City of Tallahassee

ITS Master Plan

CRTPA Board Retreat

CITY OF TALLAHASSEE | CRTPA | Kimley»Horn

Agenda

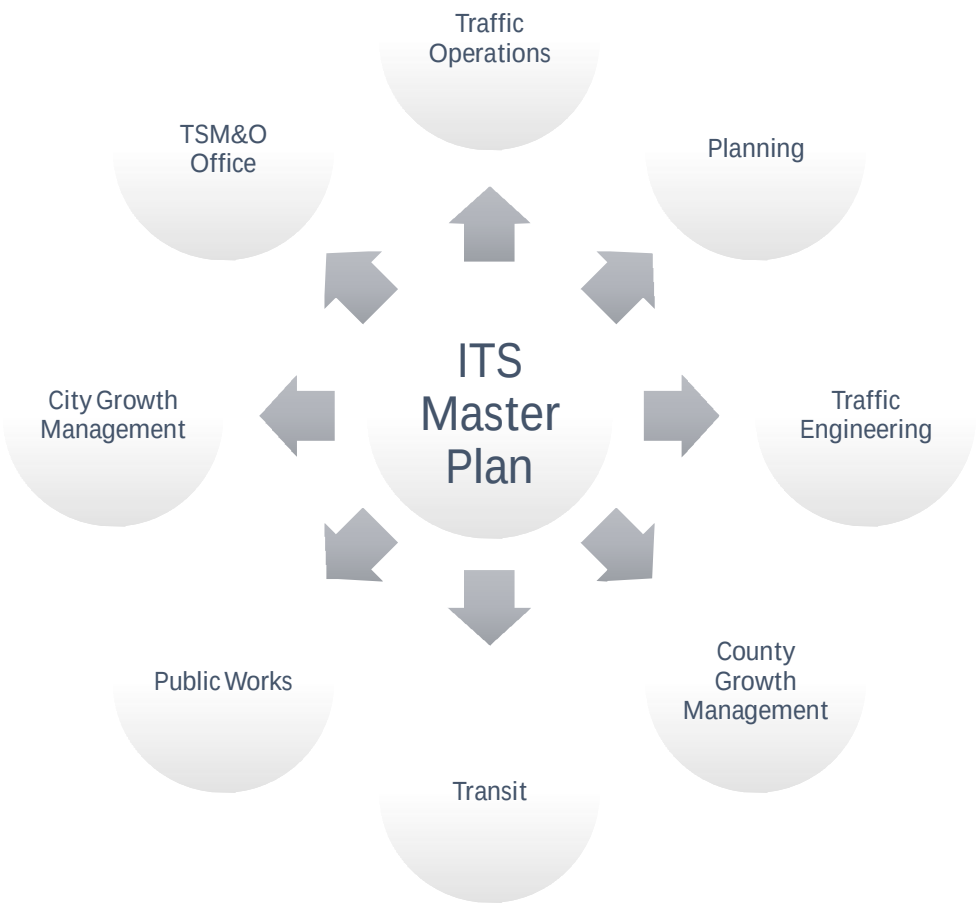
- Project Progress
  - Existing Conditions
  - Needs Assessment
  - Deployment Recommendations
- Implementation Plan
  - Prioritization Criteria
  - Project Evaluation
  - Project Ranking
- Next Steps

What is the ITS Master Plan?

- A comprehensive roadmap for planning, implementation, operation, and maintenance of Intelligent Transportation Systems and ITS communications assets.
- This plan will enable the City of Tallahassee to evolve the current system to one that will meet the mobility, safety, and quality of life needs of the City.

Stakeholders

- Kick-off Meeting
- Meeting Objectives:
  - bring together key stakeholders
  - understand processes and current coordination between the various departments
  - determine how they support traffic, incident, work zone, and special event management



Project Vision

Maximize the transportation system efficiency and performance using innovative technologies and regional collaboration to promote reliable mobility throughout the vibrant capital city region.

Existing Conditions

- Kick-off meeting with project stakeholders
- Developed a comprehensive summary of existing technologies deployed throughout the City
- Final memo shared with stakeholder group on April 17th

97
CCTV Cameras

400
System Detectors

3
Automated Bicycle Counters

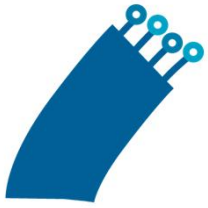
80
BlueTOAD Devices

357
Traffic Signals

73
Buses with AVL Systems

24
Cellular Modems

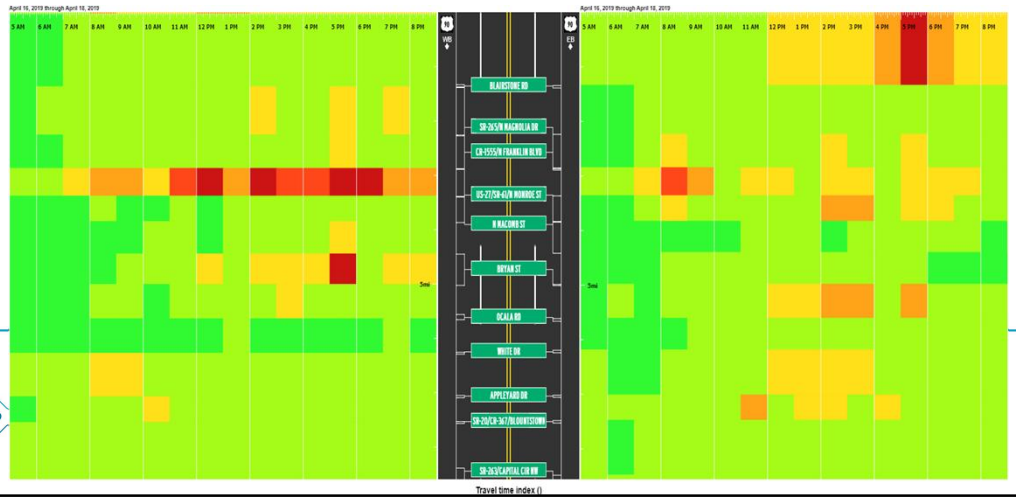
190
Miles of Fiber Optic Cable

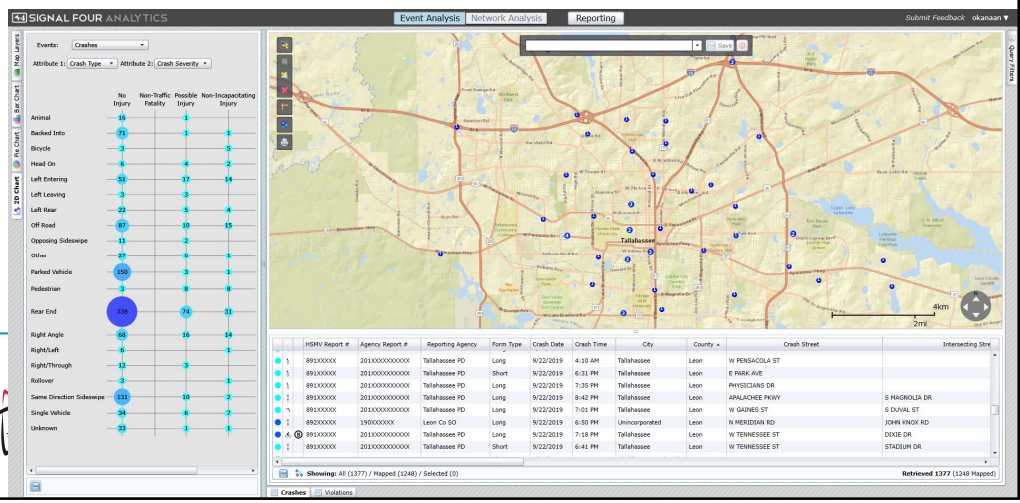


22
DSRC Radios

Needs Assessment

- Conducted an analysis of current congestion and safety data to complement stakeholder identified needs
  - Congestion data from RITIS
  - Crash Data from Signal Four Analytics



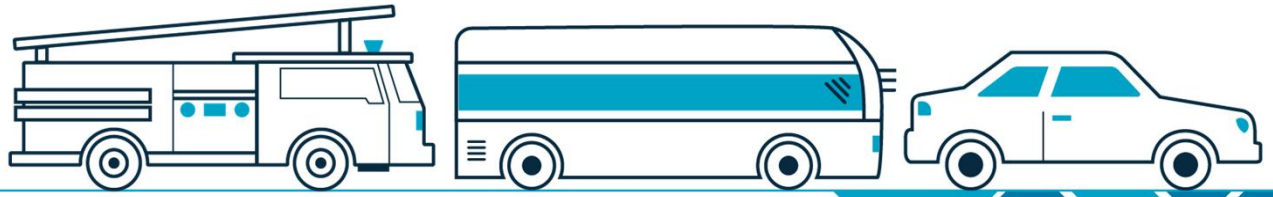


Needs Assessment

- Evaluation of Additional ITS Technologies
  - Connected and Autonomous Vehicles
  - Network Architecture Enhancement
  - Performance Measures
- Final memo shared with stakeholder group on April 17th

Deployment Recommendations

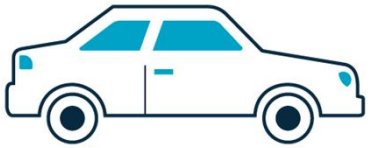
- Project Development
- General Functional Areas
  - Traffic Management
  - Transit Management
  - Traveler Information
  - Transportation Management Center
  - Performance Measures
  - Bicycle Technology
  - Communications



Prioritization Criteria

Safety

40%



Mobility

25%

Accountability

20%

Regional Support

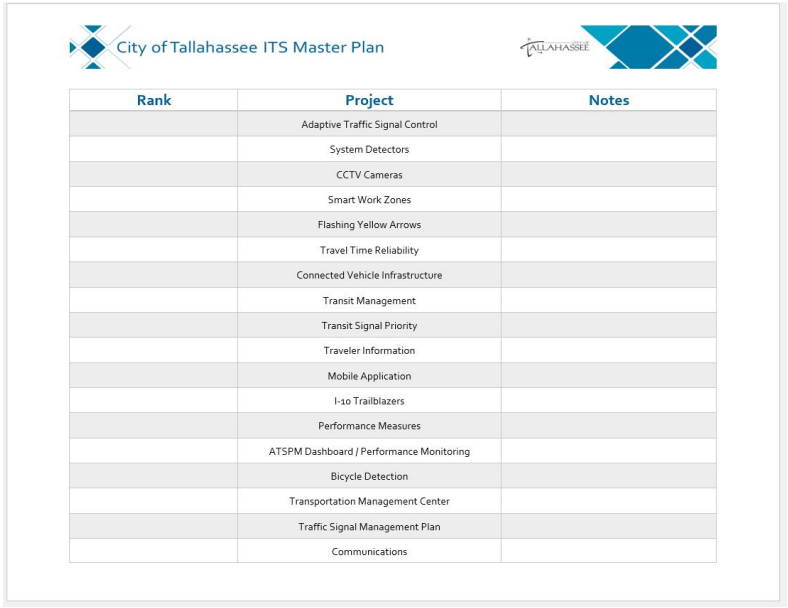
15%

Regional Support

- In some instances, it may be possible to have a proposed project satisfy a significant need that is not demonstrated through available datasets.
- Additional consideration was given to stakeholder input on the importance of the needs specific to each project and is accounted for in the regional support criterion.

Interactive Stakeholder Workshop

- Worksheets with project list
- Think of what's important to your department
- We want your input!



City of Tallahassee ITS Master Plan

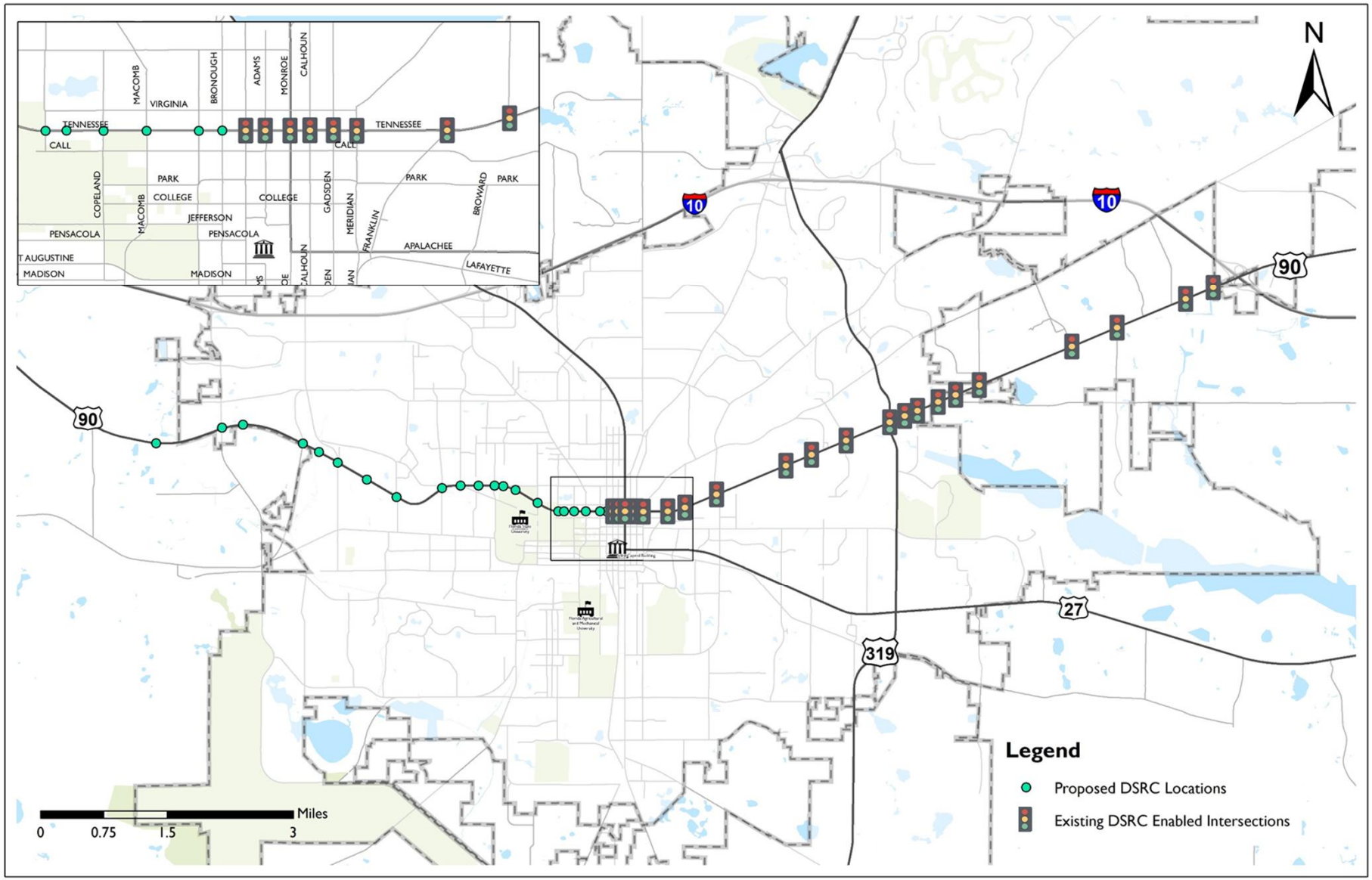
Rank	Project	Notes
	Adaptive Traffic Signal Control	
	System Detectors	
	CCTV Cameras	
	Smart Work Zones	
	Flashing Yellow Arrows	
	Travel Time Reliability	
	Connected Vehicle Infrastructure	
	Transit Management	
	Transit Signal Priority	
	Traveler Information	
	Mobile Application	
	I-10 Trailblazers	
	Performance Measures	
	ATSPM Dashboard / Performance Monitoring	
	Bicycle Detection	
	Transportation Management Center	
	Traffic Signal Management Plan	
	Communications	

Project List

- Traffic Management
  - Adaptive Traffic Signal Control
  - System Detectors
  - Cabinet Upgrades
  - Switch Replacement
  - CCTV Cameras
  - Smart Work Zones
  - Flashing Yellow Arrows
  - Travel Time Reliability
  - ATMS Upgrade
  - Connected Vehicle Infrastructure
- Transit Management
  - Transit Signal Priority
- Traveler Information
  - Mobile Application
  - I-10 Trailblazers
- Performance Measures
  - ATSPM Dashboard / Performance Monitoring
- Bicycle Technology
  - Bicycle Detection
- Transportation Management Center
  - Traffic Signal Management Plan
- Communications
  - Redundancy Plan

Connected Vehicle Infrastructure

- Following successful testing of the pilot corridor, this project extends the Dedicated Short Range Communications (DSRC) deployment east along US 90 (Tennessee Street).
- The additional 21 intersections extends the corridor to create a 15-mile connected vehicle test bed for the City of Tallahassee.

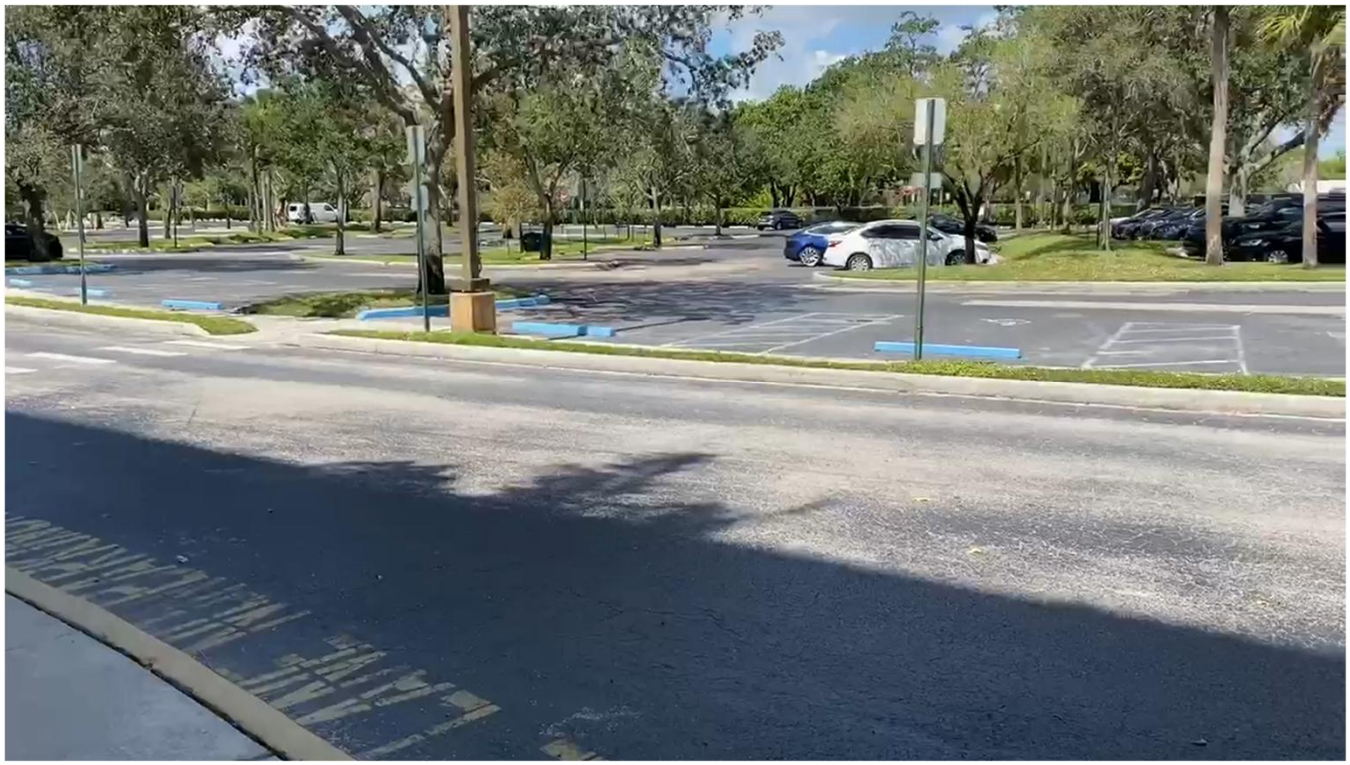

N
MACOMB
VIRGINIA
BRONOUGH
ADAMS
MONROE
CALHOUN
TENNESSEE
CALL
COPELAND
PARK
COLLEGE
JEFFERSON
PENSACOLA
GADSDEN
MERIDIAN
FRANKLIN
BROWARD
APALACHEE
LAFAYETTE
T AUGUSTINE
MADISON
10
90
27
319
Legend
Proposed DSRC Locations
Existing DSRC Enabled Intersections
Miles
0
0.75
1.5
3

SOCIETY OF AUTOMOTIVE ENGINEERS (SAE) AUTOMATION LEVELS

Full Automation

0	1	2	3	4	5
No Automation	**Driver Assistance**	**Partial Automation**	**Conditional Automation**	**High Automation**	**Full Automation**
Zero autonomy; the driver performs all driving tasks.	Vehicle is controlled by the driver, but some driving assist features may be included in the vehicle design.	Vehicle has combined automated functions, like acceleration and steering, but the driver must remain engaged with the driving task and monitor the environment at all times.	Driver is a necessity, but is not required to monitor the environment. The driver must be ready to take control of the vehicle at all times with notice.	The vehicle is capable of performing all driving functions under certain conditions. The driver may have the option to control the vehicle.	The vehicle is capable of performing all driving functions under all conditions. The driver may have the option to control the vehicle.

Looking to the Future



Industry Trends

- Babcock Ranch
  - autonomous shuttle service providing rides to residents and visitors from the town center to amenities and residential neighborhoods
  - developed a 5-year plan integrating both autonomous transportation services to provide guests and residents alternatives to personally owned vehicles
    - “On Demand” local autonomous rides for travel within Babcock Ranch
    - autonomous package and goods delivery to and from Babcock Ranch businesses and homes

Industry Trends

- Suntrax
  - 475-acre Central Florida research and development facility
  - connected and autonomous vehicles are being tested, advanced, and readied for full-scale public deployment
  - features a variety of projects like a mini-city, a simulated airport drop off and pick up location and a roadway geometry track where researchers will test how vehicles handle different terrain

The multi-lane track is the only high-speed autonomous car testing facility in the southeastern U.S.

Challenges

- Safety Issues
  - Integration onto the road network with appropriate signage and markings in place or updated
- Public Perception
- Vehicle Certification
- Data Overload
  - Evaluate how existing communication networks will be able to support future CAV and connected traveler data

Transit Signal Priority

- This project proposes StarMetro Route L (Live Oak) as the recommended TSP expansion corridor. Implementation along this high transit corridor is recommended based on available ridership data.
- As more transit data (ridership, on time arrival, etc.) becomes available, reevaluation of the transit routes for ideal TSP deployment is recommended.

Traffic Signal Management Plan

- This document will provide step-by-step instructions for current activities related to traffic signal design, operations, maintenance, and management.
- This project will clearly define objectives, relating them to the City's goals, and offers a structure that shows how the activities of all staff involved in traffic signal management support those objectives. A staffing plan with additional recommended operator positions is included in this project.

Geographic Projects

Stakeholder Priority	Project Title
	Adaptive Traffic Signal Control (US 90)
	Adaptive Traffic Signal Control (US 27)
	CCTV Cameras – Group A
	CCTV Cameras – Group B
	CCTV Camera Upgrade
	Travel Time Reliability System – Group A
	Travel Time Reliability System – Group B
	Connected Vehicle Infrastructure
	I-10 Trailblazers
	Bicycle Detection

Non-Geographic Projects

Stakeholder Priority	Project Title
	System Detectors
	Cabinet Upgrades
	Managed Field Ethernet Switch Replacement
	Smart Work Zones
	FYA Upgrades Pilot
	ATMS Upgrade
	Transit Signal Priority
	Mobile Application Pilot
	ATSPM Dashboard/Performance Monitoring
	Traffic Signal Management Plan
	Communications Network – Redundancy Expansion

Implementation Plan

- The rankings will be used to group the recommended projects into tiered deployment timeframes. For example, the top three highest ranking projects in each category will be grouped as near-term deployments.
  - Near-Term (2 to 5 year horizon)
  - Mid-Term (5 to 10 year horizon)
  - Long-Term (over 10 year horizon)

Additional Factors

- Project Dependence
- Proximity to Planned Programmed Roadway ITS Project
- Proximity of Proposed Project to Existing ITS Project
- Funding Opportunities/Availability

Next Steps

- Finalize Project Prioritization
- Executive Summary
- Final Report

Questions?

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