



Triangle Region ITS Deployment Roadmap

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What is ITS?

- ITS stands for “Intelligent Transportation Systems”
- Blanket term for a variety of activities that use advanced technologies and strategies to enhance transportation safety, efficiency, and productivity
- ITS is often incorporated as part of a broader Transportation Systems Management and Operations (TSMO) strategy or program
- Examples of ITS include:
 - Traffic signal system interconnection/coordination
 - In-vehicle traveler information (connected vehicles)
 - Emergency vehicle and/or transit vehicle signal pre-emption



Triangle Region Intelligent Transportation Systems (ITS) Work Group

- Central Pines Regional Council convenes a workgroup on a quarterly basis to discuss ITS-related projects and work toward implementation of the region's *ITS Strategic Deployment Plan* (adopted in 2020) – this work is funded through CAMPO and Triangle West TPO
- Includes representatives from:
 - Various NCDOT units
 - Local governments
 - MPOs
- Responsibilities include:
 - Implementation of the *Triangle Region ITS Strategic Deployment Plan*
 - Championing projects and strategies for continued progress
 - Regularly sharing updates on ITS projects in the region
 - Guiding plan updates as needed





Triangle Region ITS Strategic Deployment Plan

- This plan, adopted in 2020, provides a framework for the near-term, mid-term, and long-term deployment of ITS technologies in the region
- The plan covers both CAMPO and Triangle West
- Provides high-level outline of proposed projects, for example:
 - Transit Signal Priority/Bus Rapid Transit
 - Unified Transit Farebox System
 - Traffic Signal System Upgrades in Multiple Municipalities
 - Integrated Corridor Management
 - Expand Travel Information Coverage
 - Managed Motorways
 - Adaptive Traffic Signal Systems





Why Create the *ITS Deployment Roadmap*?

- There was recognition among the work group members that a bit more strategic thinking was needed in the short term in order to identify and move forward with manageable implementation of the 2020 ITS plan
- This led us to hire Exult Engineering to work with the group and identify actionable steps for moving forward strategically, which we are calling the ITS Deployment Roadmap
- Organized the Roadmap document around six overarching TSMO strategies:
 - Regional Planning
 - Freeway Operations
 - Arterial Operations
 - Technology/Pilot Implementation
 - Operations & Maintenance
 - Data Management



Going From This...

LOW = (\$) UP TO \$3M, MEDIUM = (\$\$) \$3M TO 10M, HIGH = (\$\$\$) OVER \$10M

PROJECT TYPE	NEAR-TERM (0-5 YEARS)	MID-TERM (5-10 YEARS)	LONG-TERM (10+ YEARS)
Transit Signal Priority/Bus Rapid Transit	\$\$		
Unified Transit Farebox System	\$		
Implement AVL technology for Transit	\$\$		
New Municipal Traffic Signal System - Fuquay-Varina (U-6022)	\$\$		
New Municipal Traffic Signal System - Knightdale (U-6026)	\$		
New Municipal Traffic Signal System - Morrisville (U-5967)	\$		
New Municipal Traffic Signal System - Wake Forest (U-6023)	\$\$		
New Municipal Traffic Signal System - Clayton (U-5943) ¹	\$		
Upgrade Municipal Traffic Signal System - Apex (U-6117)		\$	
New Municipal Traffic Signal System - Garner (U-6194)		\$	
Upgrade Municipal Traffic Signal System- Raleigh (U-6119)		\$\$	
New Municipal Traffic Signal System - Holly Springs			\$\$
Traffic Signal System Upgrade City of Durham (U-5968)	\$\$\$		
Traffic Signal System Upgrade - Town of Cary		\$\$	
Complete Regional Fiber Network - NCDOT ²			\$\$
Consolidate Municipal Signal Systems Management ³			\$
Establish Agreements for System Consolidation and Management	\$		
Assess New Sub-Regional TMC		\$	
Centralize Data Warehousing and Distribution		\$	
Coordinated Corridor Traffic Signal Timing	\$\$		
Establish software and hardware platforms to serve connected vehicles and automated vehicles	\$		
Regional standards for software, hardware, and communication platforms	\$		
Inventory current deployments	\$\$		
Replace/upgrade outdated devices	\$		
Integrated Corridor Management ⁴			\$\$
Managed Motorways	\$\$\$		
Training for Incident Response	\$		
Emergency Pre-emption	\$		
Adaptive Traffic Signal Systems		\$\$	
Occupancy Detection in Parking Decks		\$	
Staff Training for Operation and Maintenance of ITS Equipment	\$		
Expand Travel Information Coverage	\$		

- Strategic Deployment Plan provides high-level list and descriptions of projects



To This...



- Will serve as roadmap for guiding the work group's activities/priorities
- Identifies necessary tasks/strategies, strategy champions, general timelines (near, mid, long-term)
- Lays out action items for the work group to pursue/implement over the next several years



Regional ITS Deployment Roadmap Examples

OPERATIONS & MAINTENANCE STRATEGY						
Timing & Order	Project & Champion	Description	SDP Alignment (A) Predecessor (P) Program or Project Grouping (G)	Related STIP & Constr. Yr.	Cost	Grant Eligibility
N.18	Address Signal O&M Funding Gap Champ: CPRC	Establish regional plan for addressing signal O&M funding gap based on outcomes of NCDOT Signal Management Plan.	A: N/A P: C.4 G: Program	–	\$ \$	
N.19	Western Wake SS Agreements Champ: CAMPO	Establish Agreements among Western Wake Signal System Partners Establish agreements to support signal system integration.	A: SDP #16,17 P: C.4 G: Program	–	\$	
N.20	Eval IAM, IWOM, and NMS Champ: NCDOT	Evaluate asset management, work order management and network monitoring platforms Evaluate potential regional ITS/fiber asset management/Work order/Network monitoring platform for the region.	A: SDP #17, 19, 23, 24, 31 P: N/A G: Program	–	\$	



Highlighted Regional Planning Strategies

Currently Underway	Near-Term	Mid-to-Long Term
<ul style="list-style-type: none">• TSMO Deployment Guide (NCDOT)• Middle Mile Broadband Strategy (NCDOT)• Statewide ITS Communications Plan (NCDOT)• Signal Management Plan (NCDOT)	<ul style="list-style-type: none">• Fiber & Technology Deployment Master Plan (CPRC & Work Group)• TSMO Technology Standardization Workshops (CPRC & Work Group)• TSMO Technology Pilot Approach (CPRC & Work Group)	<ul style="list-style-type: none">• Regional ITS Strategic Deployment Plan Update (should happen every 5-10 years; last occurred in 2020)



Questions or Feedback?

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