



U.S. Department of Transportation

COMPLETE TRIP

ITS4US

The logo for ITS4US features the number '4' in a large, blue, stylized font. A dashed orange line with a red location pin at the top and bottom ends forms a path through the '4'. The rest of the text 'ITS' and 'US' is in a dark grey, bold, sans-serif font.

Atlanta Regional Commission (ARC)
“Safe Trips in a Connected Transportation Network”
Phase 1 Concept of Operations Webinar

July 14, 2021

Agenda

■ Purpose of this Webinar

- To share the Concept Development Activities from ARC with the stakeholders of the project.

■ Webinar Content

- Complete Trip – ITS4US Deployment Program Overview (Karen Timpone)
- Site Orientation & Key Challenges (Kofi Wakhisi & Daniel Piotrowski)
- Deployment Concept Overview (Polly Okunieff & Natalie Smusz-Mengelkoch)
- Stakeholder Engagement Efforts (Maria Roell & Jordan Hall)
- Stakeholder Q&A
- How to Stay Connected (Karen Timpone)

■ Webinar Protocol

- Please mute your phone during the entire webinar
- You are welcome to ask questions via chatbox at the Q&A Section
- The webinar recording and the presentation material will be posted on the ITS4US website

Brief Program Overview

Karen Timpone, FHWA, Office of Safety

Complete Trip - ITS4US Deployment Program

- A USDOT Multimodal Deployment effort, led by ITSJPO and supported by OST, FHWA and FTA
- Supports multiple large-scale replicable deployments to address the challenges of planning and executing all segments of a complete trip



Vision

*Innovative and integrated
complete trip
deployments to support
seamless travel for all users
across all modes,
regardless of location,
income, or disability*

Program Goals



Spur high-impact integrated Complete Trip deployments nationwide



Identify needs and challenges by populations



Develop and deploy mobility solutions that meet user needs

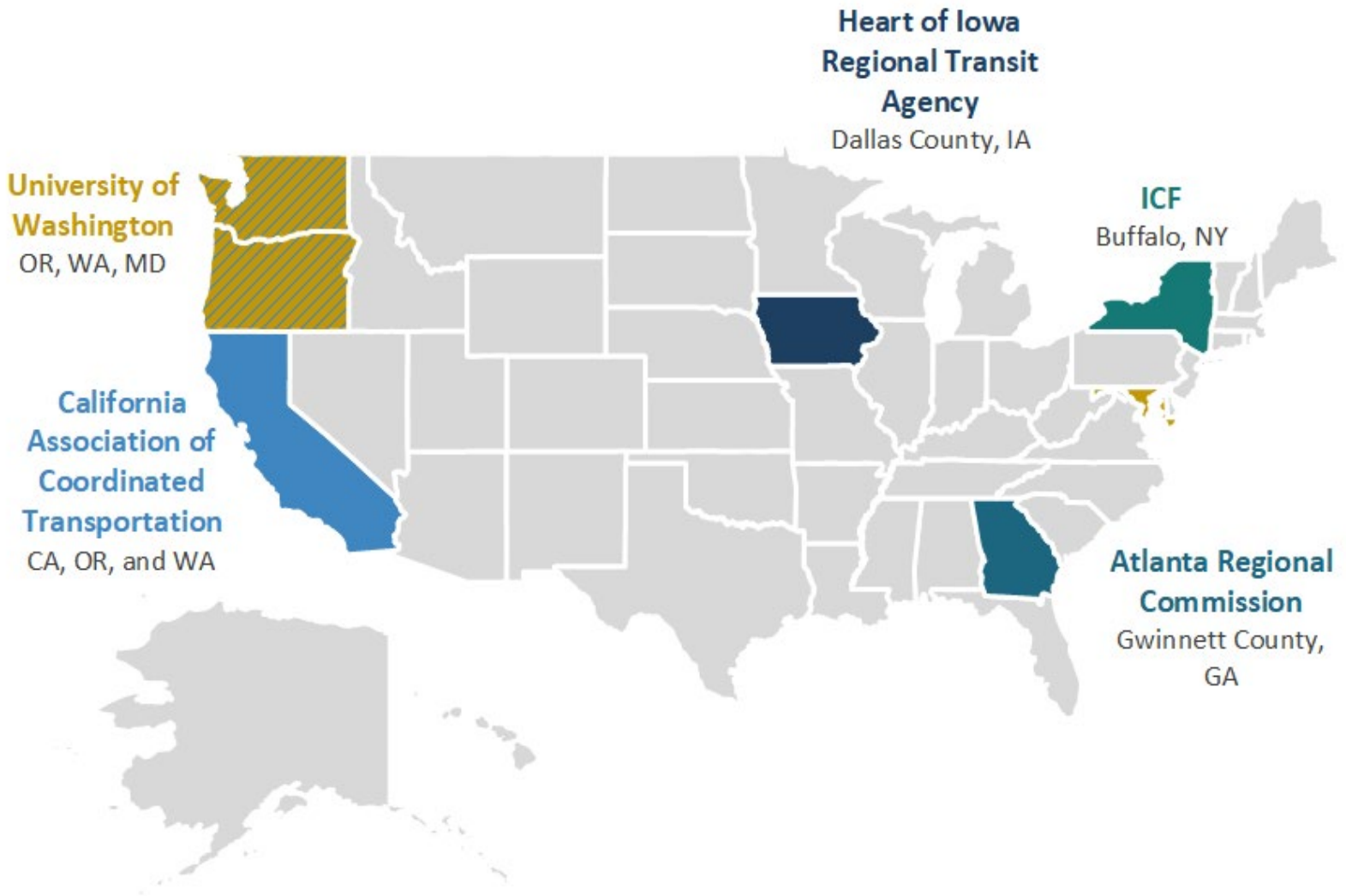


Measure impact of integrated deployments

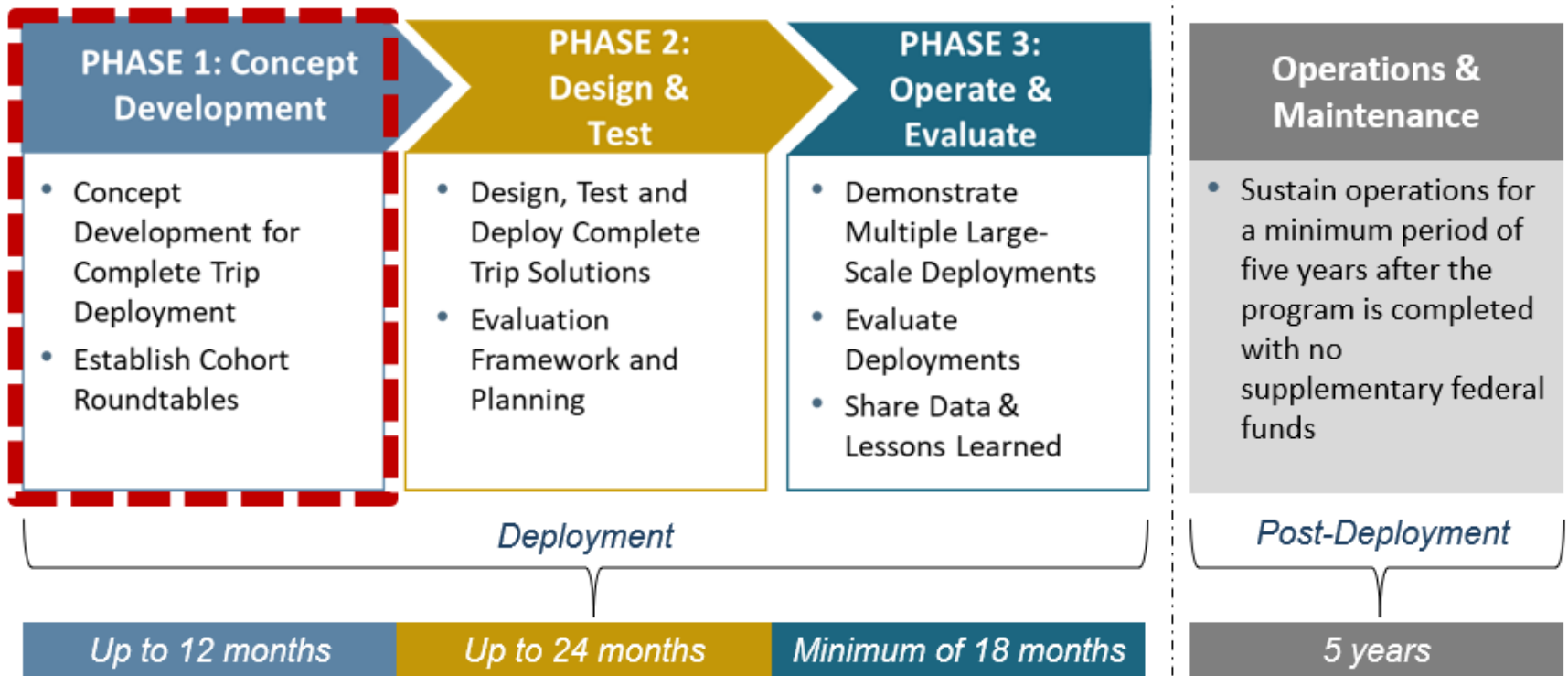


Identify replicable solutions and disseminate lessons learned

Complete Trip Phase 1 Awardees



Deployment Phases



Site Orientation & Key Challenges

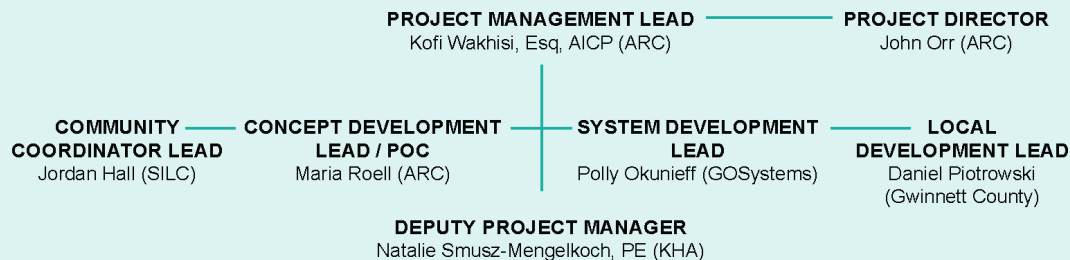
Kofi Wakhisi, Project Management Lead

Daniel Piotrowski, Local Development Lead



Project Team and Partners

Executive Management Team



Production Team

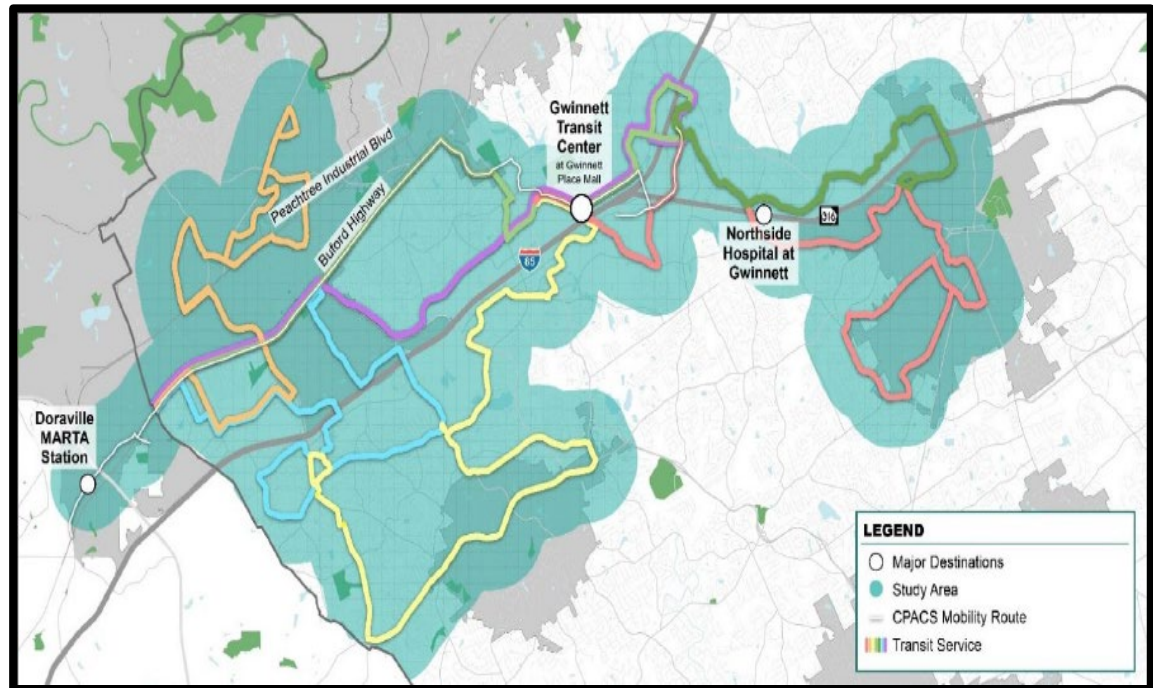
CONCEPT COLLABORATIVE LEAD Atlanta Regional Commission (ARC) Joseph Yawn Kyung-Hwa Kim Melissa Roberts Daniel Studdard	COMMUNITY COORDINATOR LEAD Statewide Independent Living Council (SILC) Shelly Simmons	TECHNICAL INNOVATION LEAD Georgia Tech Randall Guensler, PhD Angshuman Guin, PhD Pascal Van Hentenryck, PhD
LOCAL AGENCY DEPLOYMENT LEAD Gwinnett County Tom Sever, PE, Traffic Engineer	LOCAL AGENCY TRANSIT LEAD Gwinnett County Transit Karen Winger, Transit Manager	CV INTEGRATION LEAD Georgia Department of Transportation (GDOT) John Hibbard Andrew Heath, PE, PTOE Alan Davis, PE, PTOE
PRODUCTION MANAGEMENT LEAD Kimley-Horn (KHA) Jeff Dale, PE, PMP Lisa Burgess, PMP JD Schneeberger, PMP Doug Gettman, PhD Kenn Fink, PE Beth Tucker Tom Glueckert, PE	ATL RIDES INTEGRATION LEAD Atlanta-Region Transit Link Authority (ATL) Daniel Walls Jonathan Ravenelle	ATL RIDES DEVELOPMENT LEAD IBI Jonathan Darton Jon Campbell Ritesh Warade

- ARC – Lead
- Gwinnett County
- GDOT
- ATL
- GA Statewide Independent Living Council
- Georgia Tech
- Kimley-Horn
- GO Systems and Solutions
- IBI



Project Site - Gwinnett County

- Richly diverse area
- 280,000 residents
- Major transit hubs
- Suburban land use
- Wide and high-speed roadways
- Inconsistent pedestrian infrastructure





Underserved Populations

Population Type	Project Site Population	Pop. in Project Site	Gwinnett County Population	Gwinnett Pop. in Project Site
People with Disabilities (non-institutional)	16,802	6.0%	32,032	52.5%
Older Adults (Age 65+)	19,435	7.0%	78,898	24.6%
Low-Income (Individual Poverty)	53,223	19.1%	107,267	49.6%
Veterans	8,602	3.1%	37,850	22.7%
Limited English Proficiency Households	14,098	15.1%	24,069	58.6%
Zero-Vehicle Household	4,921	5.3%	9,467	52.0%
Total Population	278,572	100%	889,954	31.3%
Total Households	93,158	100%	283,256	32.9%

Source: American Community Survey (2017)



Project Challenges

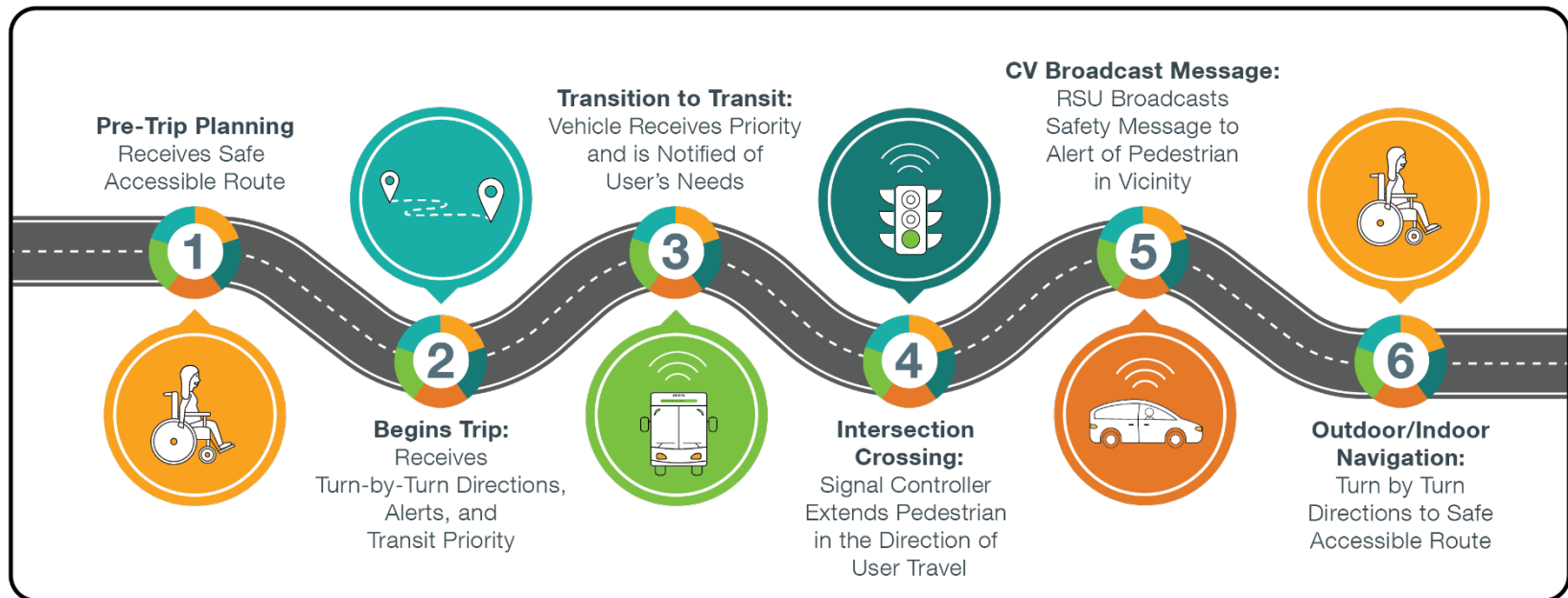
- Challenge 1 – Lack of knowledge of inadequate pedestrian infrastructure can lead to lengthy detours or inaccessibility.
- Challenge 2 – Lack of transit reliability and added exposure while waiting.
- Challenge 3 – Difficult to recognize and avoid potential conflicts. Lack of visibility to drivers.

Deployment Concept Overview

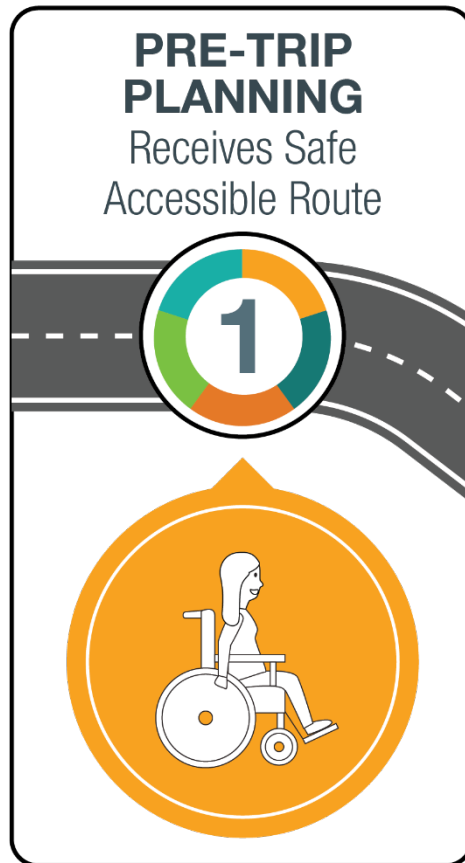
Polly Okunieff, System Development Lead
Natalie Smusz-Mengelkoch, Deputy Project Manager



Use Case – Wendy’s Complete Trip



Use Case – Wendy’s Complete Trip Step 1



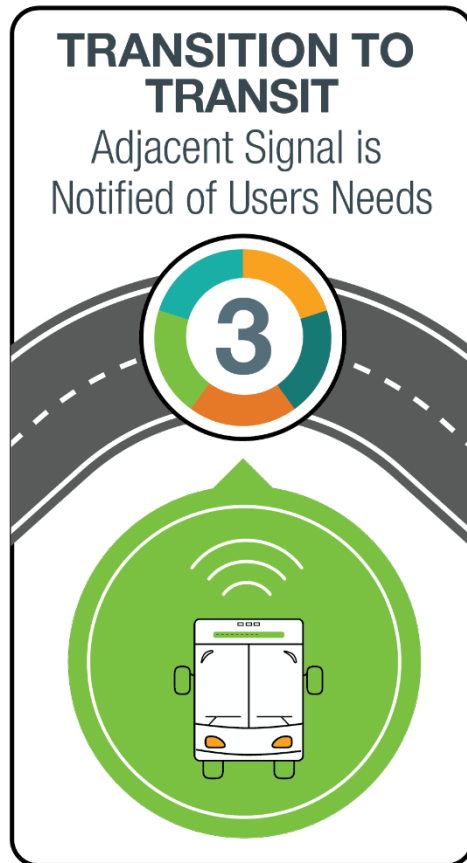
- Step 1 – The traveler plans for and receives a safe accessible route.
 - Traveler provides origin and destination.
 - Traveler creates a trip or user profile with preferences and abilities.

Use Case – Wendy’s Complete Trip Step 2



- Step 2 – The traveler begins their trip.
 - Receives turn by turn directions.
 - Alerts.
 - Remote pedestrian activation.
 - Can trigger transit signal priority (TSP) if the user has difficulty standing for long periods or is sensitive to weather conditions.

Use Case – Wendy’s Complete Trip Step 3



- Step 3 – The traveler transitions to transit.
 - The transit vehicle receives priority and is notified of users’ needs.
 - TSP can be triggered if the bus is running behind schedule.

Use Case – Wendy’s Complete Trip Step 4



- Step 4 – The traveler crosses the intersection.
 - The traveler can receive additional pedestrian crossing time to cross the intersection.

Use Case – Wendy’s Complete Trip Step 5



- Step 5 – The travelers’ presence sends a message to connected vehicles.
 - Roadside units (RSUs) broadcast a safety message to alert connected vehicles of pedestrians/bicyclists in the vicinity.

Use Case – Wendy’s Complete Trip Step 6



- Step 6 – Outdoor/indoor navigation.
 - The traveler is provided with turn-by-turn directions to a safe accessible route.

Integrated Solution



ATL Rider Information and Data Evaluation System



Connected Vehicle Regional Deployment Program



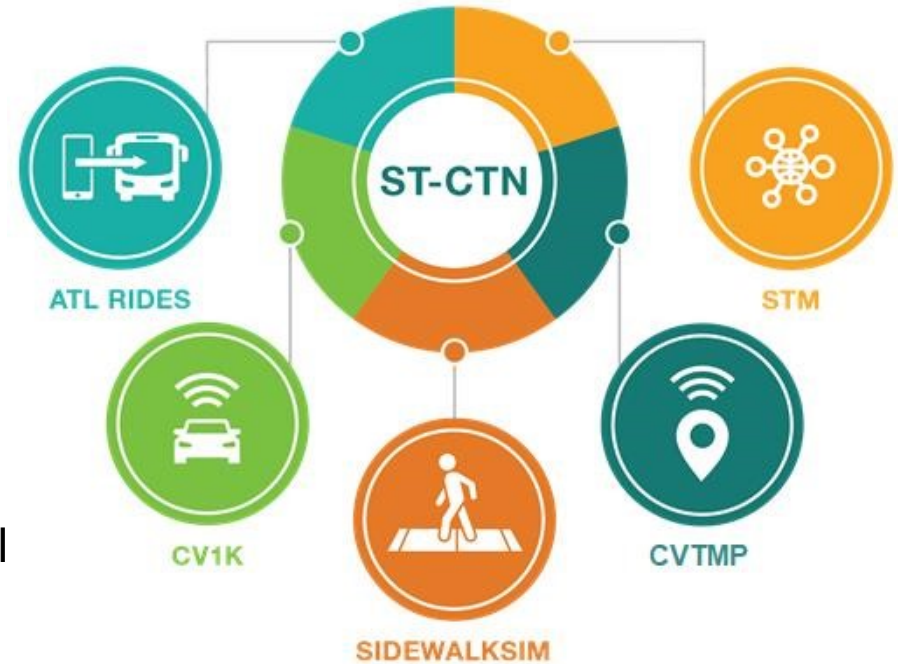
Sidewalk Inventory Tools



Gwinnett Connected Vehicle Technol Master Plan



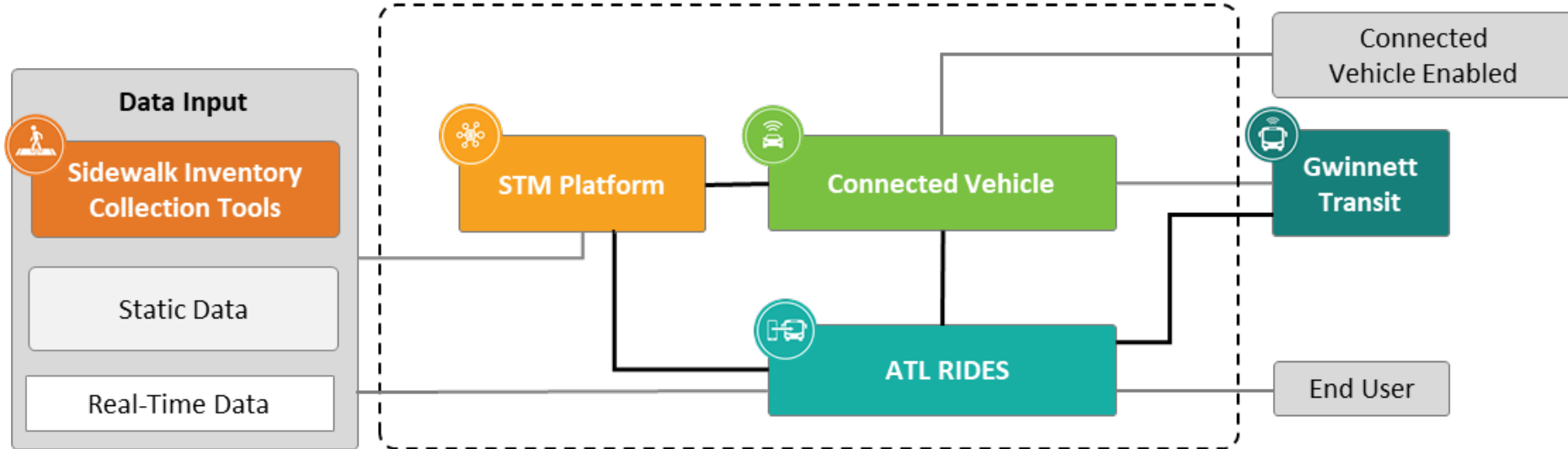
Space-Time Memory Platform





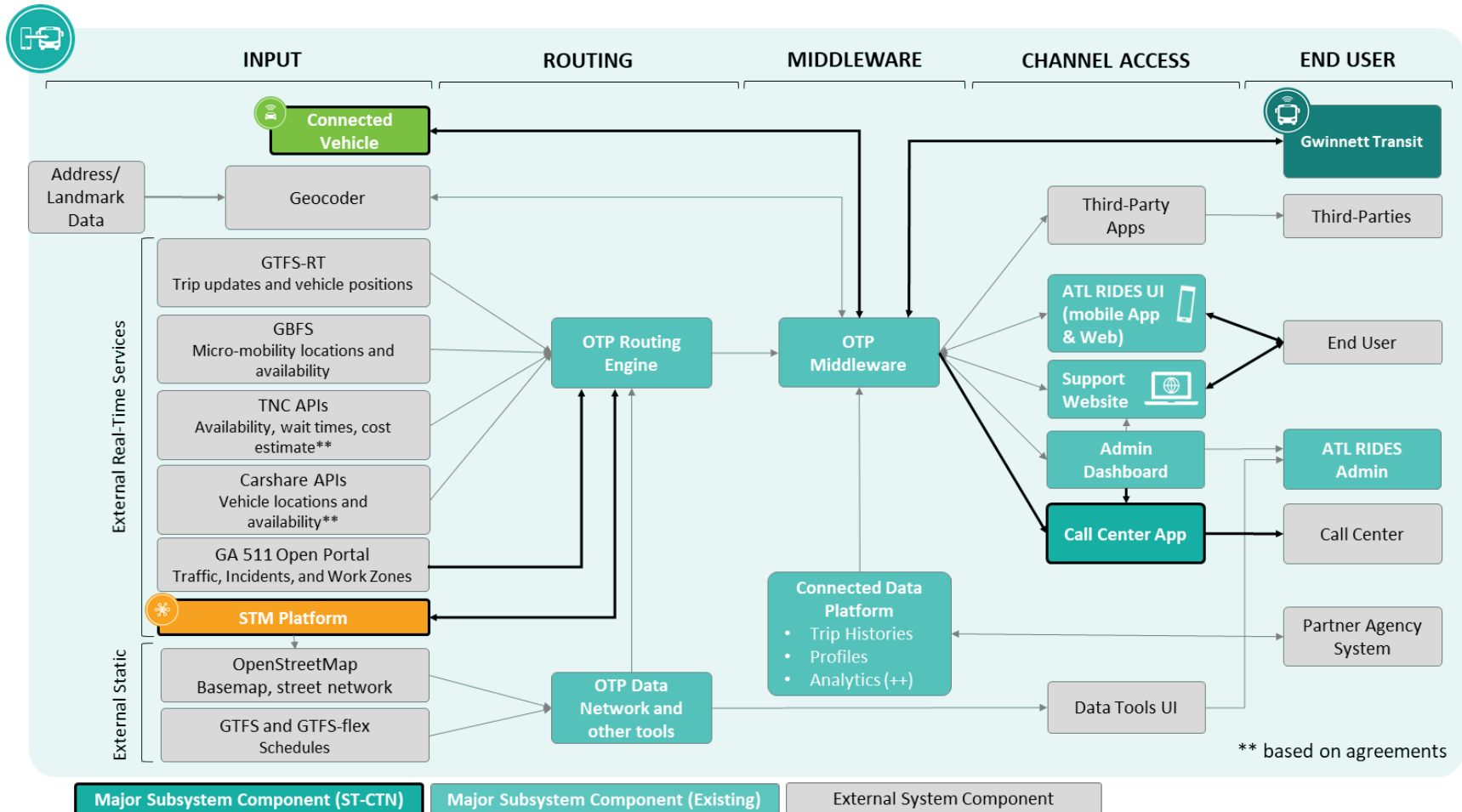
Integrated Solution – Context Diagram

System of Interest

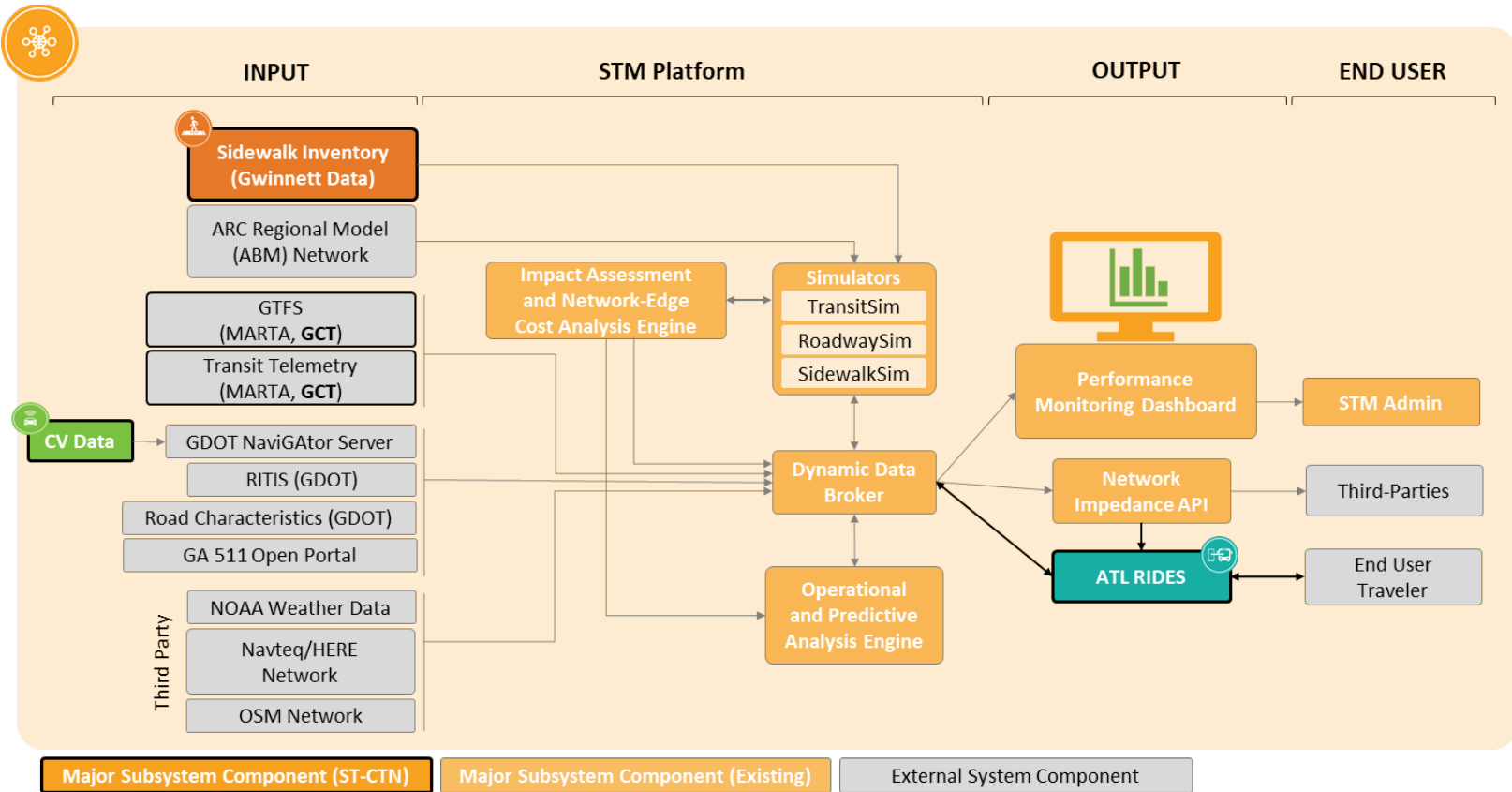


- No Change to Data Exchange
- New or Upgraded Data Exchange

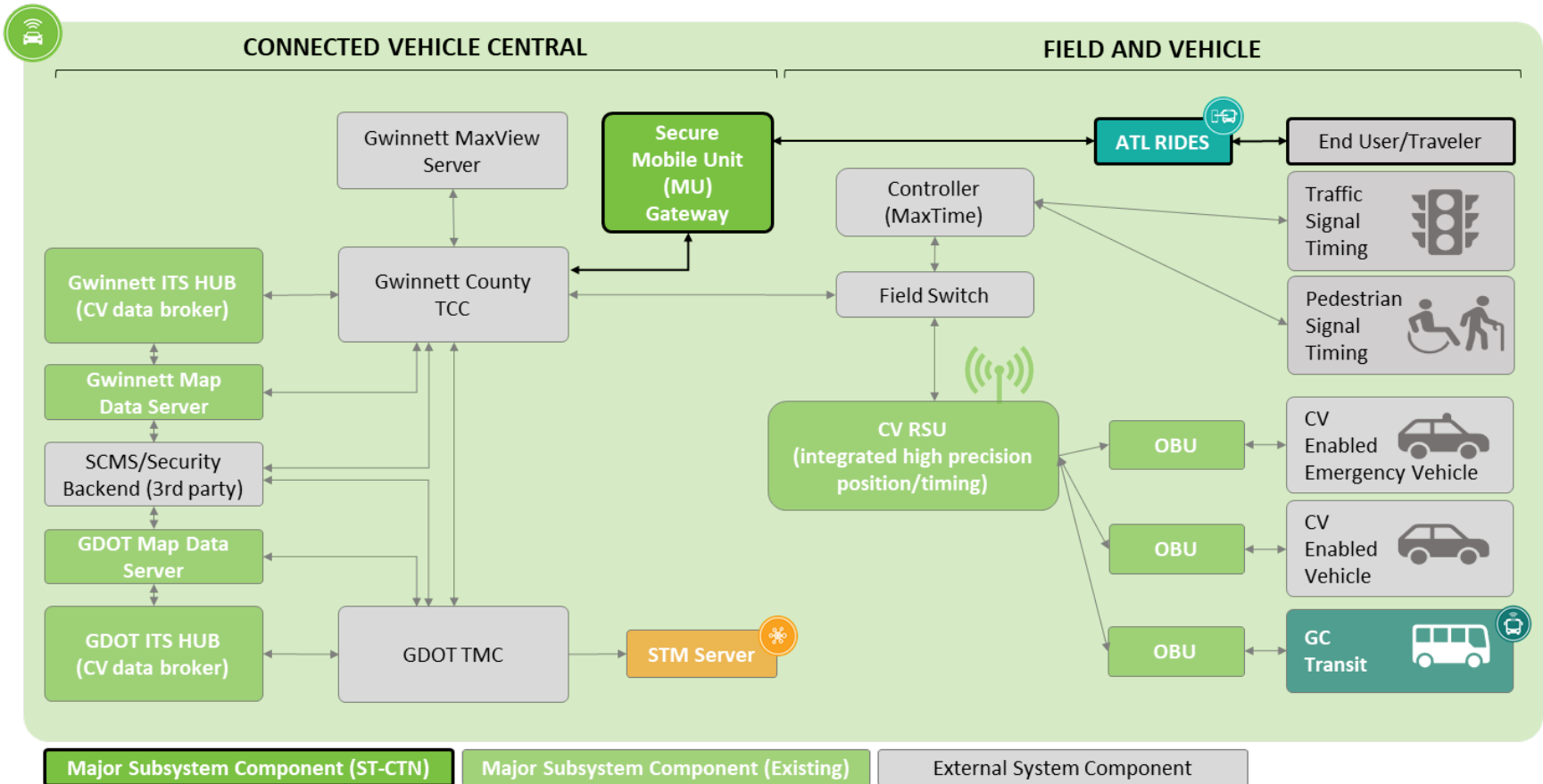
Integrated Solution – ATL RIDES Subsystem



Integrated Solution – STM Subsystem



Integrated Solution – Connected Vehicle Subsystem



Stakeholder Engagement Summary

Jordan Hall, Community Coordinator

Maria Roell, Concept Development Lead



Stakeholder Engagement – Interviews

Seven Small Group Interviews

- Center for Pan Asian Community Services
- ARC Aging & Independence Services
- disABILITY Link
- GA Department of Behavioral Health and Developmental Disabilities
- Georgia Tech Tools for Life
- Georgia Tech Office of Disability Services
- Gwinnett Place CID
- Gwinnett County Public Schools
- GA Department of Education
- City Schools of Decatur
- MARTA Accessibility Council Board
- The Arc Georgia
- Southeastrans
- Vocational Rehab
- Georgia Council on Developmental Disabilities

Stakeholder Engagement – Survey

- Developed End User Needs based on interview discussions.
- Conducted a Survey to review needs and understand priorities.



Needs Priorities Survey Needs Priorities Survey

Thank you again for your participation in the Safe Trips in a Connected Transportation Network (ST-CTN) User Need Interviews. Based on your interviews, we are developing a needs assessment to determine how to make planning and taking trips as easy as possible. In the survey below you'll find the needs that have been identified. Please provide feedback regarding whether the needs are accurately depicted based on the description in the survey and prioritize them based on your experience (essential, high, medium, and low priority). You will also see a question marked other. If there is a need you feel that was not addressed, please describe it in the space provided.



End User Needs Steps 1-2

1 Pre-Trip Planning

- Personalized trip information that accommodates their preferences and abilities.
- The ability to customize their App accessibility features to accommodate their abilities.

2 Begin Trip

- Support services during trip planning and traveling based on their preferences and abilities.
- To receive personalized information and alerts during their trip in a way that is accessible to them.



End User Needs Steps 3-4



Transition to Transit

- The ability to communicate with transit infrastructure and transit vehicle operators to ensure adequate time to board or alight a transit vehicle based on their abilities.



Intersection Crossing

- The ability to communicate with infrastructure and CVs at signalized crosswalks beyond the currently existing push buttons.



End User Needs Steps 5-6

5 CV Broadcast Message

- The ability to remotely request transit service while waiting or traveling to a transit stop.
- The ability to alert CVs to their presence at marked crossings and transit stops.

6 Outdoor/Indoor Navigation

- Accurate information to successfully navigate indoor spaces.

Reporting

- The ability to provide feedback on infrastructure and services.



Next Steps

- Concept of Operations (ConOps) is the foundation of the project
 - Defines *Who, What, Where, When, and How*
 - From each stakeholder perspective (end user, operator, developer)
 - Guides development of requirements
 - Guides design and deployment
 - Required to be updated as needs change

- Development of Outreach and Training Plan
 - Will need your support and engagement



Next Steps (Continued)

- Phase 1 – Concept Development
 - Complete Winter 2022

- Phase 2 – Design and Test
 - Winter 2022 – Winter 2024

- Phase 3 – Operate and Evaluate
 - Winter 2024 – Summer 2025

- Five-year maintenance and operations commitment



Stakeholder Q&A

- Please keep your phone muted
- Please use chatbox to ask questions
- Questions will be answered in the order in which they were received

Stay Connected

For more information please contact:

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Visit the Complete Trip - ITS4US Deployment Program Website and FAQs:
<https://its.dot.gov/its4us/>
https://www.its.dot.gov/its4us/its4us_faq.htm