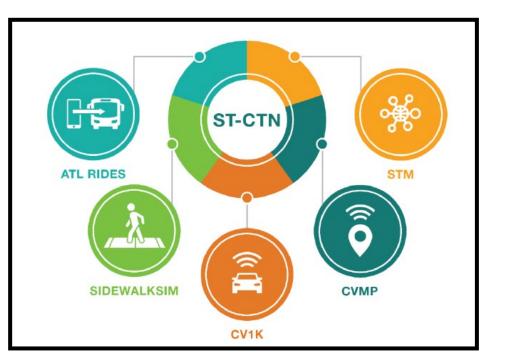# Safe Trips in a Connected Transportation Network (ST-CTN)

Gwinnett County, GA, USA

Team Members:

ARC, Kimley-Horn, GO Systems, Gwinnett County, SILCGA, GDOT, The ATL, IBI, GA Tech

U.S. Department of Transportation
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Project Team

ST-CTN

Kofi Wakhisi, ARC
Project Manager

Maria Roell, ARC
Concept Development

Paula Okunieff, GO Systems
System Development

Daniel Piotrowski, Gwinnett County
Local Development

Jordan Hall, SILCGA
Community Coordinator

Natalie Smusz-Mengelkoch, Kimley-Horn
Deputy Project Manager

COMPLETE TRIP
ITS4US

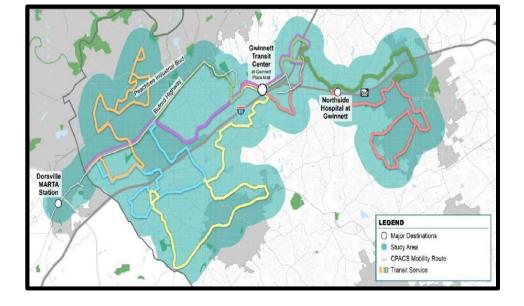U.S. Department of Transportation
ITS Joint Program Office

Safe Trips in a Connected Transportation Network
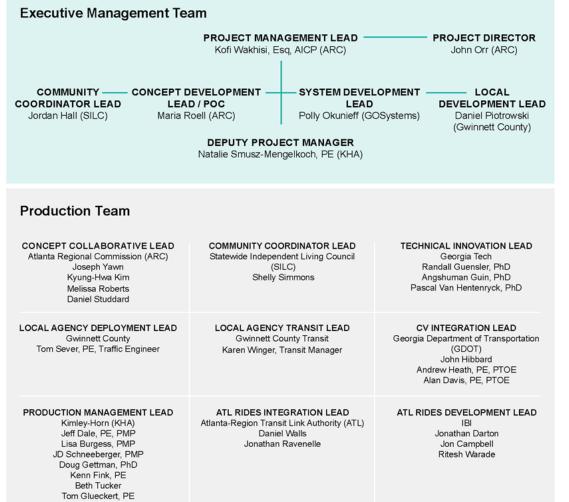
- Richly diverse area

- 280,000 residents

- Major transit hubs

- Suburban land use with wide and high-speed roadways

- Inconsistent pedestrian infrastructure

Team Organization & Partnerships

Executive Management Team

PROJECT MANAGEMENT LEAD
Kofi Wakhisi, Esq, AICP (ARC) — **PROJECT DIRECTOR** John Orr (ARC)

COMMUNITY COORDINATOR LEAD
Jordan Hall (SILC)

CONCEPT DEVELOPMENT LEAD / POC
Maria Roell (ARC)

SYSTEM DEVELOPMENT LEAD
Polly Okunieff (GOSystems)

LOCAL DEVELOPMENT LEAD
Daniel Piotrowski (Gwinnett County)

DEPUTY PROJECT MANAGER
Natalie Smusz-Mengelkoch, PE (KHA)

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
- Kimley-Horn
- GO Systems and Solutions
- Gwinnett County
- Statewide Independent Living Council
- GDOT
- The ATL
- IBI
- Georgia Tech

Challenges & Underserved Populations

- Underserved Populations
  - People with physical or cognitive disabilities
  - Older adults
  - Limited English Proficiency (LEP) residents
  - Low income
  - Zero-vehicle households

- Preliminary Stakeholder Engagement
  - **Statewide Independent Living Council**
  - **12 Stakeholder Groups** – CPACS, disABILITY Link, ARC Aging & Independence Services, National Center for Mobility Management, MARTA , Cobb, Henry and Douglas Counties fixed route bus systems, GRTA, Logisticare, Southeastrans, Department of Health and Human Services
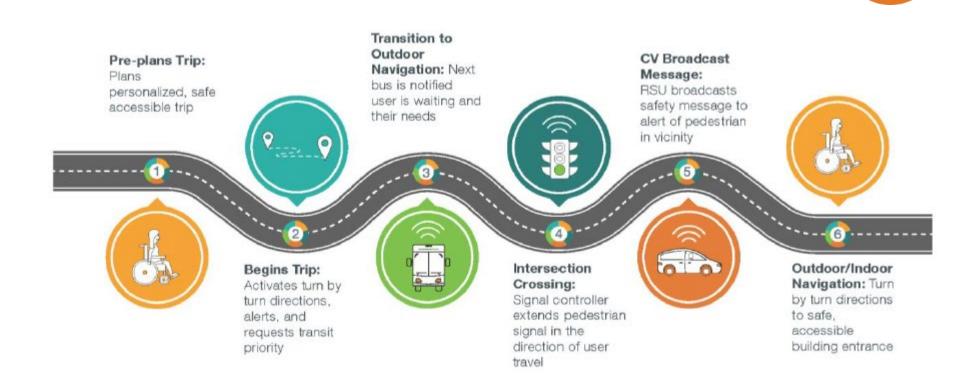
Challenges & Underserved Populations

- Challenge 1 (C1) – Users' knowledge of inadequate pedestrian infrastructure can lead to lengthy detours or inaccessibility.

- Challenge 2 (C2) – Lack of transit reliability and added exposure while waiting.

- Challenge 3 (C3) – Difficult to recognize and avoid potential conflicts. Lack of visibility to drivers.

U.S. Department of Transportation
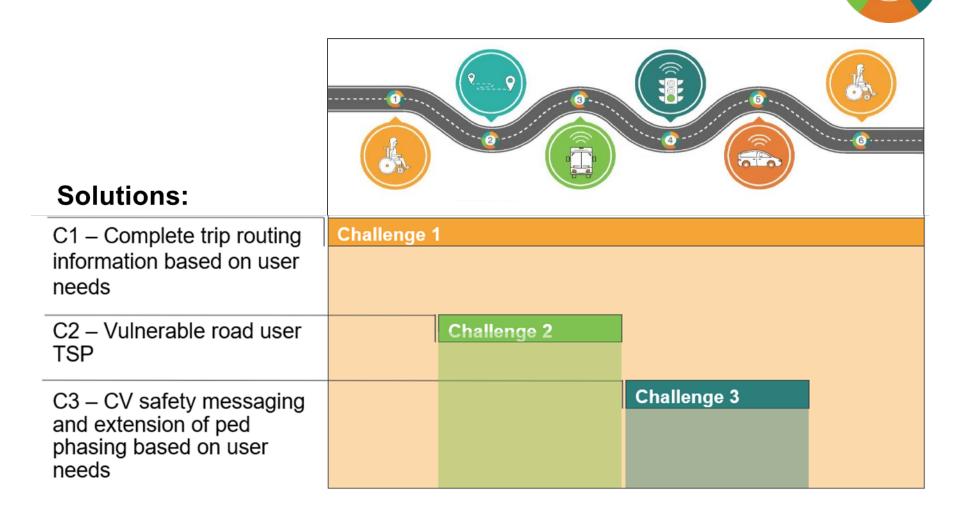ITS Joint Program Office

Proposed Solutions

Pre-plans Trip: Plans personalized, safe accessible trip

Transition to Outdoor Navigation: Next bus is notified user is waiting and their needs

CV Broadcast Message: RSU broadcasts safety message to alert of pedestrian in vicinity

Begins Trip: Activates turn by turn directions, alerts, and requests transit priority

Intersection Crossing: Signal controller extends pedestrian signal in the direction of user travel

Outdoor/Indoor Navigation: Turn by turn directions to safe, accessible building entrance

Safe Trips in a Connected Transportation Network Concept

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Proposed Solutions

Solutions:

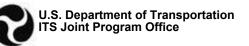|	
C1 – Complete trip routing information based on user needs	Challenge 1
C2 – Vulnerable road user TSP	Challenge 2
C3 – CV safety messaging and extension of ped phasing based on user needs	Challenge 3

Target Performance Measures

- **System success** – Does the system meet the needs of the community as intended?

  - *Safety* – Do underserved users perceive safer travel?

  - *Value* – Do underserved users find the information provided helpful?

  - *Ease of use* – Is the system easy to use?

- **Transit performance and reliability** – Does the system provide enhanced transit performance and reliability for underserved users?

- **System sustainability** – Is the system being used?

Integrated Deployment

Regional Rider Information and Data Evaluation System

Path routing tool for differently abled users

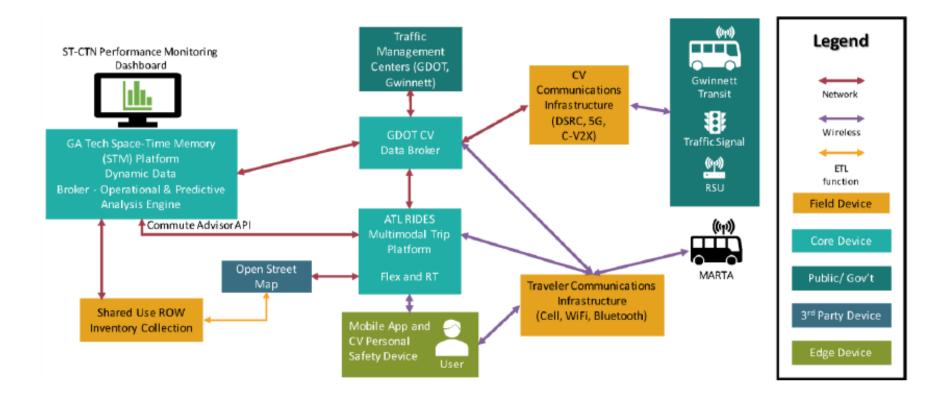CV deployments throughout the region

Gwinnett CV roadmap

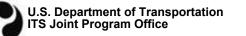Platform for predicting travel conditions

Integrated Deployment

Challenges & Risks

- Technical Risks
  - Sub-system dependencies
  - Integration and testing challenges
  - Security and Privacy

- Financial Risks
  - Decreased budgets due to COVID19

- Institutional Risks
  - Institutional partnerships nine partners