Regional Transportation Systems Management and Operations (TSM&O) and Intelligent Transportation Systems (ITS) Architecture Update

Transit Operators Subcommittee
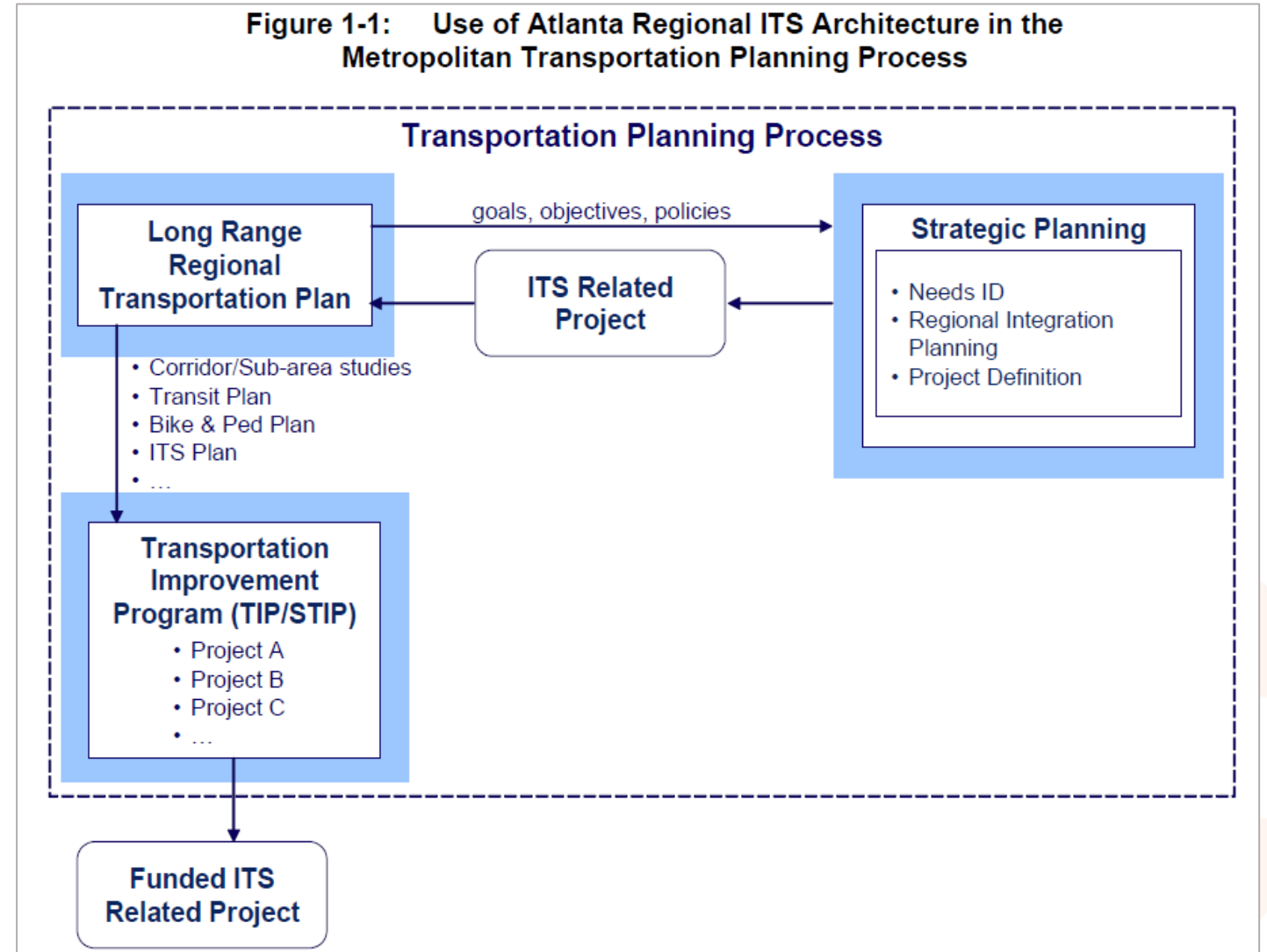
October 26, 2018

Key Definitions

- *Intelligent Transportation System*: Electronics, communications, or information processing used singly or in combination to <u>improve the efficiency or safety</u> of a surface transportation system

- *Regional ITS Architecture*: a regional framework for ensuring <u>institutional agreement and technical integration</u> for the implementation of ITS projects or groups of projects.

Why Is A Regional Architecture Required?

- Any region (TMA) currently implementing ITS projects

- To ensure conformity to the National ITS Architecture

- To guide development of ITS projects and programs and ensure consistency with ITS projects in the RTP/TIP

- To share vital info between agencies and incident responders, that enables them to manage and operate the system more effectively and to provide timely info to the public

Figure 1-1: Use of Atlanta Regional ITS Architecture in the Metropolitan Transportation Planning Process

Transportation Planning Process

Long Range Regional Transportation Plan

goals, objectives, policies

ITS Related Project

Strategic Planning
- Needs ID
- Regional Integration Planning
- Project Definition

- Corridor/Sub-area studies
- Transit Plan
- Bike & Ped Plan
- ITS Plan
- ...

Transportation Improvement Program (TIP/STIP)
- Project A
- Project B
- Project C
- ...

Funded ITS Related Project

Who Must Be Included in Developing A Regional Architecture?

- Highway agencies
- Public safety agencies
- **Transit operators**
- Federal lands agencies
- State motor carrier agencies
- Other

General Architecture Content

ARC-IT Service Package Areas

Why Now?

- Current Regional ITS Architecture was written in 2004

- Coordination between agencies is crucial in technology deployment
  - Signal priority vendors, IoT, 5G/DSRC

- Handle Major System Disruptions

Politico.com

Ajc.com

Task List

Develop a Regional TSM&O Vision

Document Current TSM&O Inventory

Research Data Governance Best Practices
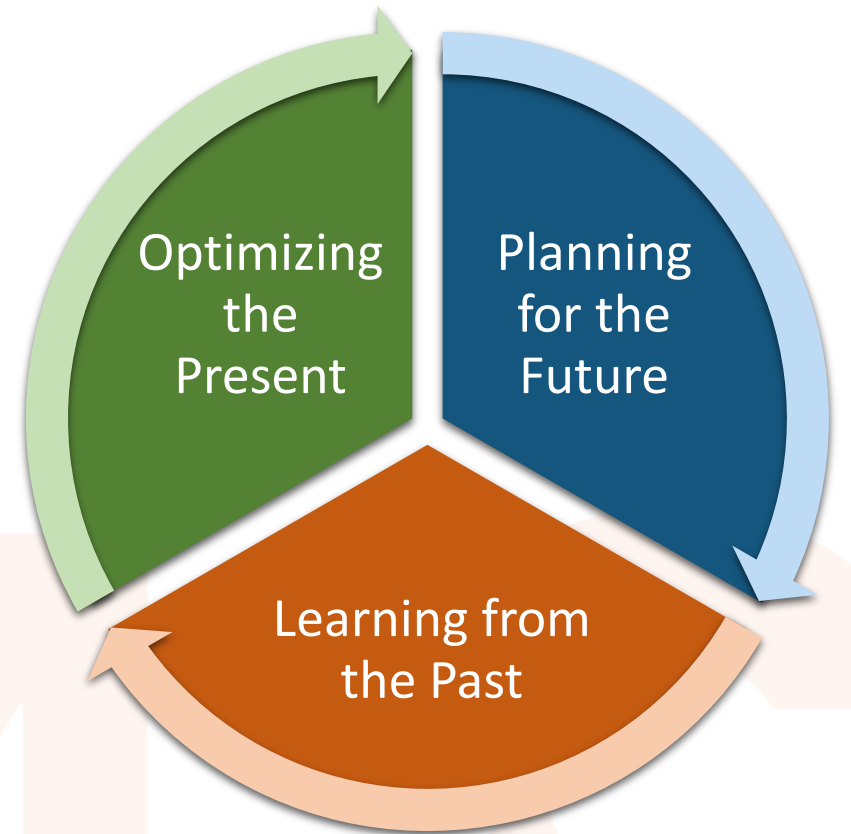
Regional ITS Architecture Update

Identify Pilot Concepts for Advanced Technology Deployment

Develop Local Agency Deployment Guide

Develop Regional Technology Assessment and Strategic Deployment Plan

Stakeholder Engagement Opportunities

- Web-Based Survey

- Interviews/web meetings for architecture

- Stakeholder workshops
  1. Establishing the Regional TSM&O/ITS Vision
  2. Building a Technical Foundation: Data and ITS Architecture
  3. Accelerating Deployment: Identifying Pilot Concepts
  4. TSM&O Plan Draft Presentation and Discussion

- Regular, on-going technical/operations coordination beyond 2019

Optimizing the Present

Planning for the Future

Learning from the Past

Schedule

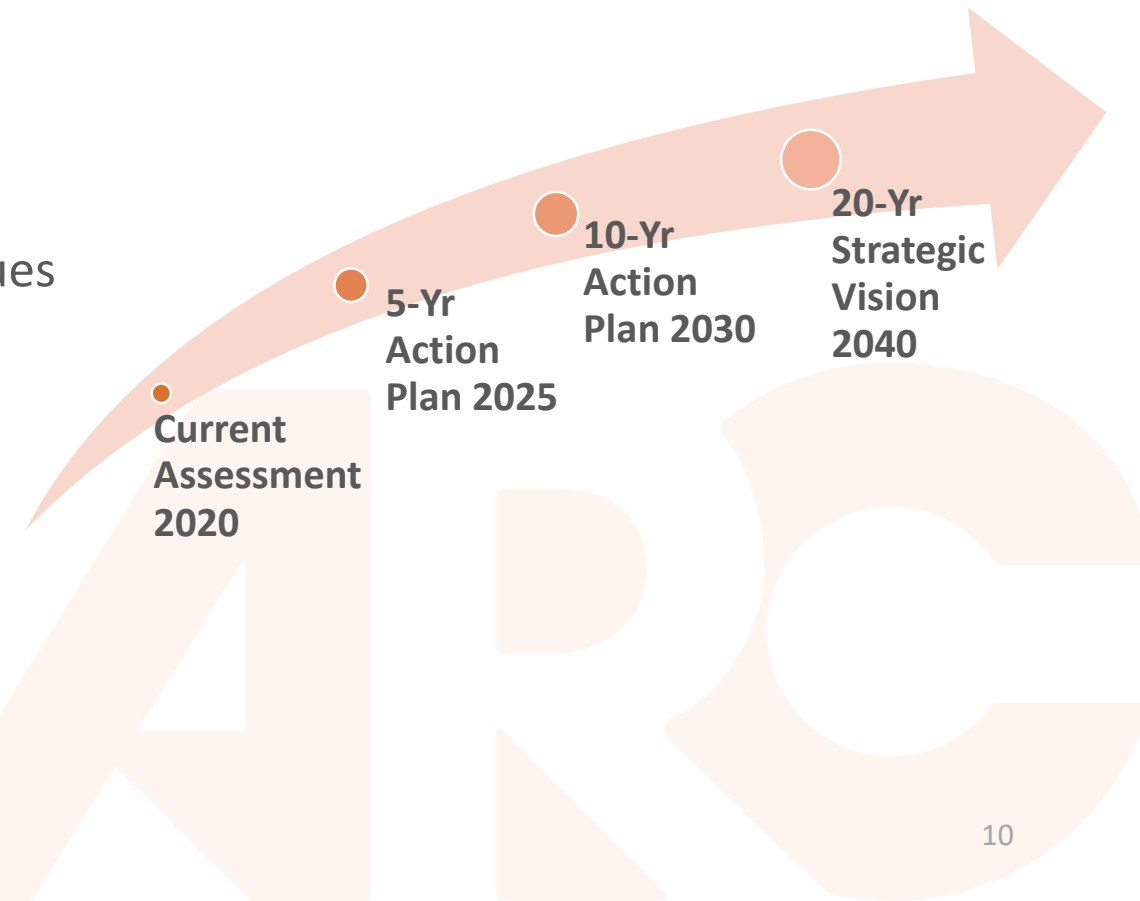Start: October 2018   End: March 2020

Workshops

1. December 2018: Establishing the Regional TSM&O/ITS Vision
2. March 2019: Building a Technical Foundation: Data and ITS Architecture
3. July 2019: Accelerating Deployment/Pilot Concepts
4. December 2019: TSM&O Plan Draft Presentation and Discussion

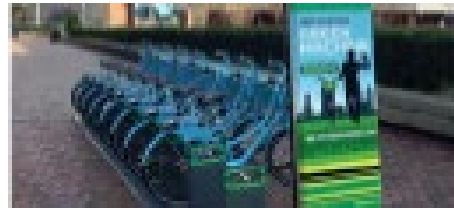| Task	2018			2019												2020	
	Oct	Nov	Dec	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb
Task 1: Project Management and Visioning																	
Project Management Plan (PMP)	✎	📄															
Stakeholder Enagement Plan (SEP)	✎	📄															
Visioning, Goals, Objectives			**W1**			📄											
Task 2: Regional Baseline Inventory					📄												
Task 3: Data Governance Best Practices Report							✎	M	📄								
Task 4: Regional ITS Architecture Comprehensive Update			**W1**		**W2**		✎	M	📄								
Task 5: Identification of Pilot Concepts										**W3**		✎	M		📄		
Task 6: ITS/TSMO Local Agency Deployment Guide										**W3**		✎	M		📄		
Task 7: Technological Assessment and Regional ITS/TSMO Strategic Deployment Plan																	
Technical Assessment								✎									
Regional ITS/TSMO Strategic Deployment Plan												M		✎	**W4**	📄	
Executive Summary																✎	📄

Outcomes of the TSMO Vision and Deployment Plan

Building on previous ARC research and plans and stakeholder outreach the TSMO Vision and Strategic Deployment Plan will:

- Develop agreed-upon regional TSMO priorities and goals to guide investments

- Use a proactive approach to advance new techniques using emerging technologies, data, and business model

- Foster a culture that promotes TSMO across all levels of government

- Improve sharing of real-time data among partner agencies and with the private sector

Current Assessment 2020

5-Yr Action Plan 2025

10-Yr Action Plan 2030

20-Yr Strategic Vision 2040

Regional TSM&O Vision

2040 Vision

Connected and automated vehicles

New data sources

New modal options and business models

TSMO today

Data Governance Best Practices

- Data sharing between public and private is increasing
- Need standards to ease technological advancements
  - Format
  - Ownership
  - Management/Clearinghouse
  - Exchange with Private Sector
- Questions to consider
  - What is the value of sharing data between public and private entities?
  - And, what are security or legal risks?

ITS Architecture Sample:
Transit Signal Priority
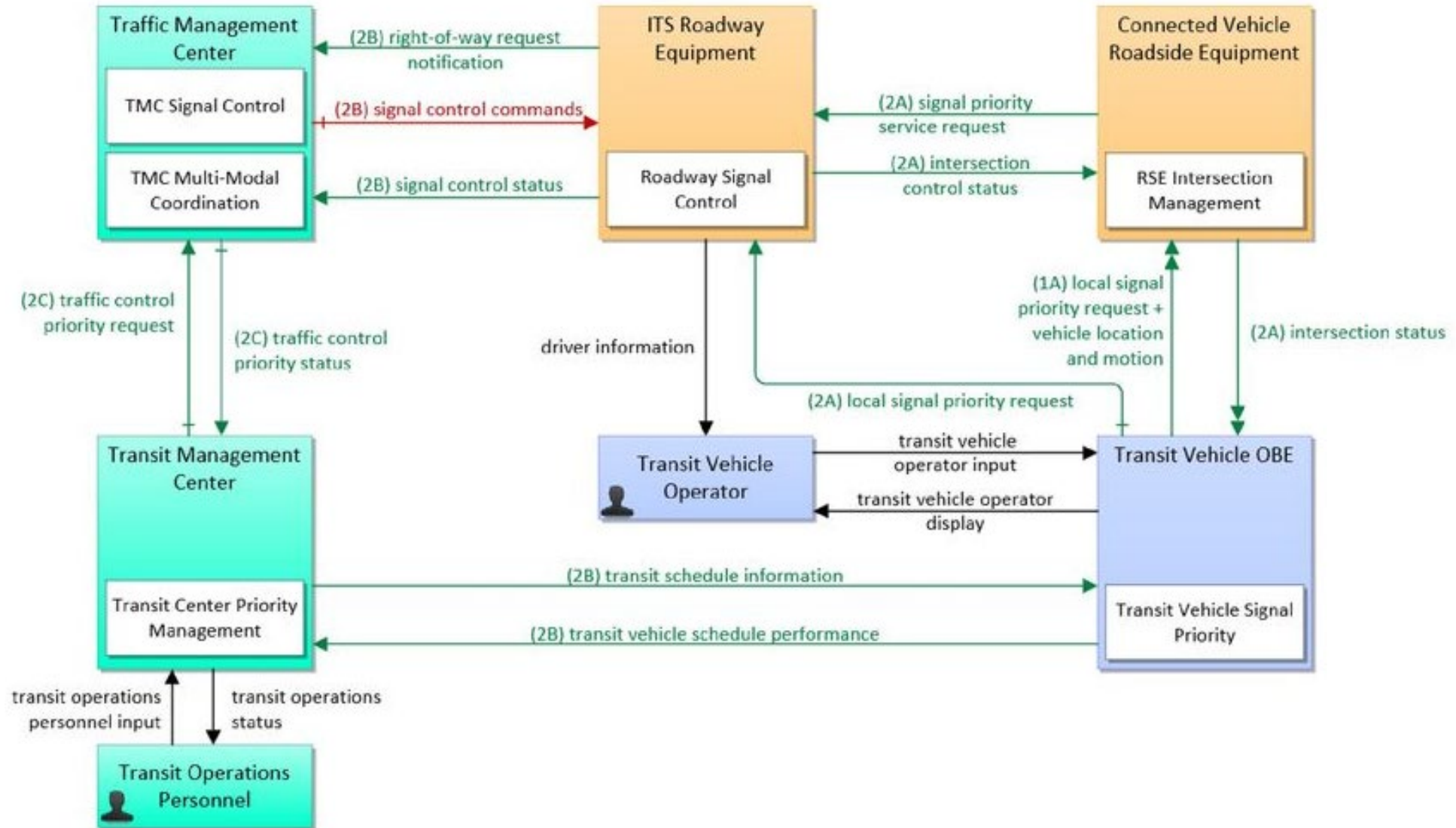
Identify Pilot Concepts

- Current efforts and Regional Vision
  - Regional Traffic Operations Program (RTOP)
  - MARTA Mobile Ticketing
- Identify issues conducive to technology or TSM&O solutions
- Address recommendations from regional planning efforts
  - Walk Bike Thrive
  - Livable Centers Initiative
  - Atlanta Regional Freight Mobility Plan Update
- Potential Concepts
  - Smart Cities
  - Mobility as a Service

Current Transit ITS Projects and Pilots

1. Gwinnett and MARTA micro transit
2. Peachtree Corners/Chamblee autonomous shuttle
3. Transit signal priority
    1. City of Marietta
    2. OptiCom vs Glance
4. MARTA mobile ticketing
5. MARTA Audio Visual Information System (AVIS)
6. SRTA/GRTA CAD/AVL

Questions?

mroell@atlantaregional.org