



## *Coordination Case Study*

NATIONAL AGING AND DISABILITY TRANSPORTATION CENTER

# Safe Trips in a Connected Transportation Network

## Background

The Atlanta Regional Commission (ARC) is metro Atlanta's Metropolitan Planning Organization. ARC works with local jurisdictions and various regional partners to:

- Plan new transportation options
- Encourage the development of healthy, livable communities
- Provide services for the region's older adults and individuals with disabilities
- Develop a competitive workforce
- Provide data to inform leaders and decision-makers
- Cultivate leaders to meet the region's challenges
- Engage the public on key regional issues

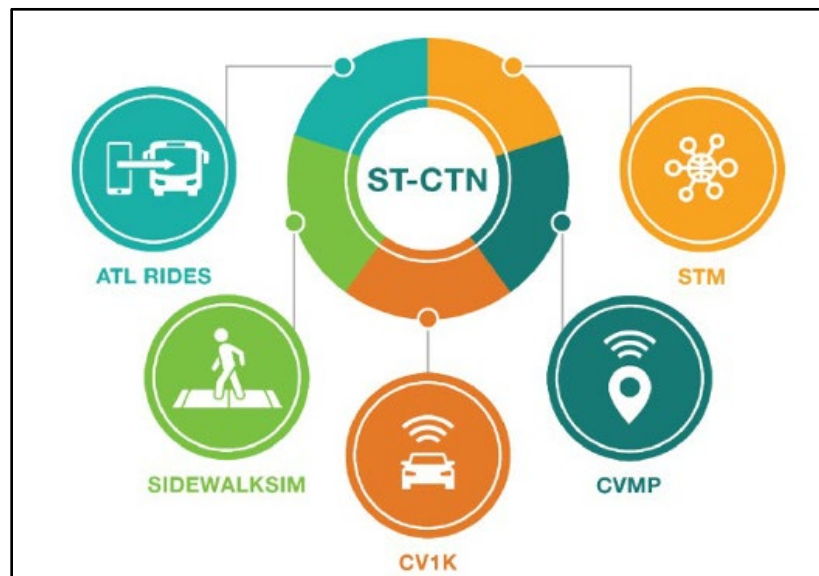
The agency also serves as a regional convener, bringing diverse stakeholders to the table to address the most important issues facing metro Atlanta.

## Description of the Pilot Program

The Atlanta Regional Commission sought to integrate five programs currently existing or underway with regional commitments into a single system. This project became known as the "Safe Trips in a Connected Transportation Network" (ST-CTN) concept and was funded by the ITS4US Deployment Program. ST-CTN will lead the Atlanta region towards providing all travelers with a suite of innovative mobility solutions, which will be leveraged to support the ST-CTN system. The five programs are:

1. Atlanta-Region Ride Information and Data Evaluation System (ATL RIDES): includes an Operational Support Systems (OSS) multi-modal trip planning and mobile application, integrated mobile fare payment options, and a Connected Data Platform (CDP) using regional General Transit Feed Specification (GTFS).

2. SIDEWALKSIM: SidewalkSim is an asset management system and shortest path (lowest impedance) routing tool for pedestrian pathways.
3. Regional Connected Vehicle Infrastructure Deployment Program (CV1K): The Atlanta region is home to one of the largest Connected Vehicle (CV) deployments in the United States – Regional Connected Vehicle Infrastructure Deployment Program (CV1K). CV1K is deploying interoperable CV technologies at signalized intersections throughout the Atlanta region.
4. Gwinnett County’s Connected Vehicle Technology Master Plan (CVTMP): CVTMP sets out to develop and improve economic viability and quality of life, address the needs and challenges to motorized and non-motorized modes, establish guidelines for deploying technology, and have broad applicability to Gwinnett, other local jurisdictions, and across the state—to set the standard for implementing CVs.
5. The Space Time Memory (STM) platform processes traffic volume and speed data from multiple monitoring and modeling sources, tracks network performance measures, and predicts evolving route conditions using traditional and machine learning techniques. The STM project allows routing decisions to incorporate travel time, safety, and other costs into path selection.



Safe Trips in a Connected Transportation Network (ST-CTN) will merge these separate initiatives. The goal of the ST-CTN system is to leverage existing advanced transportation technology solutions to support safe, reliable, accessible, complete trips for all, particularly underserved communities, including people with disabilities, aging adults, people with Limited English Proficiency, and low-income travelers. The vision of the project is to provide users complete trip functionality with directions, conditions, and status on the links between trip legs

that are personalized based on the user's profile, while connecting the user to CV infrastructure to provide safer trips and more transportation network awareness.

## Coordination and Partnerships

The Atlanta Regional Commission completed a new Transportation Systems and Operations Management Plan with an update to the Regional Intelligent Transportation Systems Architecture in early 2020. This effort brought many entities to the table frequently to discuss transportation technology in the region including Georgia's Department of Transportation, Atlanta Region Transit Link Authority, and Gwinnett County.

The following list of partners participated in this effort.

- Gwinnett County/Transit
- Atlanta-Region Transit Link Authority (ATL)
- Statewide Independent Living Council of GA (SILCGA)
- Kimley-Horn and Associates, Inc. (KHA)
- Georgia Department of Transportation (GDOT)
- Georgia Institute of Technology (GA Tech)
- GO Systems and Solutions (GOSystems)
- IBI Group

Additional support from advocacy groups, and individuals with experience in the field of transportation for the project's target populations were also involved and demonstrated interest in continued participation. Those organizations include:

- disABILITY Link
- Center for Pan Asian Community Services
- Georgia Department of Education
- Georgia Department of Behavioral Health and Development Georgia Tech Tools for Life
- Gwinnett ADA Transition Plan Coordinator
- Gwinnett County Public Schools
- Gwinnett County Veterans Resource Center
- Gwinnett Place Community Improvement District
- Hi-Hope Center
- Latin American Association Gwinnett Outreach Center
- MARTA Accessibility Council Board
- Persian Culture Center
- Southeastrans
- The Arc Georgia
- Vocational Rehab
- We Love BuHi (highway preservation non-profit)

One of the benefits of this process was that the ARC became more familiar with each participating agency's work. The ITS4US program will fit well as an opportunity to integrate several of these existing and new projects into a solution enabling more complete trips for disadvantaged communities. Also, due to the already regional nature of many of these initiatives, including ATL RIDES and the Regional Connected Vehicle Program, ARC's integrated solution was a good fit for the program as it would be able to expand in the future. Several interviews were conducted with stakeholders regarding system requirements and concept of operations, and calls were hosted to inform people about the project. Organizations representing end users have been active in the project concept development.

## Project Status

The project nearing completion of Phase 1, completing the concept development, and will begin Phase 2 in June, 2022. Meetings of the full partner team occur on a close to weekly basis. *(See update on Phase 2 below.)*



## Outcomes

Through this project, a framework and gameplan is being developed for designing and implementing a highly integrated technology to help many disadvantaged communities. The documentation put together will help this type of technological solution be adopted by any interested areas. The success of the project won't be understood until the evaluation has been completed. A Performance Measurement and Evaluation Support Plan was created that outlines performance measures to establish if the project is a success. The 6 major performance measures are:

- Enhance Traveler Experience
- Improve Accessibility
- Enhance Complete Trip Pedestrian Safety
- Enhance Fixed-Route Transit
- Enhance Safety and Awareness with Connected Vehicles
- Improve Transit Reliability

## Next Steps

Phase 1 of this project is almost complete. Phase 2 selection is scheduled to be announced June 3<sup>rd</sup>, 2022, and includes designing and building the system. The system is envisioned to be scalable across the region, state, and wherever there is interest in implementing it across the nation. The base ATL RIDES app will go live for riders across all transit operators in the region by the end of summer 2022 and ARC and GDOT are continuing to work towards providing greater

coverage of connected vehicle technology throughout the region. The project has already had some interest from other counties about how they can participate in the project.

## Project Update

### Press Release Article (August 2023)

The ITS4US Deployment Program (<https://its.dot.gov/its4us/>) is a \$40 million multimodal effort, led by the Intelligent Transportation Systems (ITS) Joint Program Office (JPO) and supported by the Office of the Secretary, the Federal Highway Administration, and the Federal Transit Administration, to identify ways to provide more efficient, affordable, and accessible transportation options for underserved communities that often face greater challenges in accessing essential services.

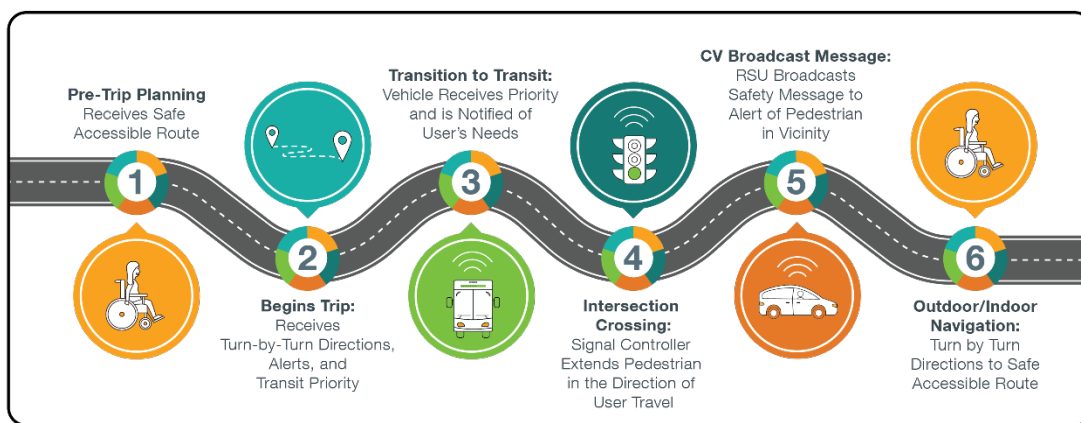
The U.S. Department of Transportation (U.S. DOT) launched Phase 1 of the program in January 2021 and supported the concept development efforts of select sites, including Gwinnett County's Safe Trips in a Connected Transportation Network (ST-CTN). In June 2022, ST-CTN was one of four sites selected to continue Phases 2 and 3 of the program, which includes the design, testing, operation, and evaluation of the deployment. ITS4US Program sites work together to share information and resources.



**U.S. DOT ITS4US Deployment Program Team Photo (Source: U.S. DOT)**



ST-CTN seeks to enhance the travel experience for underserved communities, including people with disabilities, older adults, and travelers with limited English proficiency (LEP). It will leverage innovative solutions and existing systems such as connected vehicle (CV) deployments, an advanced trip routing engine, and a regional trip planner—all to be developed within an open-sourced application called the Georgia Mobility and Accessibility Planner (G-MAP). The application will allow travelers to create a personalized trip plan to navigate physical infrastructure, resolve unexpected obstacles, and ensure visibility, and accessibility throughout their travel. Trips are also able to be shared with appointed individuals if desired. The application will be available via website ([georgia-map.com](http://georgia-map.com)) and a mobile app. The figure below provides an example of a traveler’s complete trip experience using G-MAP.



### Traveler’s Complete Trip (Source: ARC)

Using the G-MAP application, the traveler’s complete trip initiates with the pre-trip planning step which allows the traveler to customize their trip preferences based on their needs and preferences. In step 2, the traveler begins their trip and receives turn-by-turn directions that meet their defined preferences, provides support services if the traveler needs assistance, and can trigger Transit Signal Priority for buses if the traveler requires accommodation with boarding or alighting a transit vehicle or while waiting for a transit vehicle. Step 3 involves the traveler’s transition to transit in which the transit vehicle receives priority and is notified of the traveler’s needs. Step 4 allows the traveler to indirectly interact with the signal controller when crossing a signalized intersection if they are unable to press the crosswalk button and provides the traveler with additional time to cross the intersection if needed. Step 5 provides communication to enabled connected vehicles to make them aware of the traveler’s presence. Step 6 provides the traveler with hands-free indoor (at select facilities) and outdoor navigation via G-MAP and/or wearables and accessible channels (haptic, voice, text). This includes alerts and dynamic rerouting in response to changes in path conditions and updates on the operating status of indoor infrastructure such as elevators and escalators.

Development of G-MAP is being led by Georgia Department of Transportation (GDOT) with support from Atlanta Regional Commission (ARC), Gwinnett County, Statewide Independent

Living Council of Georgia (SILCGA), and consultant partners. The project team is working closely with SILCGA and other representatives of advocacy groups to better understand travelers' needs. G-MAP will be available for use in Gwinnett County in 2024. The project team will leverage existing travel training programs throughout Gwinnett County to provide G-MAP training and awareness. Upon project completion, the open-source application will be available for other agencies to leverage to fit their specific deployment needs, thus, this work has the potential to improve travel for underserved communities beyond Gwinnett County and Georgia.



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The National Aging and Disability Transportation Center (NADTC) is a program funded by the Federal Transit Administration and administered by Easterseals and the USAgings, with guidance from the U.S. Department of Health and Human Services, Administration for Community Living.

**NADTC's mission** is to increase accessible transportation options for older adults, people with disabilities, and caregivers nationwide.

National Aging and Disability Transportation Center  
Washington, D.C. 2000

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