U.S. Department of Transportation

ITS4US

IT'S TRANSPORTATION FOR ALL OF US

ITS for Underserved Communities: An Overview of the U.S. DOT's ITS4US Deployment Program

CTAA Expo 2023

May 24, 2023

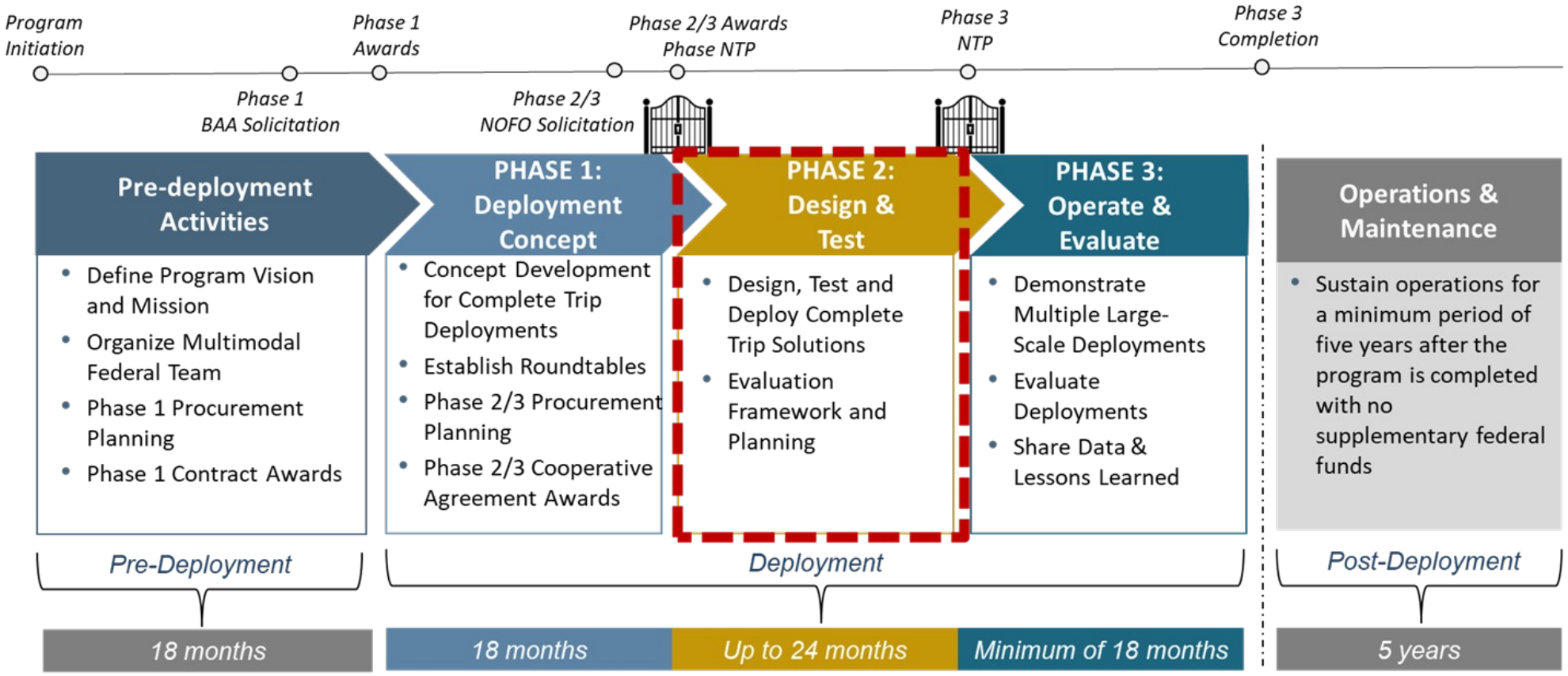
ITS4US Program Overview

- A USDOT Multimodal Deployment effort, led by ITS JPO 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

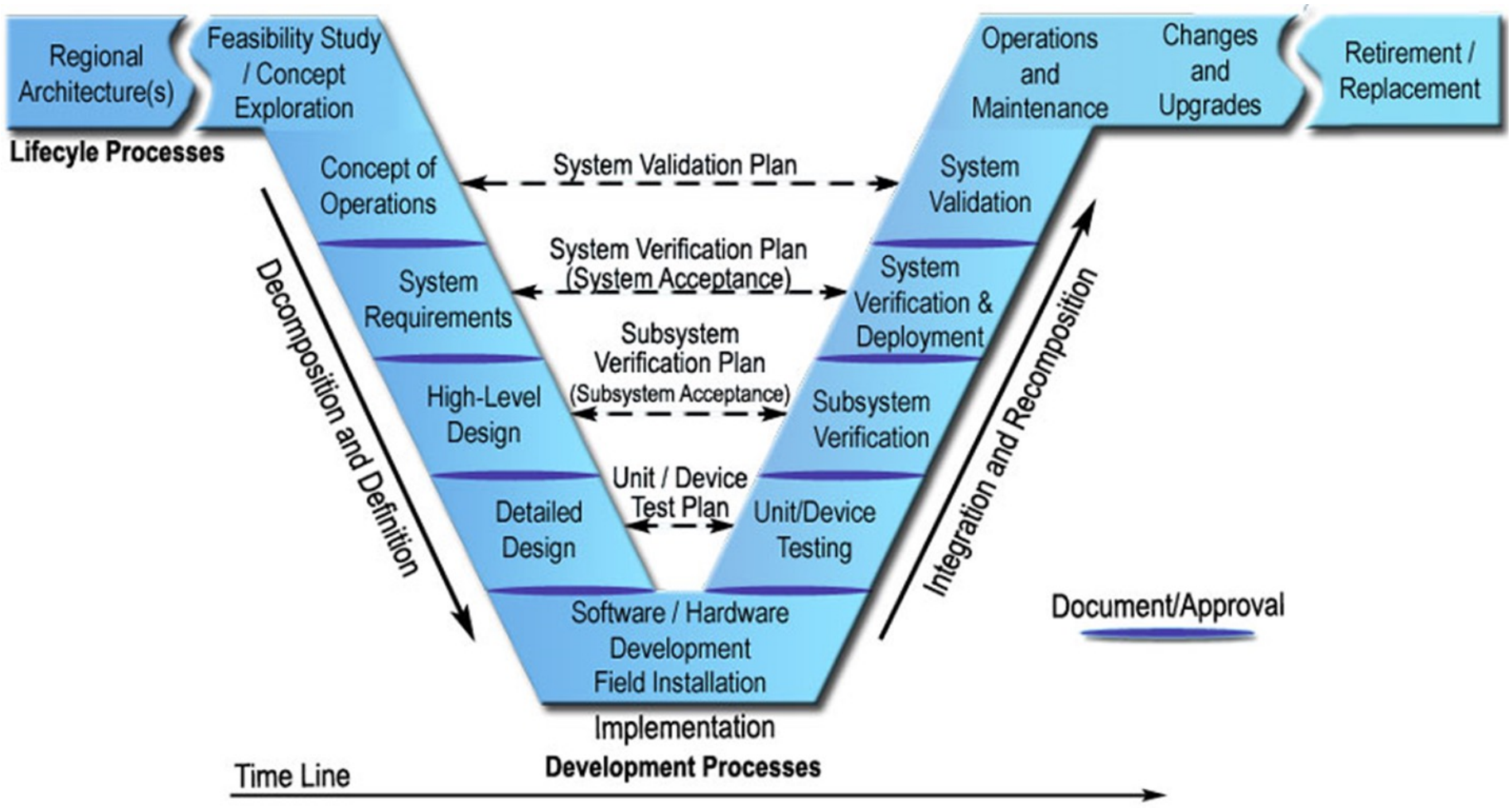
ITS4US
IT'S TRANSPORTATION FOR ALL OF US

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

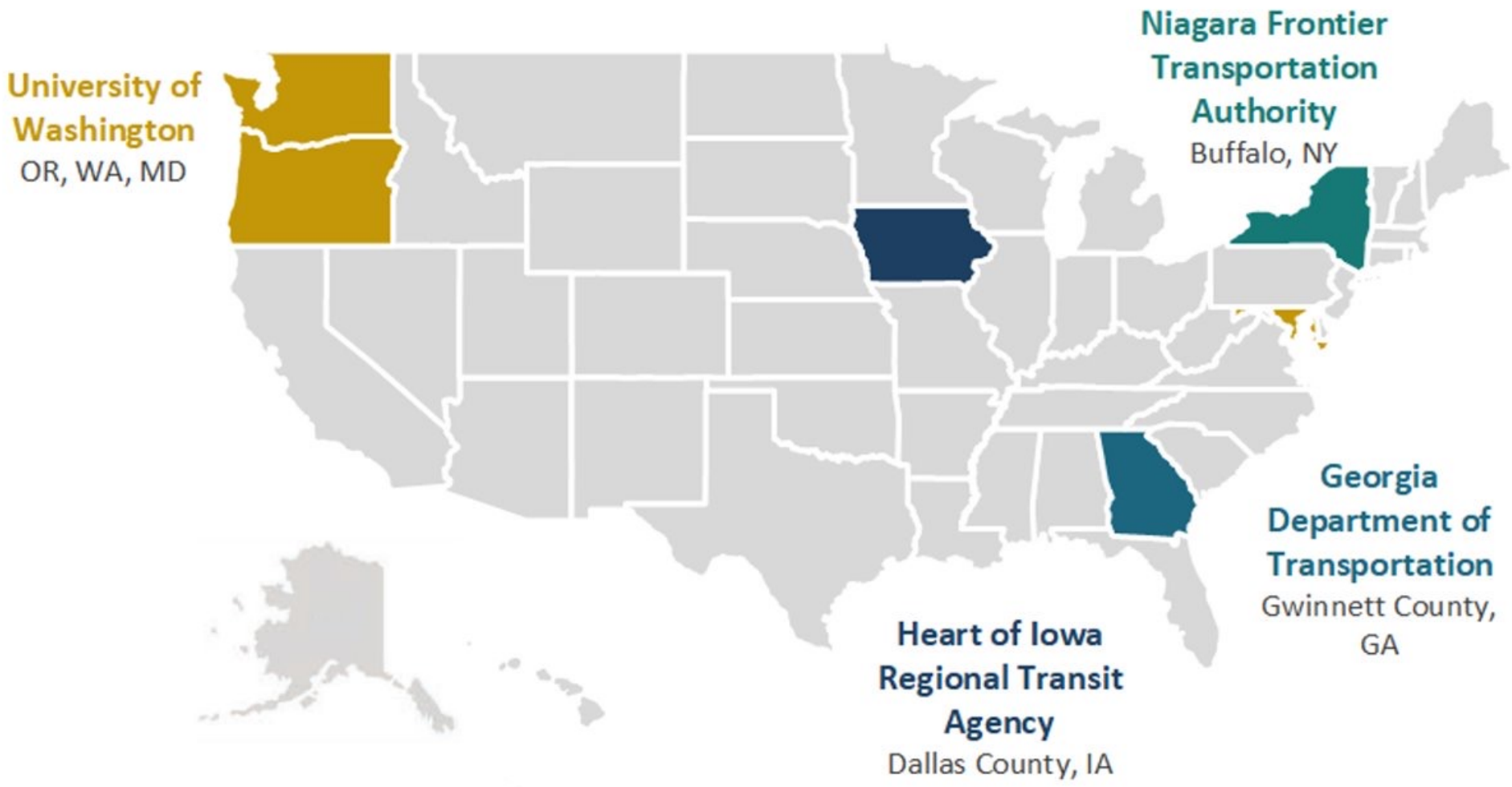
Deployment Phases



Systems Engineering "Vee" Diagram



ITS4US Deployment Sites



ITS4US Team Photo Collage

U.S. Department of Transportation

ITS4US

IT'S TRANSPORTATION FOR ALL OF US

Niagara Frontier Transportation Authority (NFTA)

BuffALLo All Access

Elina Zlotchenko, ITS4US Program Manager

Deployment Objectives

Consistent, continuous trips to, from, and within the BNMC area.

Online and offline ways to receive real time information on services, and infrastructure usability and accessibility.

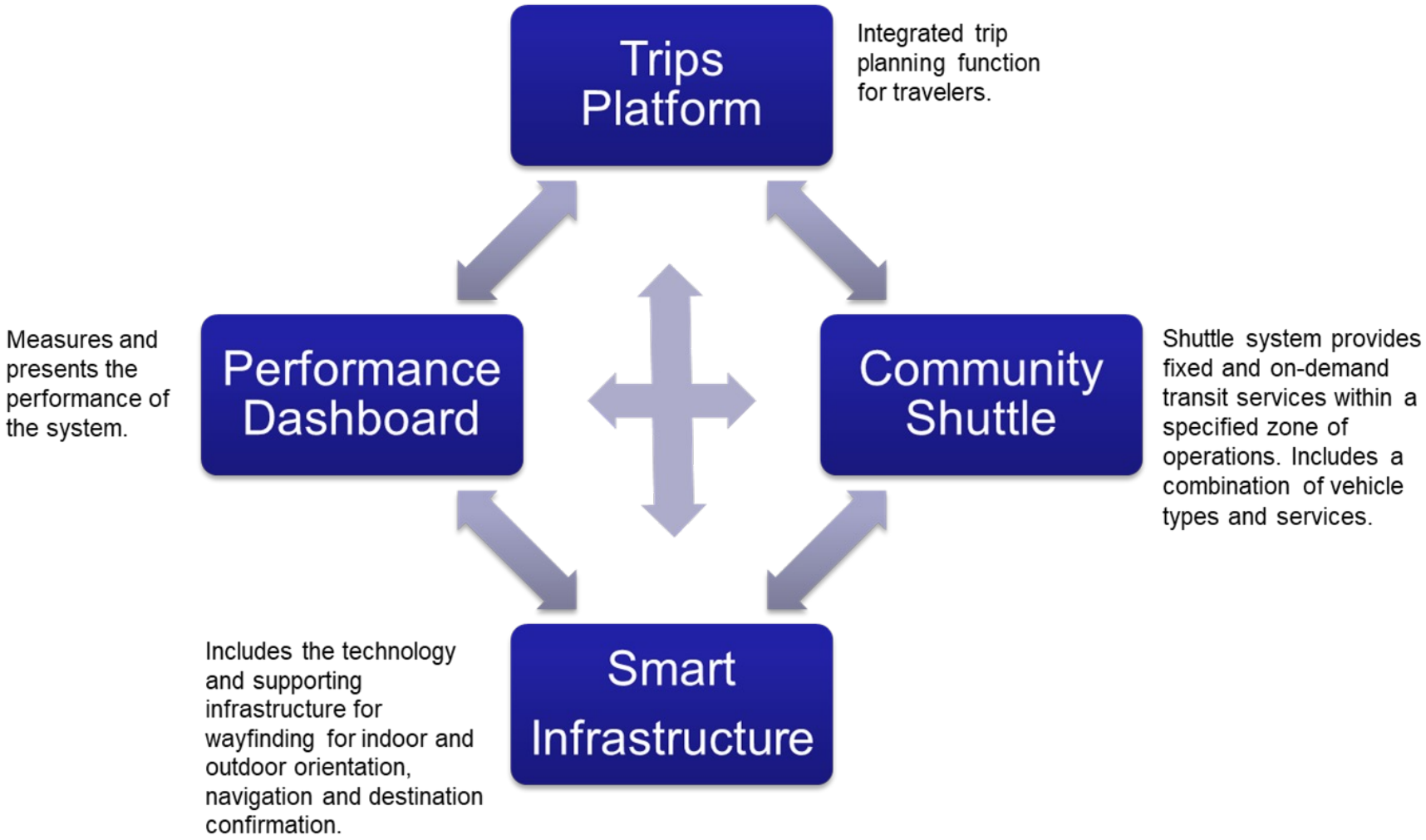
Trip paths that are **safe, accessible, and compatible** with user-defined preferences and capabilities.

Integrated, flexible, demand-responsive, end-to-end transit options for the community.

BuffALLo All Access

- Deployment area: Buffalo Niagara Medical Campus
- Deploys new and advanced technologies to address existing mobility and accessibility challenges
- Integrates accessible trip planning tool with
  - Current transit services
  - Indoor/outdoor wayfinding
  - On-demand shuttle service
  - Intersection pedestrian safety technologies
- Factors in travelers' preferences and accessibility-related needs for comprehensive trip planning

BuffALLo ALL Access System Overview



Deployment Concept Summary

Pre-Trip Planning	Transit to Campus	Within and Around Campus	Inside Building
• Turn by turn guidance to and from bus and rail stops • Availability of various transportation services — Bus, Rail, Paratransit	• App-enabled location tracking, alerts, access preferences (voice, text, haptic alerts) and real-time arrival information • App includes paths through stations, stops and buildings (elevators, stairs, walkways, escalators)	• Hail accessible human or self-driving shuttle (through app) • Universal design & pedestrian safety applications at high-traffic intersections around campus • Outdoor wayfinding, sidewalk improvement for pedestrians with and without disabilities	• Paths through partner buildings for all

At-Scale Deployment Summary

Deployment Element	Estimated Number
Participants	100 participants during Phase 2 to support development and testing of the system and its components. 300-500 participants total in Phase 3 (including Phase 2 participants). Final number will be dependent on the number of people interested in participating. Outreach and recruitment efforts will focus on obtaining the highest and most diverse number of participants possible.
Beacons/Smart Signs	Under 100 devices. The final number is unknown at the time and will be determined once the facilities are measured.
Touch Models	1 model as part of this pilot (location to be determined in Phase 2). Note that pilot will leverage the efforts of an external study that is placing another model at the Innovation Center on the BNMC.
TIH	2 hubs, with location to be determined in Phase 2.
PED-X Intersections	2 intersections, Main St. & Best St. and Ellicott St. & High St. 2 National Transportation Communications for Intelligent Transportation System Protocol (NTCIP) Supported MioVision platform to serve as a communications broker / gateway (one per intersection, total number: 2).
Vehicles	A maximum of 4 shuttles , a combination of SDS and HDS. Phase 2 will start with 2 shuttles for testing and integration efforts, and 2 additional shuttles will be added in Phase 3. SDS Vehicles: 1-2 (note: the number will depend on the procurement) HDS Vehicles: 2-3 depending on the service plan and demand.
Online/Offline Platforms	1 CTP website and mobile application. 1 Performance Dashboard.

U.S. Department of Transportation

ITS4US

IT'S TRANSPORTATION FOR ALL OF US

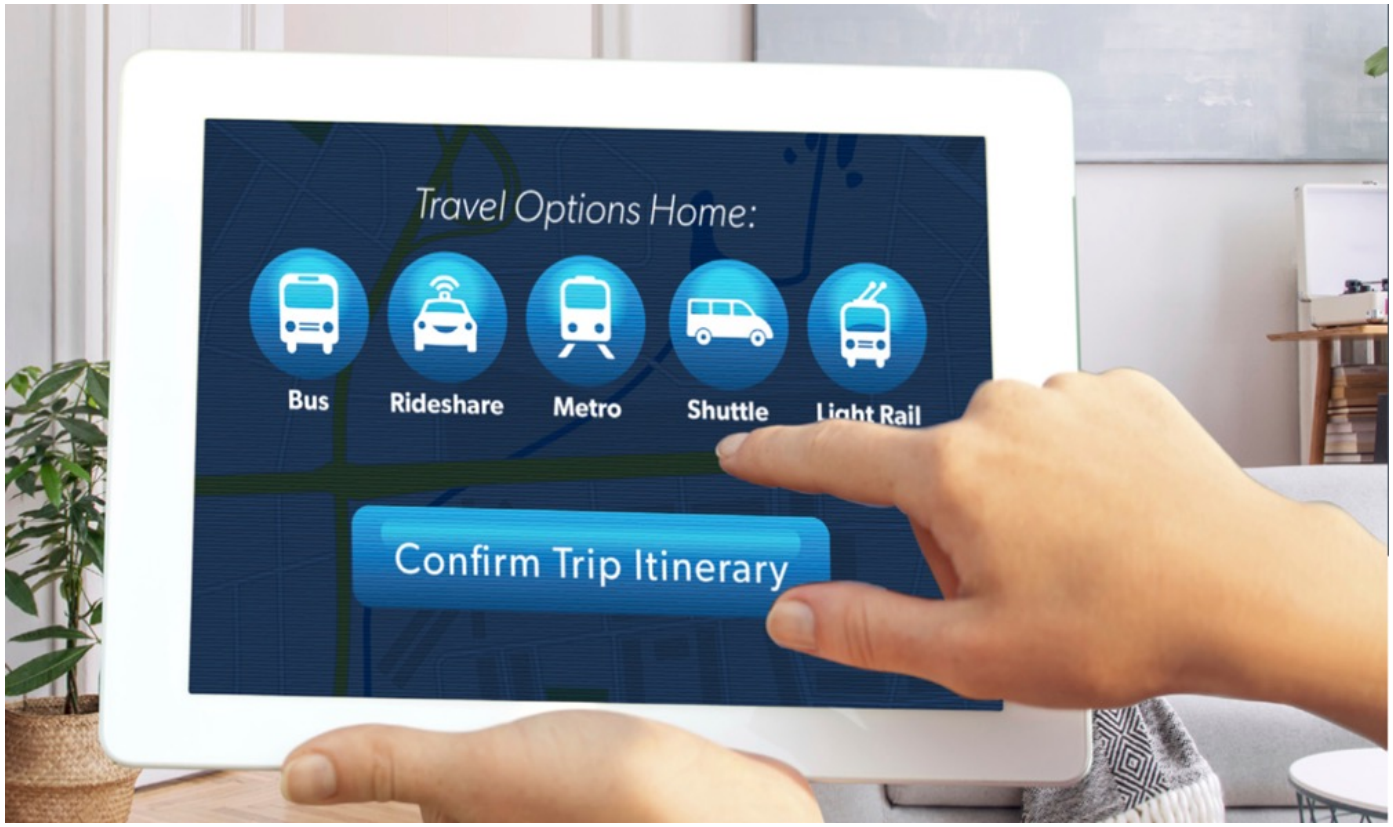
University of Washington

ITS4US Deployment Project: Transportation Data Equity Initiative

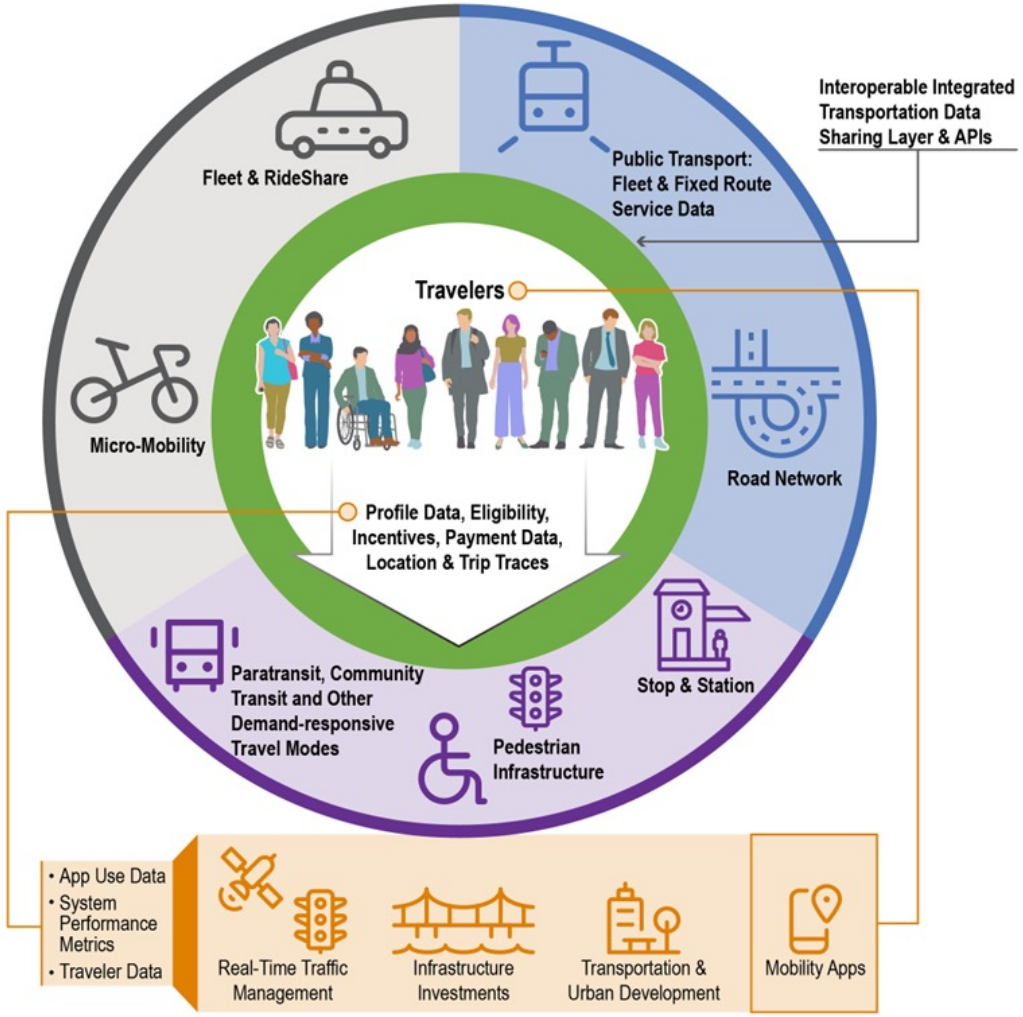
Elina Zlotchenko, ITS4US Program Manager

Transportation Data Equity Initiative (TDEI)

Tools for data sharing and interoperability to provide equitable navigation options for all travelers irrespective of location, income, or disability



All travelers need useful travel data they can trust



Provide More Equitable Mobility Benefits

Create, modify and improve data standards

- OpenSidewalks
- GTFS-Pathways (transit stations)
- GTFS-Flex (on-demand transit)

Tools to collect, store and share the data

- Data Collection
- Data Vetting
- Data Provisioning Services

Demonstrate the value of the data

- Multimodal AccessMap
- Soundscape
- Audium

Deployment Sites

U.S. Department of Transportation

ITS4US

IT'S TRANSPORTATION FOR ALL OF US

Georgia Department of Transportation (GDOT)

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

Kofi Wakhisi, AICP, ARC

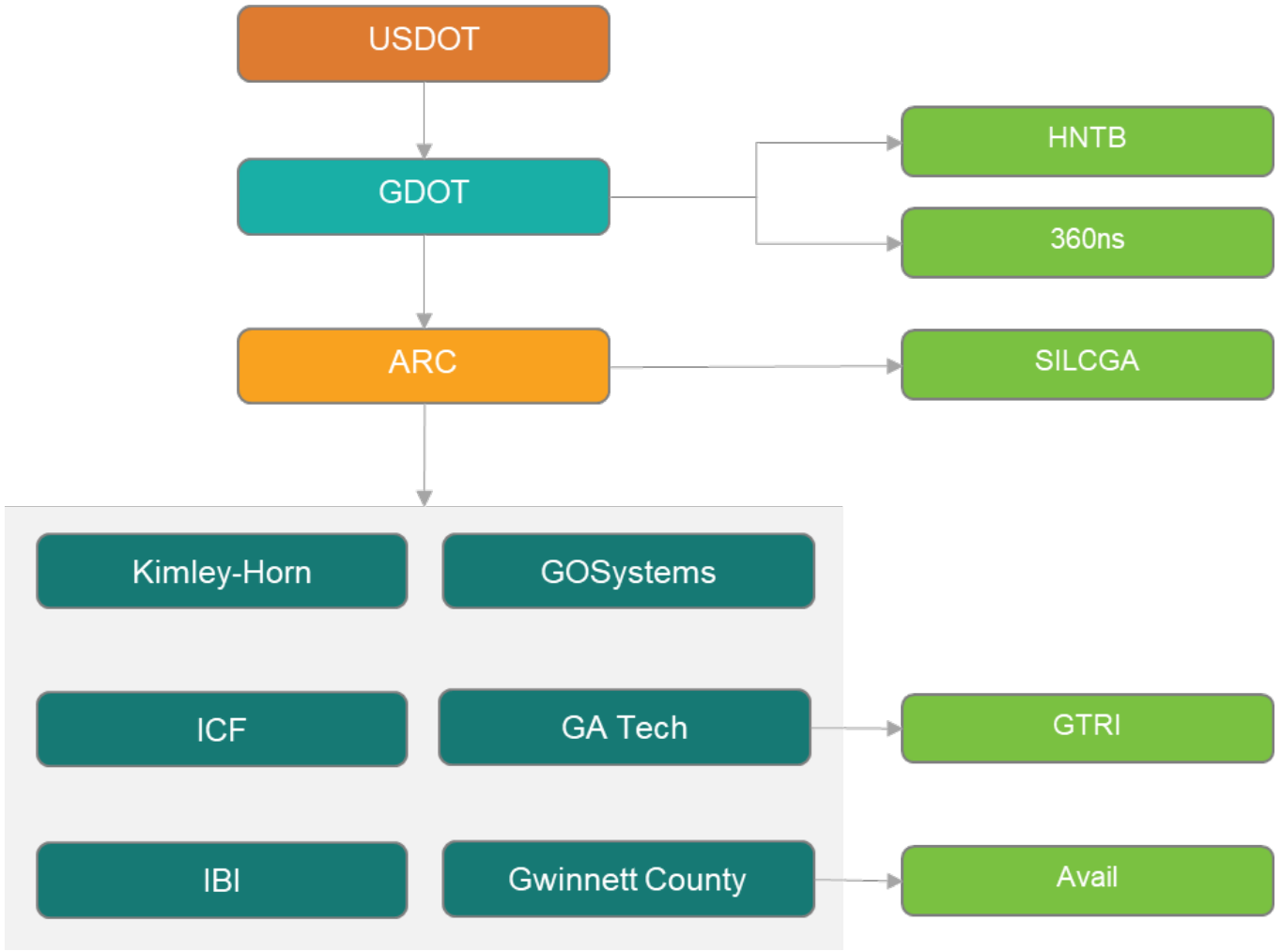
Safe Trips in a Connected Transportation Network (ST-CTN)

- Deployment area: Gwinnett County, Georgia

- Uses a mobile application with ability for users to:
  - Create personalized trip plans based on needs and preferences
  - Receive alternative trip routes

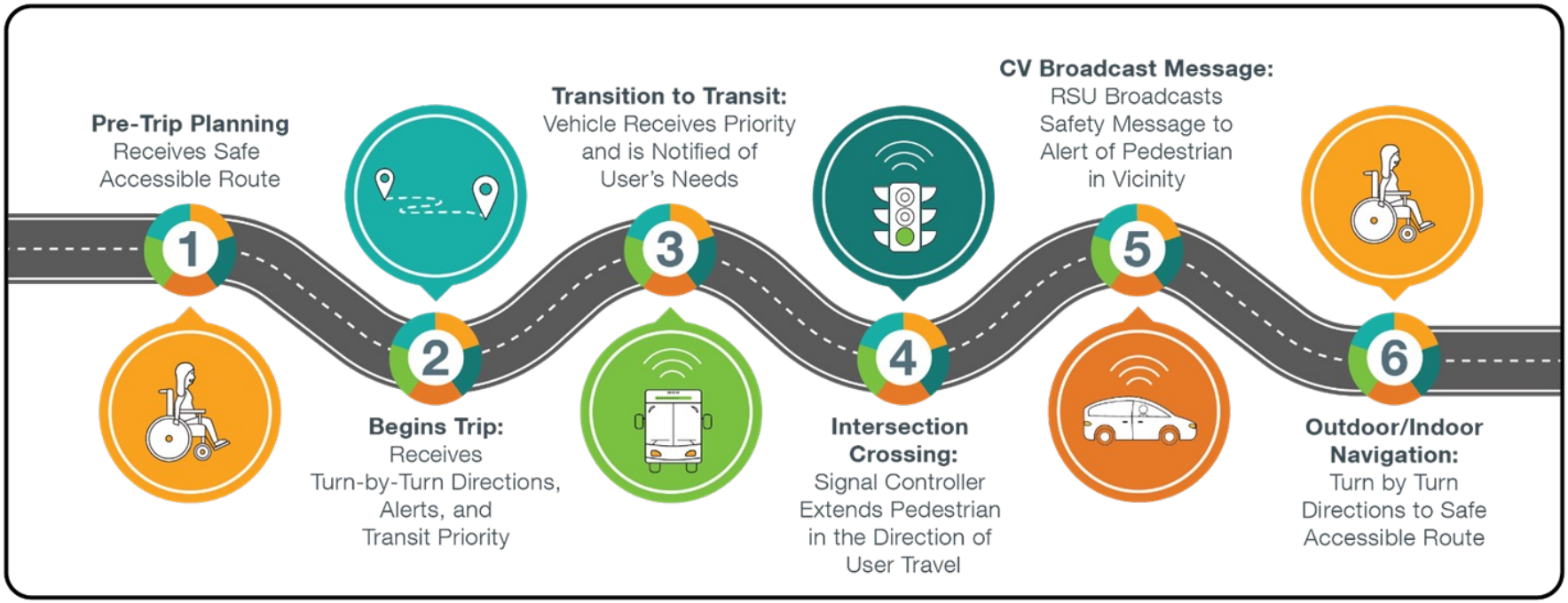
- Comprised of an integrated set of advanced transportation technologies including:
  - Connected vehicles
  - Transit signal priority
  - Machine learning
  - Predictive analysis

Deployment Concept – Phase 2/3 Project Team

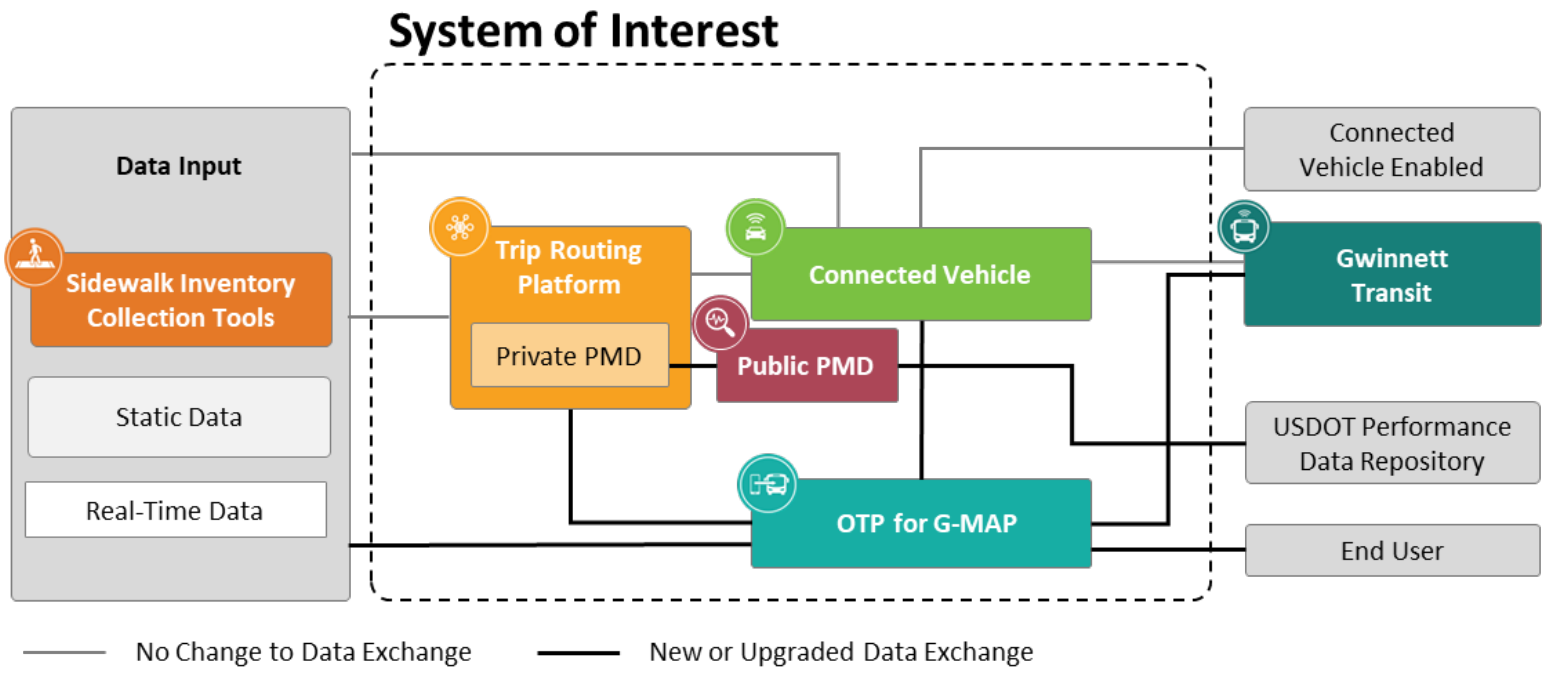


Deployment Concept – Project Overview

Safe Trips in a Connected Transportation Network



Technical Approach – Context Diagram



U.S. Department of Transportation

ITS4US

IT'S TRANSPORTATION FOR ALL OF US

Heart of Iowa Regional Transit Agency (HIRTA)

Health Connector for the Most Vulnerable: An Inclusive Mobility Experience from Beginning to End

Heidi Guenin, AICP, IBI Group

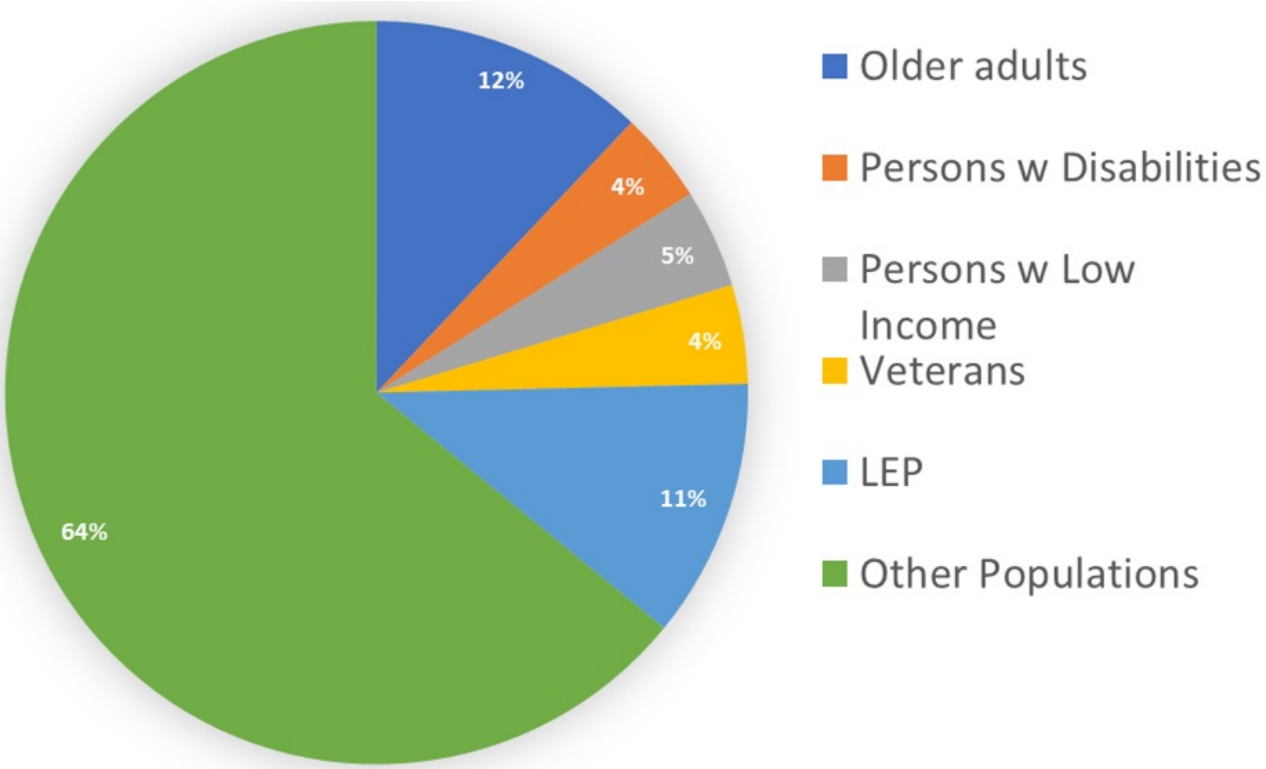
Health Connector for the Most Vulnerable

- Deployment area: Dallas County, Iowa
- Implement a scalable and replicable solution enabling transportation access to healthcare for all underserved populations and their caregivers
  - Use advanced technologies to resolve barriers
- Include information and wayfinding services to guide each step of user's trip
- Provide enhanced access to healthcare options for all travelers in Dallas County, a mostly rural county

HIRTA and Dallas County Overview

- HIRTA provides demand response services to population in 7 county areas, including Dallas County
- Dallas County grew 36% in the last decade
- Coordination of medical transportation services for underserved a major challenge

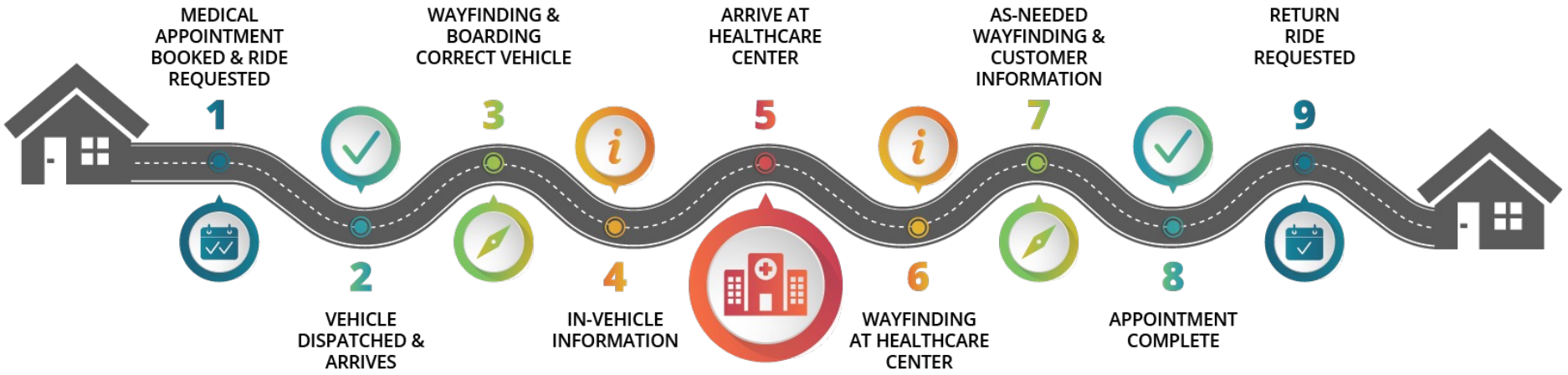
Dallas County Underserved Population



High-Level Findings from Stakeholders

- Lack of awareness on transportation options
- Lack of integrated booking and trip management experience
- Limited capabilities in current modes to meet the needs of underserved
- Limited wayfinding capabilities
- Service management challenges with return trips
- Same day and after hour service issues
- Limited data sharing and reporting to measure the performance of healthcare transportation

Concept Overview



ITS4US Site Contact Information

GDOT
https://georgia-map.com/
Alan Davis
Co-Project Management Lead
aladavis@dot.ga.gov

Kofi Wakhisi
Co-Project Management Lead
kwakhisi@atlantaregional.org

HIRTA
https://transithealthconnector.org/
Brooke Ramsey
Project Management Lead
BRamsey@ridehirta.com

NFTA
https://bnmc.org/allaccess
Robert Jones
Concept Deployment Lead
robert.jones@nfta.com

Kelly Dixon
Project Management Lead
kdixon@gbnrtc.org

University of Washington
https://transitequity.cs.washington.edu/
Anat Caspi
Deployment Development Lead
caspian@cs.washington.edu

ITS4US Contact Information

Elina Zlotchenko
Program Manager, ITS JPO
Elina.Zlotchenko@dot.gov

Visit the ITS4US Deployment Program Website:

https://its.dot.gov/its4us/

ITS4US Deployment Program Video

https://youtu.be/pztl1lRyXAc

ITS4Equity Program

- USDOT's focus on Equity and lessons learned from ITS4US points to the opportunity of furthering research and technology development to address gaps in transportation equity

- In 2023 USDOT launched a new multimodal deployment effort, led by ITSJPO and supported by OST, the **ITS4Equity Deployment Program**
- The ITS4Equity Deployment Program aims to ***reduce inequities*** through ***ITS solutions*** to promote **safe**, **affordable**, and **accessible** multimodal access to opportunities and services to communities.

Questions & Answers