



# TSMO Vision and Regional ITS Architecture Update

ITS GA Meeting  
07/31/2019



Kimley»Horn  
Expect More. Experience Better.



Lumenor  
Consulting Group



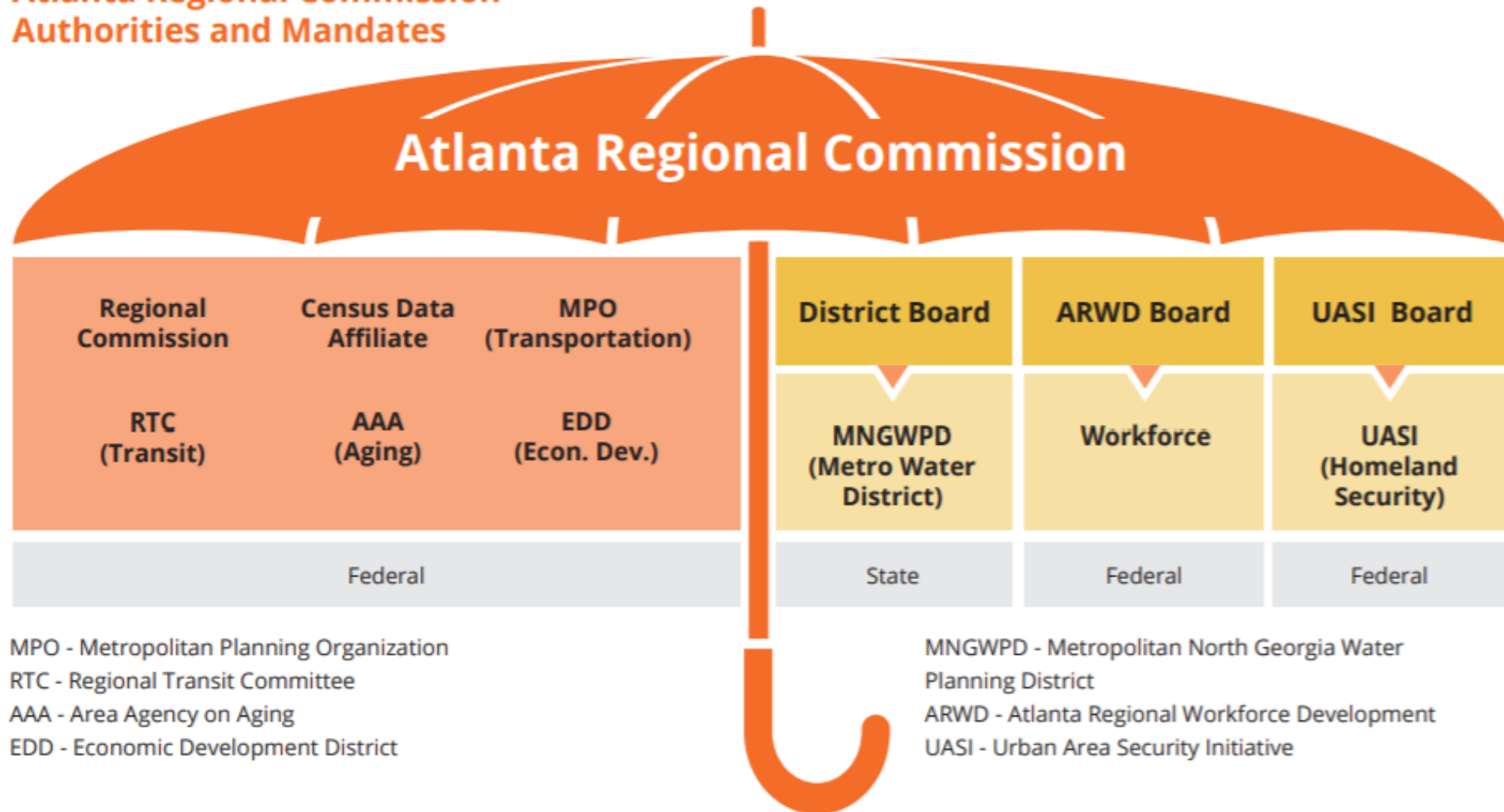
# Agenda

- ARC Overview
- Regional TSMO and ITS Architecture Update
- ARC Funding Overview
- 2020 ConnectATL Summit

ARC

# ARC Overview

## Atlanta Regional Commission Authorities and Mandates



# Regional Transportation Plan (RTP)

## ➤ 2050 Themes

- Technology
- Transit Expansion
- Affordability

## ➤ Schedule

- Public Engagement  
October 2019
- Adoption February 2020

**ATLANTA REGION'S PLAN** | Join us for a conversation about the future.

ARC  
Atlanta Regional Commission

*dinner*  
**HOST!**  
a civic dinner  
*and* give us your input!  
[cividdinners.com/ARC-futurefocus](http://cividdinners.com/ARC-futurefocus)

*game*  
**PLAY!**  
at urban planning  
*and* give us your input!  
[futurerefocusatl.org](http://futurerefocusatl.org)

*teen improv*  
**LAUGH!**  
with Dad's Garage  
*and* give us your input!  
[atlantaregionsplan.org/update](http://atlantaregionsplan.org/update)

# TSMO Vision and Goals



Transportation systems across the Atlanta region are managed and operated to **optimize safe, reliable, and efficient travel for all system users – people and freight – contributing to sustainable economic growth and a high quality of life.**

## Key Outcomes / Goals



### Optimizing safety

Applying technology and context-sensitive approaches to achieve zero fatalities



### Reliable travel times

Managing planned and unplanned disruptions to reduce unexpected delays



### 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

## Foundational Elements



Operations philosophy focuses on moving people and goods, rather than vehicles



Collaboration across jurisdictional boundaries, public and private sectors, and service providers



Data sharing across public and private data providers and users



Fostering a culture of innovation and adaptability to change

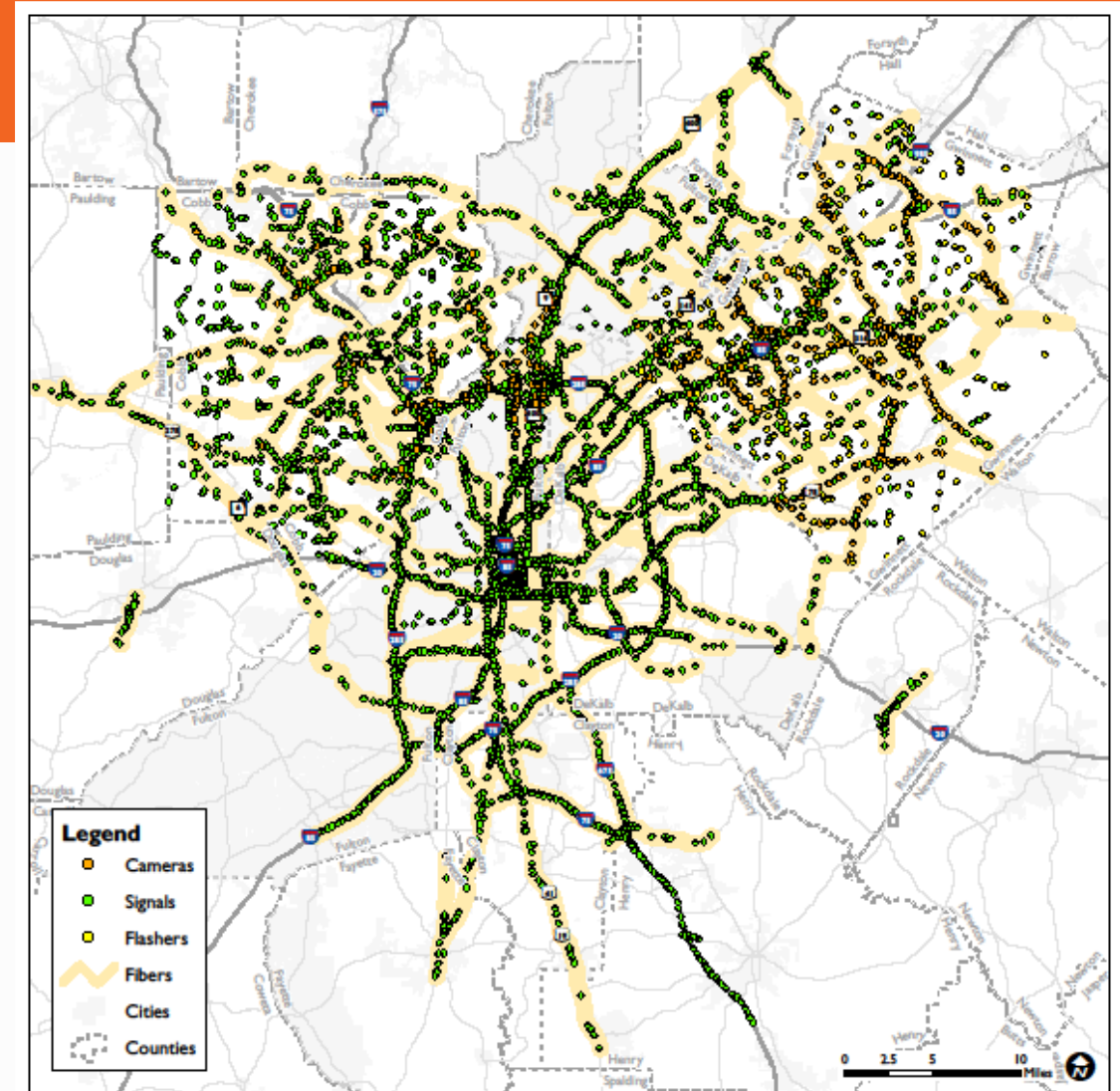
# Regional Inventory

## Regional ITS Assets

- Fiber (NexusWorx)
- Connected Traffic Signals
- Cameras
- Warning Systems
- Other

## Regional Transit Assets

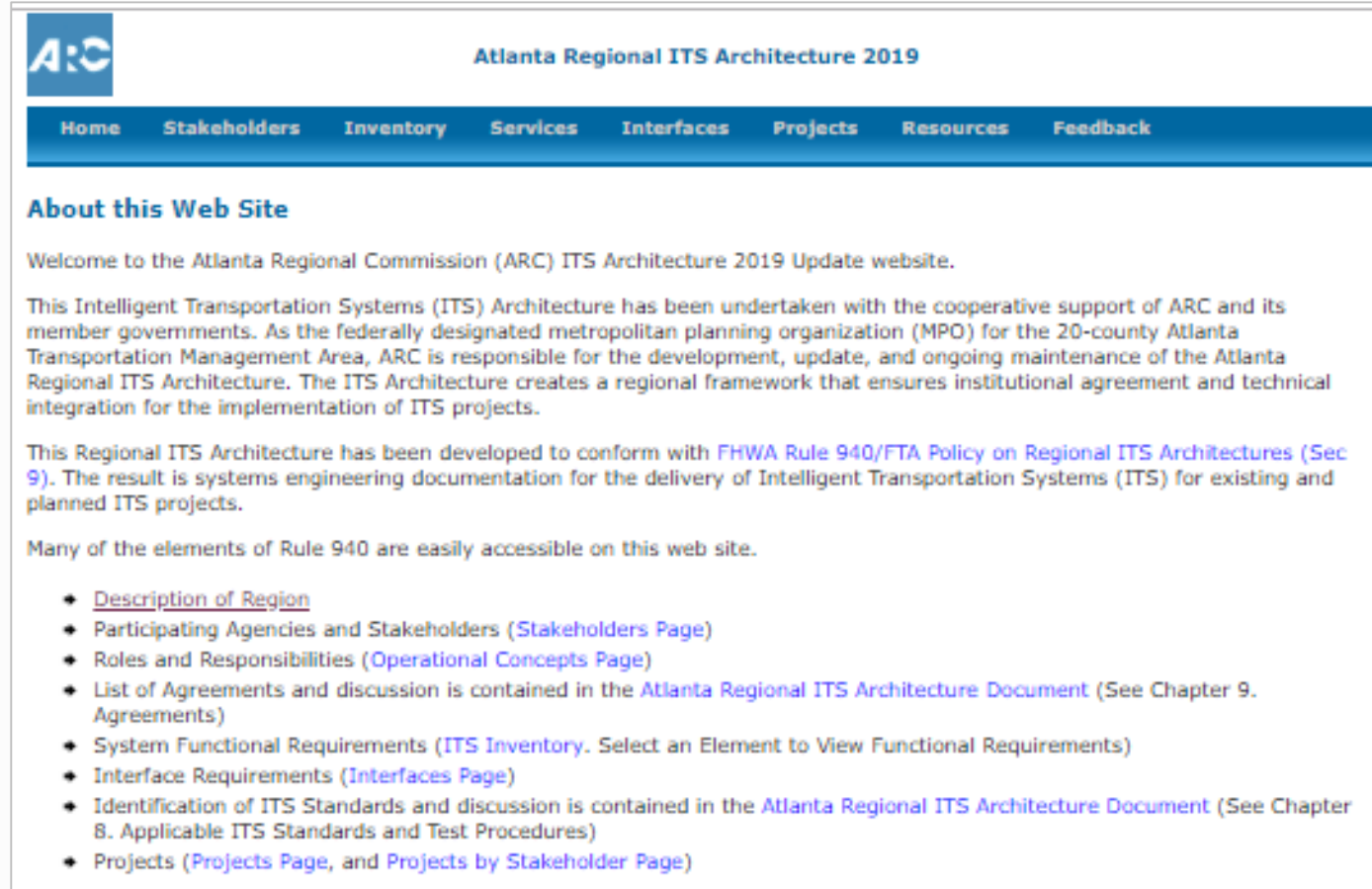
- Communication Assets
- Traveler Information
- Operations
- Data Collection
- Field Equipment
- Other



# ITS Architecture Update

Current draft update includes the following:

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



**ARC** Atlanta Regional ITS Architecture 2019

Home Stakeholders Inventory Services Interfaces Projects Resources Feedback

### About this Web Site

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

This Intelligent Transportation Systems (ITS) Architecture 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/FTA Policy on Regional ITS Architectures \(Sec 9\)](#). 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 web site.

- [Description of Region](#)
- [Participating Agencies and Stakeholders \(Stakeholders Page\)](#)
- [Roles and Responsibilities \(Operational Concepts Page\)](#)
- List of Agreements and discussion is 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 is 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](#))

<http://www.consystem.com/arc/web/index.htm>

# Data Governance Best Practices Report

## Chapter 1

Introduction

## Chapter 2

ARC Challenges and DG

## Chapter 3

DG Overview

## Chapter 4

DG Framework: Business Strategies & Organization

## Chapter 5

Data Lifecycle Management

## Chapter 6

Changing Needs in Transformative Transportation Environments

## Chapter 7

Getting Started with Data Governance

## Chapter 8

ARC's Role in a Regional Data Governance Framework



# Pilot Projects

- 56 Project Ideas Submitted
- Variety of Sources
  - State
  - County
  - Municipal
  - Consultants
  - Vendors

## ARC CALL FOR PILOT PROJECT IDEAS

Transportation systems management and operations (TSMO) is a recognized means of improving safety and mobility. The Atlanta Regional Commission (ARC) is developing the ARC Regional TSMO Plan and Intelligent Transportation Systems (ITS) Architecture update.

To support this planning process, ARC is requesting pilot projects ideas from stakeholders like YOU! Please share your ideas for TSMO-related projects (technology, data, SmartCity transportation initiatives, collaboration, etc.) for future pilot deployments.

**WHEN:** By Friday, May 24<sup>th</sup>

**HOW:** Submit details for your pilot project  
<https://form.jotform.com/kimleyhorn/arc-tsmo>



### ARC TSMO Call for Pilot Project Ideas

Project Title

Submitting Organization

Point of Contact at Submitting Organization (Name)

Point of Contact at Submitting Organization (Email)

Point of Contact at Submitting Organization (Phone #)

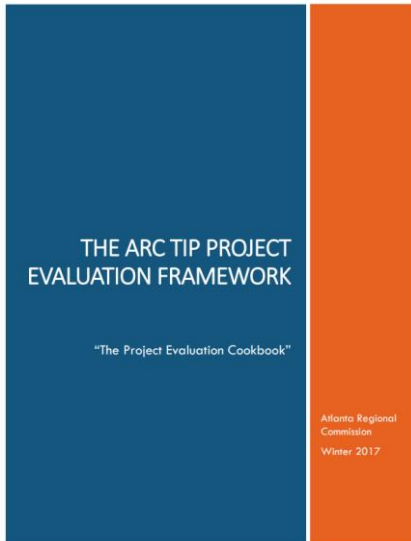
Brief Project Description

Upload Supporting Documents (if applicable)

# Pilot Project Evaluation Framework

- Screening Assessment

- Prioritization Framework








PILOT PROJECT TITLE	SUBMITTING ORGANIZATION	PILOT PROJECT DESCRIPTION	PROJECT TYPE	SPECIFIC LOCATION	CHAMPION	CONCEPTUALITY	COMPLEXITY	RELATIVE COST	GOALS	REGIONAL IMPACT
Virginia Avenue Smart Corridor ES&C v. Cellular V2X Pilot	Aeropedic Atlanta C&S	Conduct a DSRC v. C-V2X (4G LTE and 5G) pilot study along the Virginia Avenue Smart Corridor as a follow-up to the Virginia Avenue Smart Corridor Study	Vehicular Mobility	Green	Green	1	Green	\$\$	Green	Green
Emergency Vehicle Preemption Technology	Temple	Use connected vehicle preemption technology to provide green lights at traffic intersections to allow safe passage of the emergency vehicle while bringing all public vehicles safely to a halt. Specifically, this is a concern in rural areas where speeds at signalized intersections are high	Vehicular Mobility	Red	Red	1	Green	\$\$	Green	Red
Wrong Way Detection	MH Corbin, LLC	Video adding radar sensor control infrastructure (Connect TS) to detect, verify, and alert in real-time wrong-way driving vehicles and sensor integration to the 150-carrier agencies	Vehicular Mobility	Red	Red	1	Green	\$	Green	Red
Smart Corridor Study	Sandy Springs	Conduct a smart corridor study on Mount Vernon Hwy corridor between Sandy Springs MARTA Station and Sandy Springs City Center	Vehicular Mobility	Green	Green	2	Green	\$	Green	Red
			Vehicular Mobility	Red	Red	4	Yellow	\$\$	Green	Red
			Vehicular Mobility	Green	Green	4	Green	\$\$	Green	Red
			Vehicular Mobility	Red	Green	5	Yellow	\$\$\$	Green	Green
			Vehicular Mobility	Green	Green	5	Red	\$	Green	Red
			Vehicular Mobility	Red	Green	5	Red	\$	Green	Red
			Freight	Green	Green	1	Yellow	\$\$	Green	Red
			Freight	Red	Red	1	Green	\$	Green	Red
			Freight	Green	Green	1	Green	\$	Green	Red
			Freight	Green	Green	3	Yellow	\$\$	Green	Red
			Freight	Green	Green	5	Red	\$\$\$	Green	Red
			Freight	Green	Green	2	Yellow	\$\$	Green	Red
			Transit	Green	Green	1	Green	\$\$	Green	Red
			Transit	Red	Green	1	Green	\$\$	Green	Green

SCREENING METHODOLOGY	
<b>COST</b>	<ul style="list-style-type: none"> <li>Low: Requires significant investment of time and/or money to implement</li> <li>Medium: Requires moderate investment of time and/or money to implement</li> <li>High: Requires minimal investment of time and/or money to implement</li> </ul>
<b>GOALS</b>	<ul style="list-style-type: none"> <li><b>SAFETY</b> Applying technology and context-sensitive approaches to achieve zero fatalities</li> <li><b>EFFICIENT, SEAMLESS TRAVEL</b> Coordinated systems across jurisdictions and modes; accessible, real-time travel information</li> <li><b>EQUITABLE ACCESS</b> People of all ages, abilities, languages, backgrounds, and incomes have access to safe, reliable, efficient mobility options</li> <li><b>RELIABLE TRAVEL TIMES</b> Managing planned and unplanned disruptions to reduce unexpected delays</li> </ul>
<b>COMPLEXITY</b>	<ul style="list-style-type: none"> <li>Low: Build off of existing initiative/infrastructure</li> <li>Medium: New initiative, but concept of operations is vetted and understood</li> <li>High: Significant integration, research, development, and/or multi-jurisdictional coordination required</li> </ul>
<b>REGIONAL IMPACT</b>	<ul style="list-style-type: none"> <li>High: Project expected to impact the region significantly</li> <li>Medium: Project expected to impact multiple jurisdictions</li> <li>Low: Project expected to impact local jurisdiction only</li> </ul>
<b>CONCEPTUALITY</b>	<ul style="list-style-type: none"> <li>1: Builds off of existing initiative and/or infrastructure</li> <li>2: Location defined; Goal defined</li> <li>3: Idea moderately refined; further development required</li> <li>4: Deployment requested; needs extensive research beforehand</li> <li>5: Study/research/non-deployment project</li> </ul>

# Pilot Project Screening Assessment

- Location   
- Champion  
- Project Type



Vehicular Mobility



Parking



Freight



Data



Transit



App


























Bike / Ped / Shared



Smart City

# Pilot Project Screening Assessment

- Screening Assessment Rubric

SCREENING METHODOLOGY	
 COST	 Low: Requires <b>significant</b> investment of time and/or money to implement
	 Medium: Requires <b>moderate</b> investment of time and/or money to implement
	 High: Requires <b>minimal</b> investment of time and/or money to implement
 GOALS	 <b>SAFETY</b> Applying technology and context-sensitive approaches to achieve zero fatalities
	 <b>EFFICIENT, SEAMLESS TRAVEL</b> Coordinated systems across jurisdictions and modes; accessible, real-time travel information
	 <b>EQUITABLE ACCESS</b> People of all ages, abilities, languages, backgrounds, and incomes have access to safe, reliable, efficient mobility options
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 COMPLEXITY	 Low: Build off of existing initiative/infrastructure
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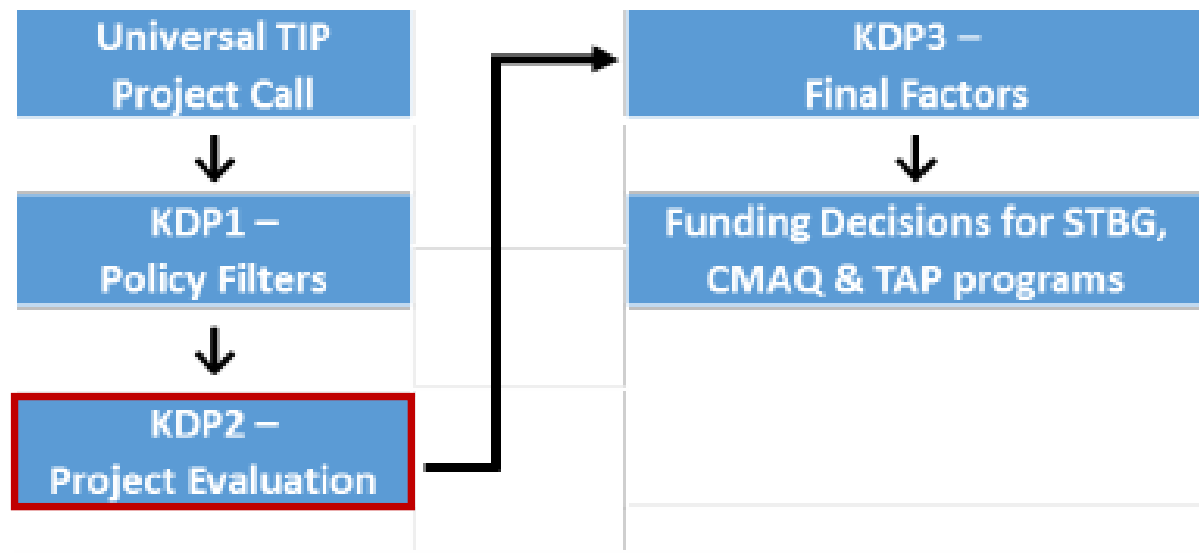
# ARC TIP Project Evaluation Framework

THE ARC TIP PROJECT  
EVALUATION FRAMEWORK

“The Project Evaluation Cookbook”

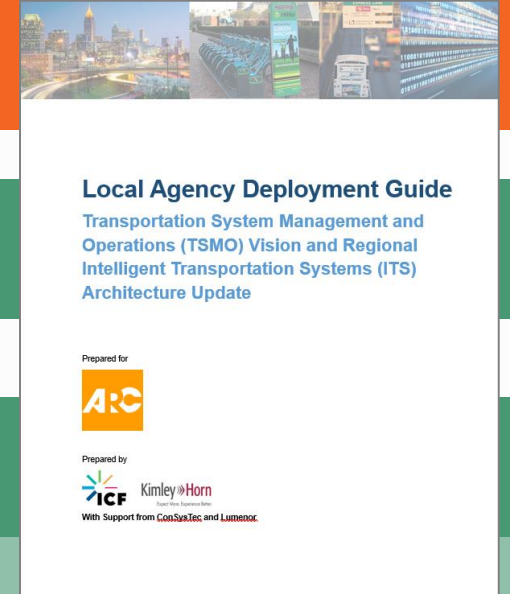
Atlanta Regional  
Commission  
Revised  
July 2019

Figure 01 – KDP Flowchart





# Local Agency Deployment Guide



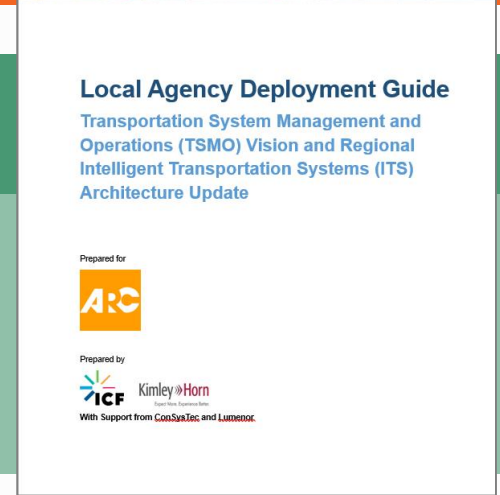
## 1. Guide Purpose

## 2. Introduction to TSMO

- What is TSMO
- TSMO Business Case
- ARC TSMO Vision

## 3. TSMO Strategies: A Menu of Options

# Local Agency Deployment Guide



## 4. Implementation - Advancing Effective Deployments

- Systems Engineering
- Technology Considerations
- Data
- RFP Example

## 5. Funding Opportunities

## 6. Reference Material

- Specifications
- Design Guides
- FHWA TSMO Guide
- ATDM Guide



# TSMO Vision and ITS Architecture Update: Next Steps

- Prioritization Refinement - Pilot Project Test Case
- Local Agency Deployment Guide
- TSMO Plan Document



# Funding Opportunities for TSMO

Program	<b>STBG</b>	<b>CMAQ</b>	<b>TAP</b>
<b>Emphasis Areas</b>	<p><b>Last Mile Connectivity</b> – Localized pedestrian and bicyclist safety, access and mobility with emphasis on correcting “hot spot” issues near transit &amp; schools</p> <p><b>Roadway Safety<sup>[1]</sup></b> – Address multimodal safety issues along key roadways, with emphasis on thoroughfares</p> <p><b>Freight Safety<sup>[1]</sup></b> – Address multimodal safety issues along truck routes</p> <p><b>Livable Centers Initiative</b> – Projects within designated LCI areas that are defined in LCI plan, linking transportation and land use to create sustainable, livable communities</p> <p><b>Transit Capital and Preventative Maintenance<sup>[1]</sup></b> – Transit infrastructure projects to maintain state of good repair and/or improve overall patron experience</p>	<p><b>Travel Demand Management<sup>[1]</sup></b> – Physical assets and services provide real-time information network performance and support better decision-making for travelers</p> <p><b>Clean Vehicle &amp; Technology Programs</b> – Purchase alternative fuel vehicles or convert fleets to run on alternative fuels</p> <p><b>Transit Service Start-up Operation<sup>[1]</sup></b> – Transit facilities, operation assistance (3 year max), or vehicles (bus, rail, or van) associated with new mass transit service that expands current system</p> <p><b>Roadway ITS/Ops/Incident Management<sup>[1]</sup></b> – Signal synchronization, traffic management, and traveler information systems, with emphasis on thoroughfare and truck routes</p> <p><b>Managed Lanes<sup>[1]</sup></b> – Tolling infrastructure to enable tolling, marketing, public outreach, and support services</p>	<p><b>Regional Trail Networks</b> – Shared-use paths that enhance mobility &amp; access</p> <p><b>Safe Routes to Schools</b> – Enhancing access to elementary and middle schools; can compliment education, outreach, and planning efforts to enhance safe access to schools</p> <p><b>Transit &amp; Station Area Access<sup>[1]</sup></b> – Increase access to regional transit systems and the first-mile and last-mile connectivity to the regional transit network</p> <p><b>Comprehensive Activity Center Strategy<sup>[1]</sup></b> – Substantial safety and accessibility improvements to a geographically-focused activity center or high-demand destination</p> <p><b>Other</b> – Any other federally-eligible TA project types as defined by FHWA that enhance safety, accessibility, and mobility for bicyclists, pedestrians, and transit riders</p>
<b>Estimate <sup>[2]</sup></b>	<b>\$80,000,000</b>	<b>\$30,000,000</b>	<b>\$7,000,000</b>

<sup>[1]</sup>Defined component of regional strategy in the adopted Decision-Making Framework for the PLAN 2040 RTP/TIP Update in 2014

<sup>[2]</sup> Subject to Change

# 2020 ConnectATL Summit

- March 31, 2020 (anticipated)
- Topic Ideas
  - **Connecting Vehicles in the Atlanta Region** - State and Local Government Directions
  - **Creating an “MCity” in the Atlanta Region** - The Peachtree Corners Experience
  - **Private Sector Perspectives Roundtable** - Technology and the Future
- For more information [ConnectATL.org](https://ConnectATL.org)

# Contact Information

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