Management



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# NTCIP 1207 Ramp Meter Control



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# NTCIP 1208 Video Switches



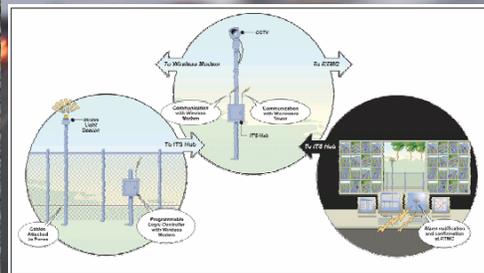
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# Safety Barrier Cable System



Existing System



Proposed Mode of Operation

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## NTCIP Translator



Use of NTCIP translator devices for non-NTCIP devices

- Saves SunGuide development costs for device driver
- Facilitates integration of legacy devices



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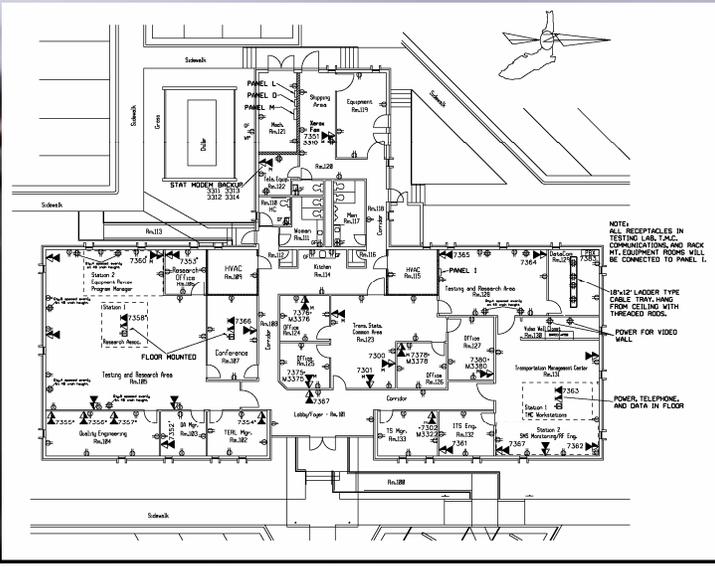
## TMC Video Wall



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# TERL Facility



# Quality Engineering Research Area





## Ramp Metering, Traffic Device Test Area



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## Signal, Controller, QA Test Station



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## ITS Device & SunGuide Software TMC Test Area



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## Servers, ITS Devices, & CODEC Rack Room



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## Statewide Communications Research

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## TMC and Communications Test Areas



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## FDOT Microwave Tower



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## Conference Room & Typical Office



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## Visitors Briefing



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## Current Research Projects



NTCIP Florida MIB



Statewide Central Data Warehouse

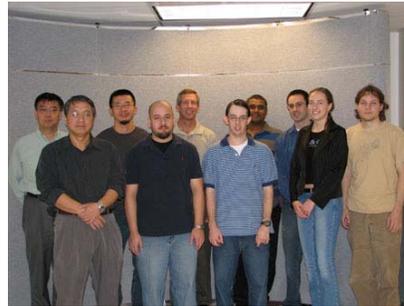
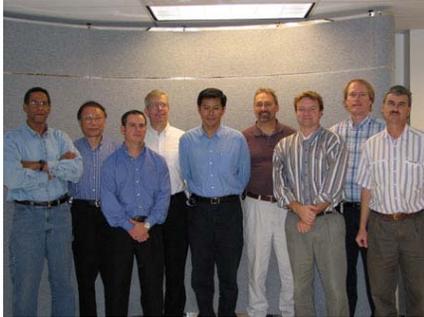


Real-Time Route Diversion

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## Welcome to FDOT TERL Showcase



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## Questions?



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