

Atlanta Regional Commission Regional TSMO Planning

March 17, 2021

ITS Carolinas Annual Meeting

Maria Roell: Mroell@atlantaregional.org

TSMO Plan Vision and Goals

Goals / Key Outcomes



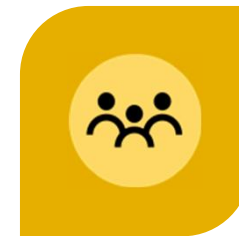
OPTIMIZING
SAFETY



RELIABLE TRAVEL
TIMES



EFFICIENT,
SEAMLESS TRAVEL



EQUITABLE
ACCESS



ENVIRONMENTAL
BENEFITS

Foundational Elements



Collaboration



Philosophy focused on
moving people and goods



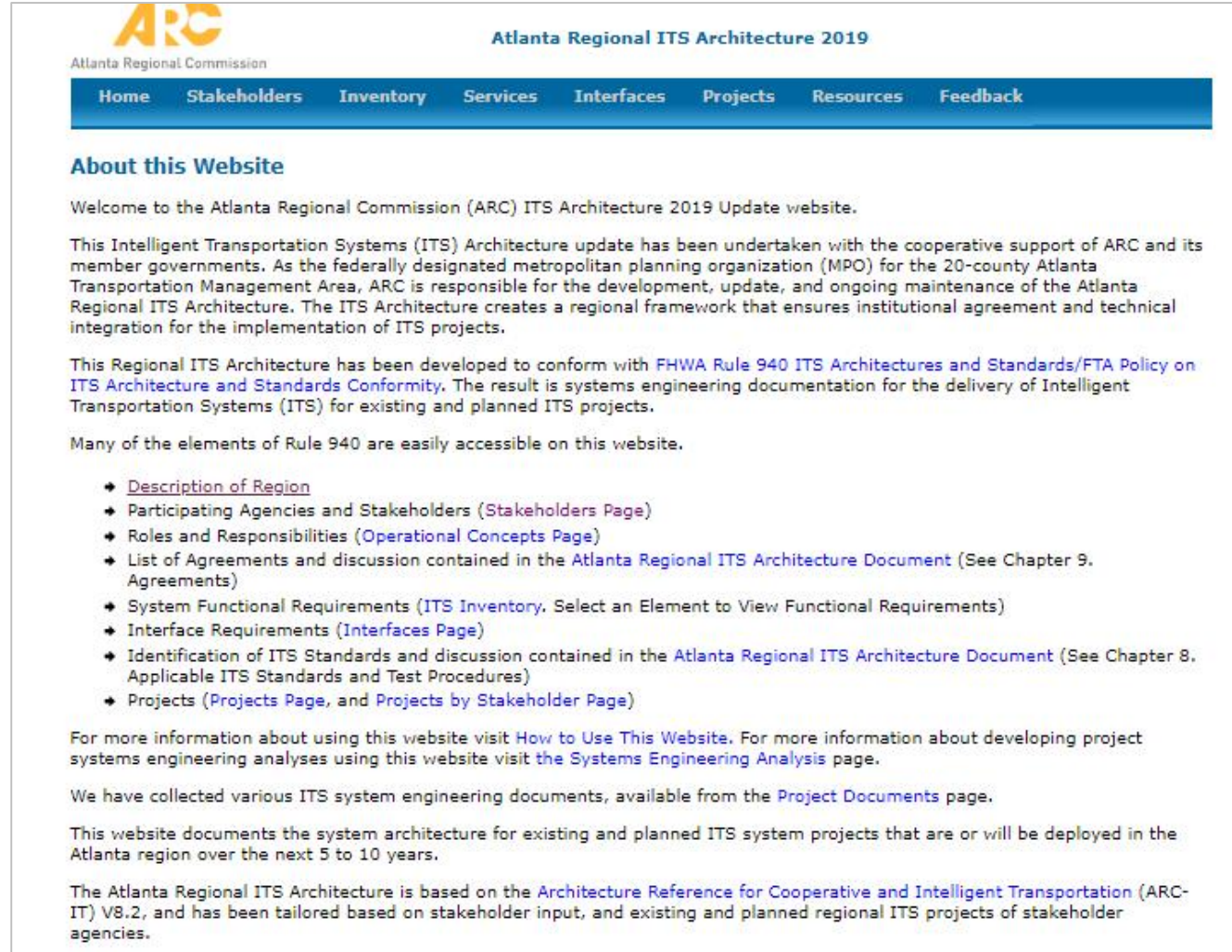
Data sharing



Culture of innovation

ITS Architecture Update

- Stakeholders - 55
- Elements - 210
- Service Package Diagrams - 248
- Interfaces - 531
- Projects - 97



ARC
Atlanta Regional Commission

Atlanta Regional ITS Architecture 2019

Home Stakeholders Inventory Services Interfaces Projects Resources Feedback

About this Website

Welcome to the Atlanta Regional Commission (ARC) ITS Architecture 2019 Update website.

This Intelligent Transportation Systems (ITS) Architecture update has been undertaken with the cooperative support of ARC and its member governments. As the federally designated metropolitan planning organization (MPO) for the 20-county Atlanta Transportation Management Area, ARC is responsible for the development, update, and ongoing maintenance of the Atlanta Regional ITS Architecture. The ITS Architecture creates a regional framework that ensures institutional agreement and technical integration for the implementation of ITS projects.

This Regional ITS Architecture has been developed to conform with [FHWA Rule 940 ITS Architectures and Standards/FTA Policy on ITS Architecture and Standards Conformity](#). The result is systems engineering documentation for the delivery of Intelligent Transportation Systems (ITS) for existing and planned ITS projects.

Many of the elements of Rule 940 are easily accessible on this website.

- ➔ [Description of Region](#)
- ➔ [Participating Agencies and Stakeholders \(Stakeholders Page\)](#)
- ➔ [Roles and Responsibilities \(Operational Concepts Page\)](#)
- ➔ [List of Agreements and discussion contained in the Atlanta Regional ITS Architecture Document \(See Chapter 9, Agreements\)](#)
- ➔ [System Functional Requirements \(ITS Inventory, Select an Element to View Functional Requirements\)](#)
- ➔ [Interface Requirements \(Interfaces Page\)](#)
- ➔ [Identification of ITS Standards and discussion contained in the Atlanta Regional ITS Architecture Document \(See Chapter 8, Applicable ITS Standards and Test Procedures\)](#)
- ➔ [Projects \(Projects Page, and Projects by Stakeholder Page\)](#)

For more information about using this website visit [How to Use This Website](#). For more information about developing project systems engineering analyses using this website visit the [Systems Engineering Analysis](#) page.

We have collected various ITS system engineering documents, available from the [Project Documents](#) page.

This website documents the system architecture for existing and planned ITS system projects that are or will be deployed in the Atlanta region over the next 5 to 10 years.

The Atlanta Regional ITS Architecture is based on the [Architecture Reference for Cooperative and Intelligent Transportation \(ARC-IT\) v8.2](#), and has been tailored based on stakeholder input, and existing and planned regional ITS projects of stakeholder agencies.

<http://itsarchitecture.atlantaregional.org/>

Data, Research, Other Products

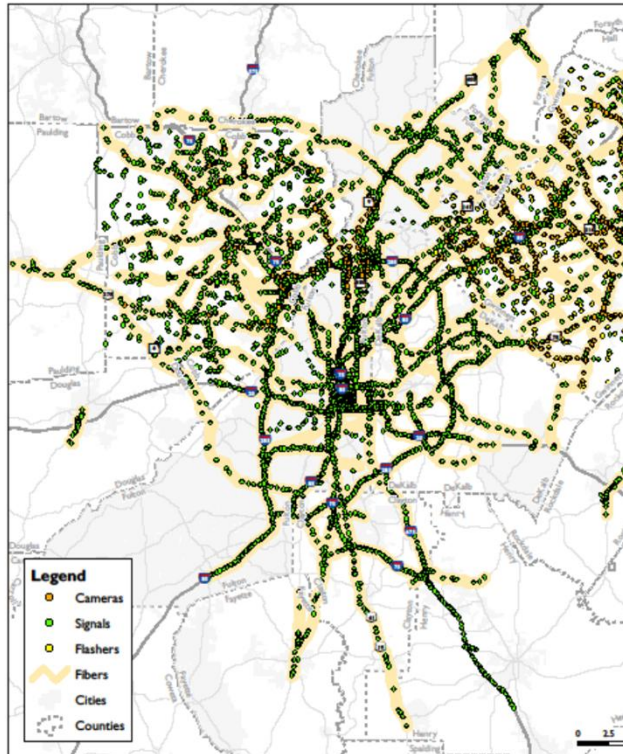
Regional Inventory

Pilot Project Screening Assessment

Data Governance

Local Agency Deployment Guide

local relevance + regional impact



SCREENING METHODOLOGY	
COST	Low: Requires significant investment of time and/or money to implement
	Medium: Requires moderate investment of time and/or money to implement
	High: Requires minimal investment of time and/or money to implement
GOALS	SAFETY Applying technology and context-sensitive approaches to achieve zero fatalities
	EFFICIENT, SEAMLESS TRAVEL Coordinated systems across jurisdictions and modes; accessible, real-time travel information
	EQUITABLE ACCESS People of all ages, abilities, languages, backgrounds, and incomes have access to safe, reliable, efficient mobility options
	RELIABLE TRAVEL TIMES Managing planned and unplanned disruptions to reduce unexpected delays
COMPLEXITY	Low: Build off of existing initiative/infrastructure
	Medium: New initiative, but concept of operations is vetted and understood
	High: Significant integration, research, development, and/or multi-jurisdictional coordination required
REGIONAL IMPACT	High: Project expected to impact the region significantly
	Medium: Project expected to impact multiple jurisdictions
	Low: Project expected to impact local jurisdiction only
CONCEPTUALITY	1 Builds off of existing initiative and/or infrastructure
	2 Location defined; Goal defined
	3 Idea moderately refined, further development required
	4 Deployment requested; needs extensive research beforehand
	5 Study/research/non-deployment project



Data Governance Best Practice and Recommendations Report Transportation System Management and Operations (TSMO) Vision and Regional Intelligent Transportation Systems (ITS) Architecture Update

Final — May 24, 2019



TRAFFIC SIGNAL MANAGEMENT

Effective traffic signal management is proven to be one of the most cost-effective operational improvements; signal retiming typically provides a benefit to cost ratio ranging from 17:1 to 62:1. Traffic signals, the most common form of traffic control, are crucial to a transportation network and can enhance corridor operations. Efficiently managing traffic signals results in reduced congestion, reduced maintenance expenditures, and increased safety. FHWA defines traffic signal management as "organizing for the planning, maintenance, design, and operation of signalized intersections and traffic signal systems." Traffic signal timing programs can be basic and localized, such as to a single intersection, or more sophisticated, such as having various, advanced signal timing programs. Such systems require regular maintenance and frequent monitoring to maintain the efficiency of the signal system.



Support for Regional TSMO Goals

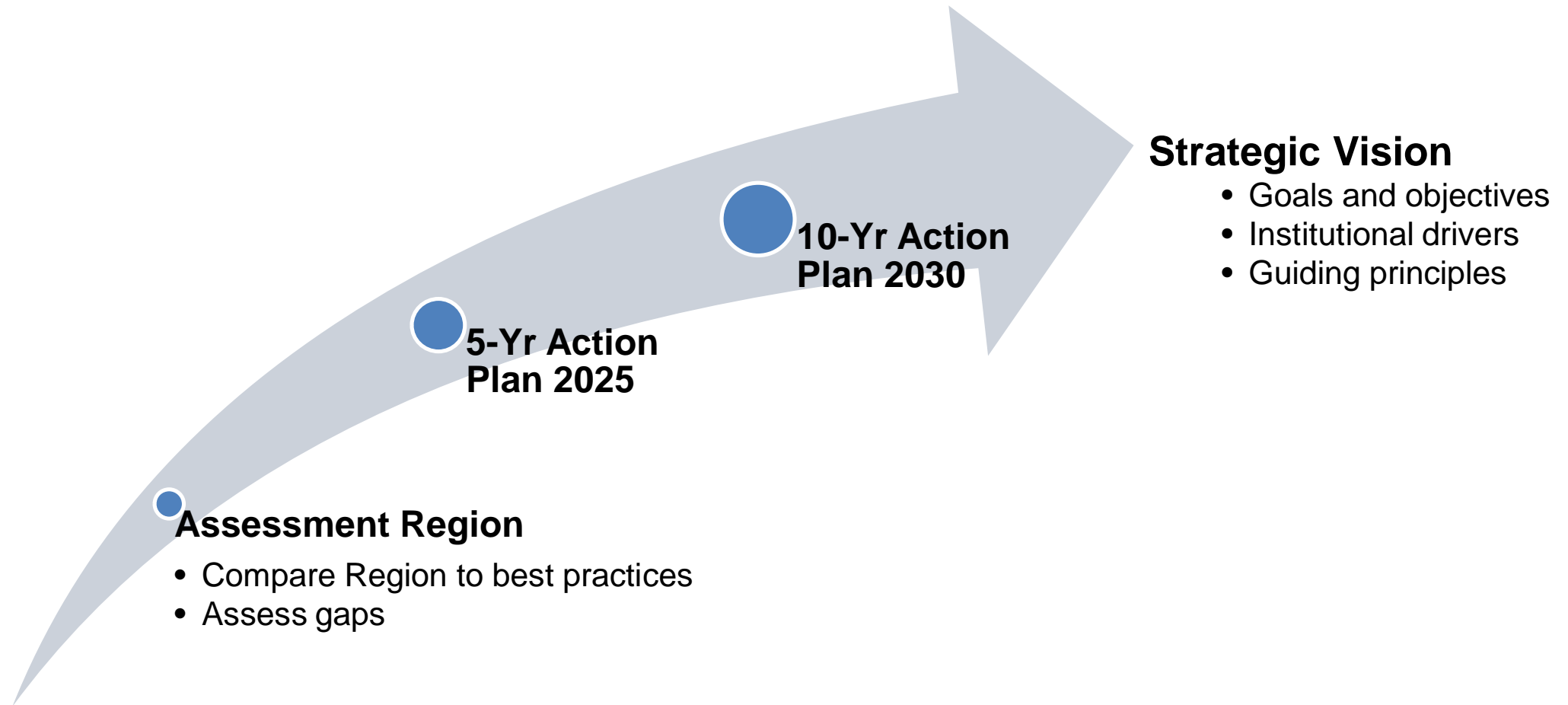
- Optimizing Safety**
Safety is enhanced with the use of traffic signal management by enhancing progression through intersections, which requires less stop-and-go traffic to reduce the number of crashes. In addition, emergency vehicle preemption reduces the risk for crashes by allowing the emergency vehicle to progress through the intersection with the appropriate signal indication.
- Reliable Travel Times**
More reliable travel times are realized through traffic signal management by enhancing the operational efficiency of corridors—getting more cars through a given corridor more effectively.
- Efficient, Seamless Travel**
Traffic signal management supports efficient, seamless travel by synchronizing the movement of vehicles along the corridor, ideally to prevent things such as "hitting every red light." By maintaining the signal system as well as adjusting the system as needed through frequent monitoring, traffic system management can also support efficient seamless travel by reducing the number of down devices or mistimed intersections due to out-of-date cycles.
- Environmental Benefits**
Reducing the congestion of high-volumes routes results in fewer vehicles idling and producing emissions. Reducing the amount of starts and stops that a motorist experiences will also reduce the amount of emissions produced by each vehicle.

Applications

Applications used to manage traffic signals vary widely in complexity and technology; from basic signal timings to coordinated systems that rely on real-time detection data and advanced software systems. With the use of coordination and communication between signals, traffic devices can adjust based on current traffic conditions—travel patterns along major corridors change significantly throughout the day due to commuter, school, shopping, special events, and other activities that generate traffic. Having signals and other supportive devices communicate with each other to respond to current conditions provide significant safety and mobility benefits and allows for a flexible system that responds to ever-changing corridor needs.

<https://atlantaregional.org/TSMO/>

Regional TSMO Strategic Plan



Strategic Initiatives

*Foundational
Elements
Focused
Initiatives*



Strengthen TSMO
Planning & Institutions



Enhance Data Sharing
& Management



Encourage TSMO
Innovation

*Deployment
Focused
Initiatives*



Deploy Connected &
Automated Vehicle
Technologies



Advance Regional
Coordination & Network
Communications



Strengthen Work Zone
& Event Management



Enhance Transit
Operations



Advance Mobility
as a Service

Initiative Actions

- 8 Initiatives
- 31 Actions
- 208 Checklist Steps



ACTION 1.1: ESTABLISH AND SUSTAIN A DIVERSE REGIONAL TSMO COMMITTEE

Description and Benefit to the Atlanta Region:

The Atlanta region has a wide array of organizations that are responsible for TSMO, yet the region does not currently have an established on-going working group or committee focused on TSMO coordination and collaboration. Several other metropolitan planning organizations (MPOs) around the country have TSMO-focused committees that bring together diverse regional stakeholders to ensure coordination of activities, to advance information sharing, and advance deployment of ITS solutions.⁹ A regional TSMO steering/implementation committee with representatives from public agencies, as well as the private and academia sectors, will serve as forum for advancing the region's TSMO vision by guiding the implementation of stated initiatives, supporting funding decisions, enhancing collaboration and information sharing, and tracking progress. This committee can coordinate with existing organizations such as ITS Georgia and events such as ConnectATL to support information sharing on TSMO and technology innovations.

Goals: Foundational Elements:

Stakeholders: ARC (Lead), GDOT, transit agencies, local agency stakeholders, academic institutions, and private service providers

ACTION 1.1 CHECKLIST		
TERM	ID	ACTION
NEAR	N1	Reach out to potential members of the Steering Committee and seek their participation
	N2	Establish rules of practice and operating procedures for the committee; this may become a collaboration effort with existing Committees rather than a traditional standing committee
	N3	Identify champions for each Initiative that will guide the implementation of the recommended actions
MID	M1	Hold meeting to assess impact of the committee and replace/add members if needed
LONG	L1	Continue to evolve the committee to meet current TSMO needs

Implementation

- Regional TSMO Subcommittee
 - First meeting February 17, 2021
 - Over 40 Attendees
- CV1K: Regional Connected Vehicle Program
- Joint Data Purchasing Program