



TAMPA-HILLSBOROUGH
EXPRESSWAY
AUTHORITY

**CONNECTED VEHICLE
PILOT DEPLOYMENT PROGRAM**

October 10, 2016

Presentation

- Concept
- Pilot Location
- Needs and Use Cases
- Application Overview

Concept

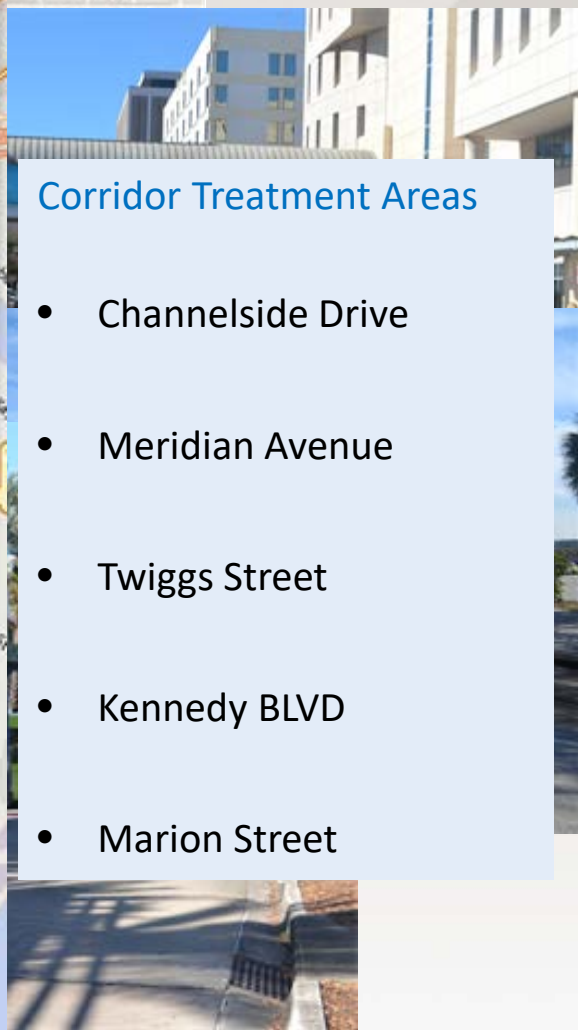
Demonstrate and measure the impact of Connected Vehicle technology's ability to make multi-modal transportation in the Tampa Bay Community safer, smarter and greener.

- Safety
- Mobility
- Connectivity
- Partnerships/Collaboration
- Community
- Innovation

Expanded Stakeholder Impact Area



Focused Pilot Deployment Area

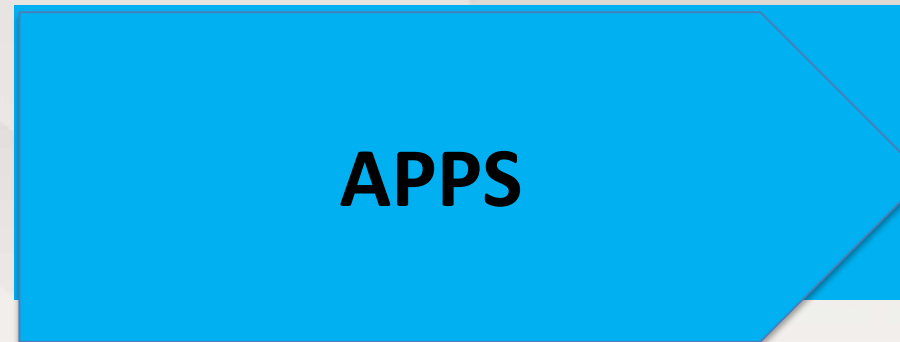


Corridor Treatment Areas

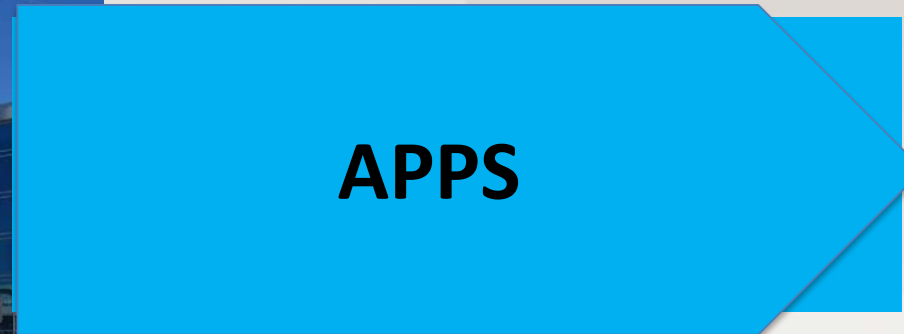
- Channelside Drive
- Meridian Avenue
- Twiggs Street
- Kennedy BLVD
- Marion Street

Needs and Use Cases

Use Case 1 – Morning Peak Hour Queues



Use Case 2 - Wrong Way Entries



Use Case 3 – Pedestrian Safety



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NEEDS

APPS

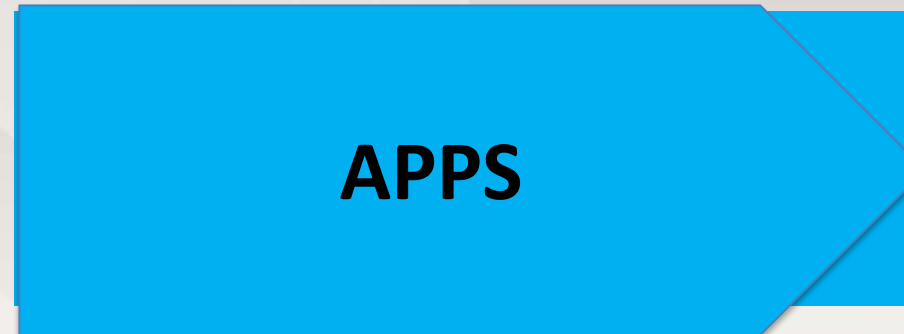
Use Case 4 – Bus Rapid Transit Signal Priority Optimization, Trip Times and Safety



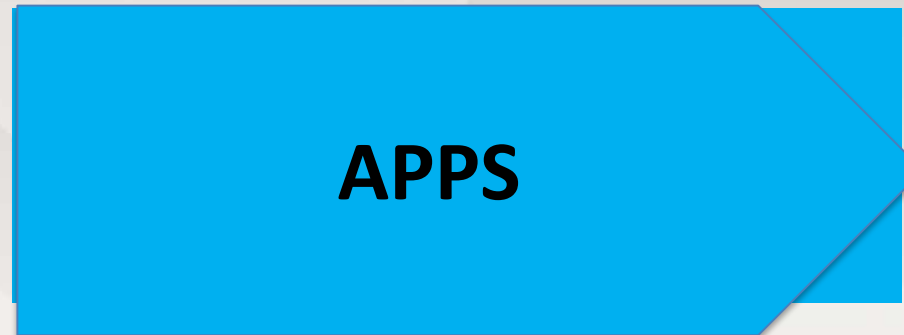
NEEDS

APPS

Use Case 5 – TECO Line Streetcar Conflicts



Use Case 6 – Enhanced Signal Coordination and Traffic Progression



CV Apps Adaptation

- Forward Collision Warning (FCW)
 - Used as designed
- Emergency Electronic Brake Light (EEBL) Warning
 - Used as designed
- Curve Speed Warning (CSW)
 - Used as designed,
 - **with input scaled to safe stopping distance**
- Intersection Movement Assist (IMA)
 - Used as Designed
- Red Light Violation Warning (RLVW)
 - Used as designed to predict violation, plus added TIM warnings:
 - Before vehicle enters a closed ramp
 - To oncoming traffic when vehicle enters closed ramp
 - To Master Server when vehicle enters closed ramp for Law Enforcement
 - Warnings canceled when wrong-way vehicle exits or reverses direction

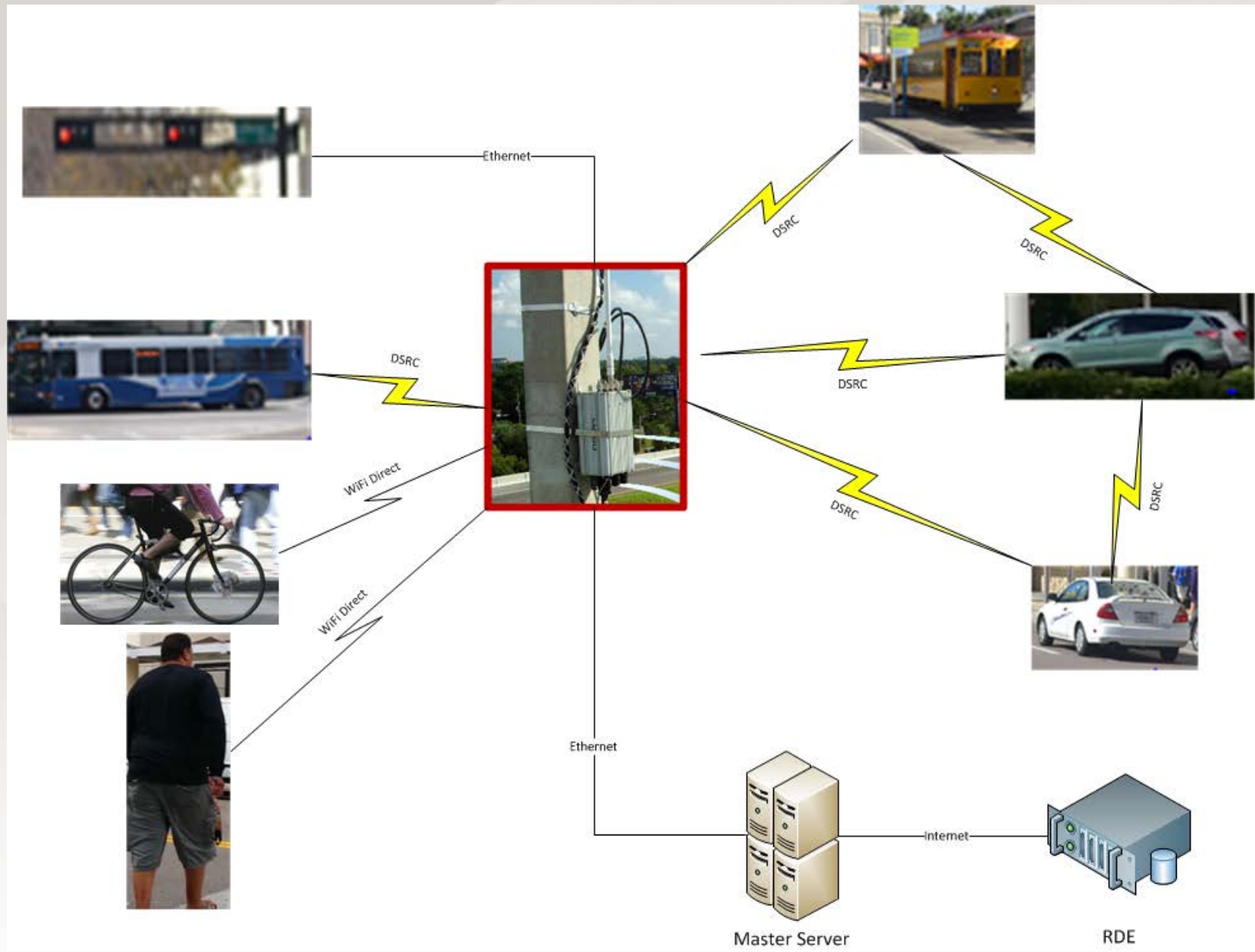
CV Apps Adaptation

- Intelligent Traffic Signal System (I-SIG)
 - Used as mathematically designed, plus:
 - Hard-coded site-specific test constants become configurable fields
 - Manufacture-specific constants become configurable fields
 - Generalize the hard-coded, fixed-phase sequences to configurable fields
- Probe Enabled Data Monitoring (PeDM) or Vehicle Data for Traffic Operations (VDTO)
 - Aggregate incremental BSM movements to travel time, incidents
- Pedestrian in signalized crosswalk warning
 - Translate WiFi PSM to DSRC BSM for FCW and IMA
- Mobile Accessible Pedestrian Signal System (PED-SIG)
 - Used as designed

CV Apps Adaptation

- Transit Signal Priority (TSP)
 - Used as designed, plus:
 - Vehicle Identification Number (VIN) authenticated by HART central
 - Priority Request selectively granted or blocked by HART central
- Vehicle Turning Right in Front of Bus (VTRFB)Definition-
 - Used as designed except Transit vehicle is a trolley
- Transit Signal Priority (TSP)
 - Used as designed, plus:
 - Vehicle Identification Number (VIN) authenticated by HART central
 - Priority Request selectively granted or blocked by HART central
- Vehicle Turning Right in Front of Bus (VTRFB)Definition-
 - Transit vehicle is a trolley

Deployment Concept



For More Information

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Questions?