



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.

**Webinar #1: Overview of the Complete Trip
- ITS4US Deployment Program**

January 30, 2020



Loren Smith

Deputy Assistant Secretary for Policy
U.S. Department of Transportation

USDOT Secretary Chao's Priority: Expanding Access to Transportation

- USDOT is launching a new department-wide initiative to expand access to transportation for people with disabilities, older adults, and individuals of low income. The **Complete Trip Portfolio** will identify ways to provide more efficient, affordable, and accessible transportation for underserved communities.
- Secretary Chao announced her intent to fund 3 new programs as part of the Complete Trip Portfolio to develop and deploy innovations in technology and further interagency partnerships to improve mobility:
 - Complete Trip – ITS4US Deployment Program
 - Inclusive Design Challenge
 - Mobility for All Pilot Program

Complete Trip - ITS4US Deployment Program

- A USDOT Multimodal Deployment Effort, led by ITSJPO and supported by OST, FHWA and FTA
- Built upon previous USDOT research investments, the Complete Trip-ITS4US Deployment Program supports communities in developing innovative integrated technologies and creating public-private partnerships to move towards complete trip deployments

Vision

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



Elina Zlotchenko

Program Manager

ITS Joint Program Office

Today's Agenda

- Program Overview
 - Goals, Guiding Principles, and Fundamental Elements
 - Phases
 - Partnerships
- Potential Transportation Challenges and Populations
- Complete Trip Concept
- Upcoming Outreach and Next Steps
- Stakeholder Q&A

Program Overview

- Up to \$40 million available for communities to demonstrate innovative and integrated complete trip deployments to support seamless travel for all users across all modes, regardless of location, income, or disability
- Procure and award multiple large-scale, replicable deployments to address the challenges of planning and executing all segments of a complete trip



The *Complete Trip Concept*: An individual's ability to go from origin to destination reliably, spontaneously, confidently, independently, safely, and efficiently without gaps in the travel chain.

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

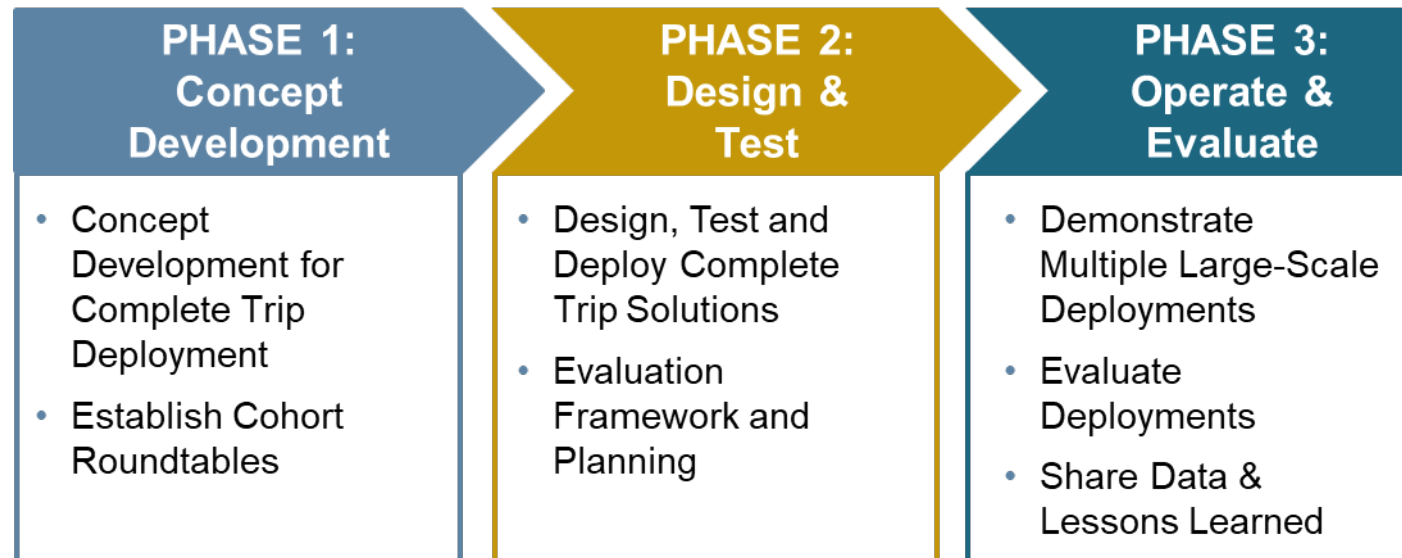
Complete Trip Deployment Concept: Fundamental Elements

- Complete Trip deployments will be real-world environment **deployments**
 - If successful, deployed technologies are expected to remain as permanent operational elements
 - Successful sites will serve as replicable models for other candidate deployers
- There will be **multiple** Complete Trip deployments
 - Each site will have different solutions based on their population travel needs
 - Deployments must address their populations' challenges of planning and executing complete trips
 - The unique needs of each site must drive the deployment process
- Complete Trip deployments are expected to be both **large-scale and multi-modal**
 - **Large-scale** implies deployments will have measurable impact, not a specific minimum geographic size
 - Sites will deploy **multiple technologies and modes**

Guiding Principles For Deployers

- Integrated, Innovative and Emerging Technologies
- Inclusive Design
- Long-Term Viability and Partnerships
- Open and Secure Data and Standardization

Deployment Phases



Phase 1: Concept Development

- Upcoming Procurement for Phase 1 Concept Development
- Major deliverables include:
 - Concept of Operations
 - System Requirements
 - Comprehensive Complete Trip Deployment Plan
- Deployment Concept Process:
 - Identify Local Needs
 - Set Performance Goals
 - Select Emerging Technologies That Work Together to Meet Those Goals

Partnerships

- Strong partnerships are an expected feature of Complete Trip Deployments
 - Encourage partnerships of multiple stakeholders, including as needed:
 - Public sector partners (agencies, planning organizations, localities)
 - Private sector partners (e.g. technology vendors, integrators)
 - Academic and research institutions
 - Social service organizations
 - Advocacy groups
 - Potential organization structures
 - Options where private sector or public sector organizations may lead
 - Single point of responsibility/control a desired attribute of Complete Trip deployments
 - No “template” for how individual deployments should/must be organized

Next Steps

- Program 2020 Schedule
 - Pre-Deployment Outreach Webinars (Winter-Spring)
 - Solicitation for Deployment Phase 1 Released (Summer 2020)
 - Solicitation Award (Fall 2020)

For more information:

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

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



Dawn Sweet

Director of Headquarters Operations
FTA Office of Civil Rights

The Challenge

- The Program aims to solve mobility challenges for all travelers, including:
 - People with Disabilities
 - Older Adults
 - Low-Income Travelers
 - Rural Residents
 - Veterans
 - Limited English Proficient Persons
- Populations have differing and unique travel needs and challenges
- Significant overlap exists among the populations



People with Disabilities



Older Adults



Low Income



Rural Residents



Veterans



Limited English Proficiency

People with Disabilities – Mobility

All Travelers Need Accessible Mobility Options

Nearly 1 in 7 adults in the US live with a mobility disability



People with Disabilities – Vision



Travelers Who Are Blind or Have Low Vision Need Better Trip Navigation Tools

Almost 5% of US adults have blindness or serious difficulty seeing

People with Disabilities – Cognitive

People with Cognitive Disabilities Need Improved Services for Independent Mobility

About 1 in 10 of adults live with a cognitive disability



People with Disabilities – Hearing

People with Hearing Disabilities Need Better Traveler Information Tools

6% of adults are deaf or have serious difficult hearing



Older Adults

Older Americans are Redefining Longevity

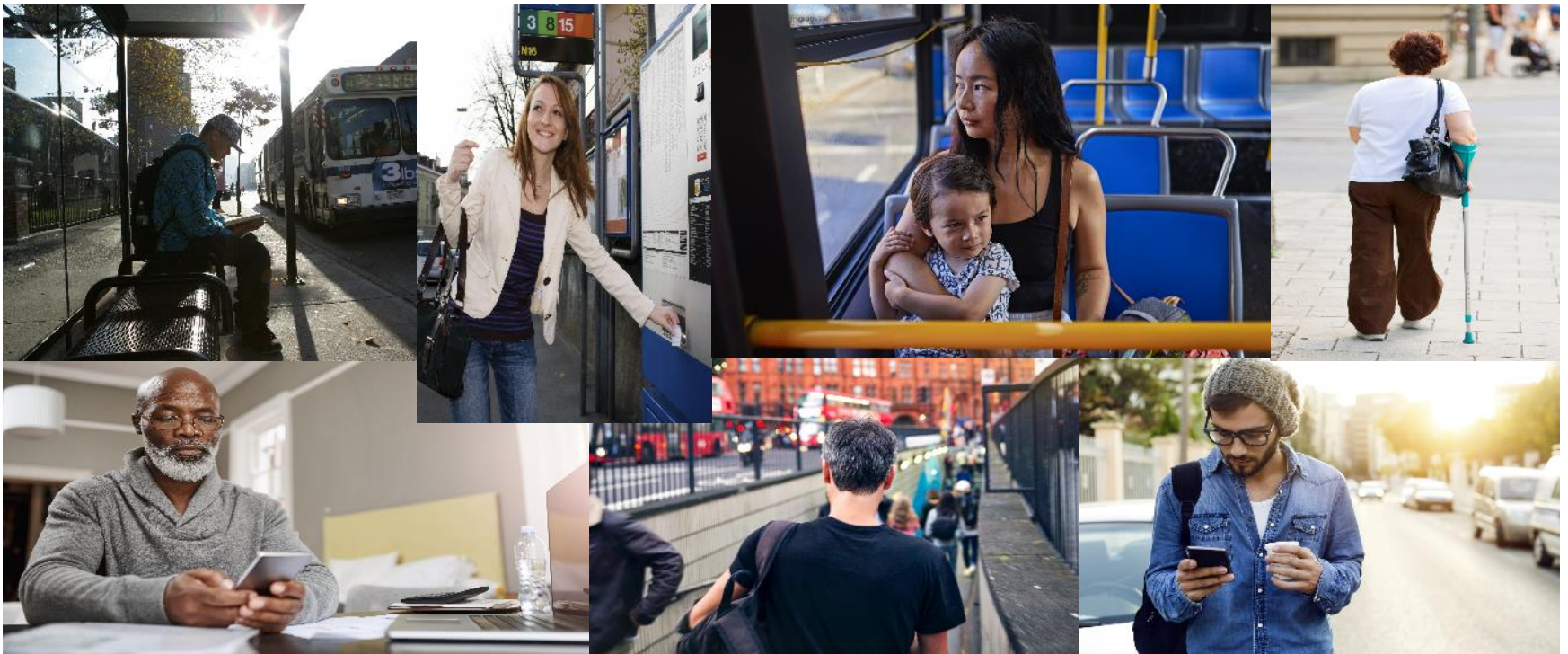
By 2060, nearly 25% of US residents will be age 65 or older



Low Income

Low Income Travelers Need Reliable and Affordable Transportation

24% of those in poverty have no access to a personal car



Rural Residents

Rural Residents Need Convenient Transportation Options

About 60 million Americans live in rural areas



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Veterans



Veterans Need Reliable Mobility Choices

Of over 18 million Veterans in the US, about 25% have a service-related disability

Limited English Proficiency (LEP)



**People with LEP
Need Effective
Communication
Tools to Access
Mobility Options**

As of 2015, about 9% of
the US population has
LEP



Shari Schaftlein

Director, Office of Human Environment

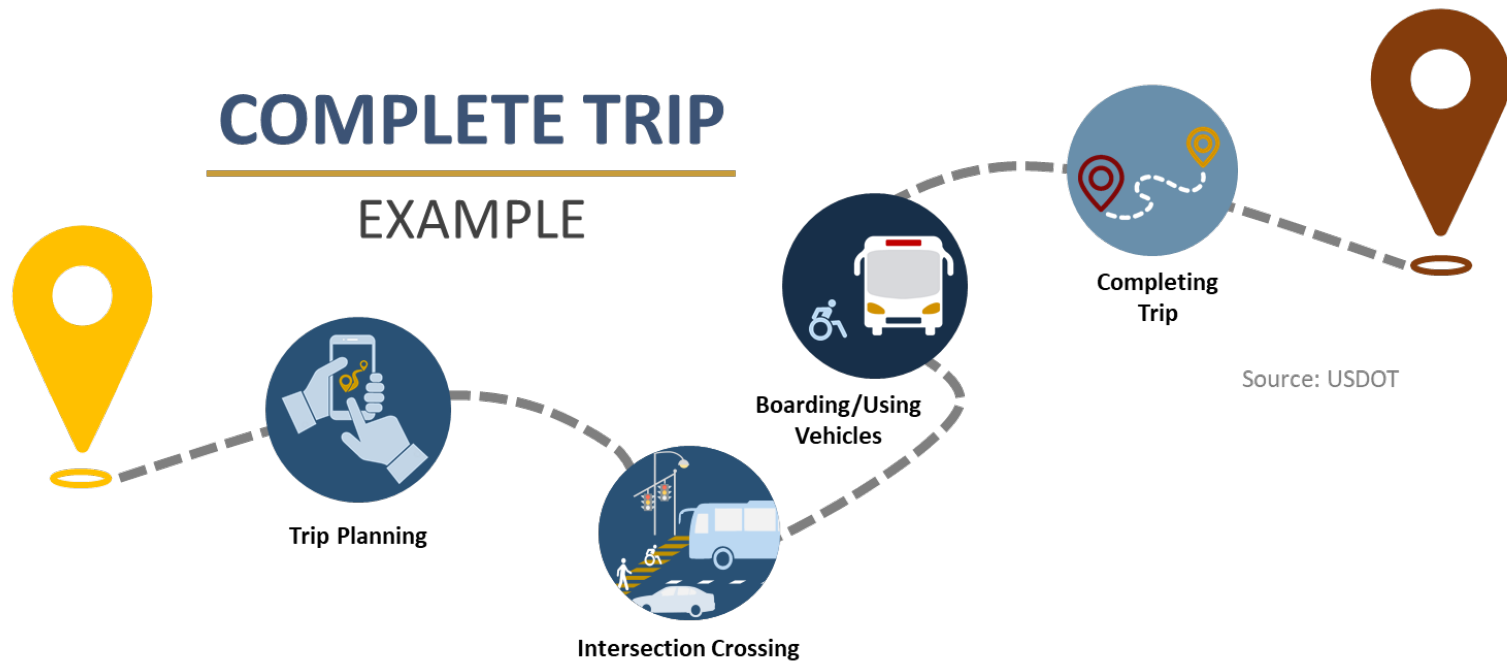
Federal Highway Administration (FHWA)

Complete Trip Concept

- The **Complete Trip Concept**:
The success of a complete trip can be defined in terms of an individual's ability to go from origin to destination reliably and efficiently without gaps in the travel chain
- If the infrastructure is not available or in a state of good repair and if one segment of the trip chain is inaccessible, unreliable or inefficient, then access to subsequent segments is broken, and the trip cannot be completed



Complete Trip Example



Trip Planning

- Pre-activities such as trip visualization, trip planning, travel training, and pre-trip reminders and alerts
- Example challenges include:
 - Lack of access to trip planning information and centralized trip planning services make it difficult to plan different part of the trip
 - Providers may not disseminate information for their services, especially a change or disruption in service
 - Trip planning tools not in accessible formats or languages
 - Limited access to the internet or a smartphone



Outdoor Navigation

- Navigation in outdoor settings including first-and last-mile access/egress segments with information on route conditions, landmarks, and directions based on traveler's preferences
- Example challenges include:
 - Lack of tools providing localization and real-time step-by-step navigation with point of interest information
 - Limited information about routes and conditions, detours, or unexpected barriers
 - Lack of accessible tools with capability to tailor information for individual traveler needs
 - Limited cellular connectivity to access traveler information



Intersection Crossing

- Includes technologies to help pedestrians interact with intersections and other crossings, alert the intersection that a pedestrian is crossing, request additional crossing time, and connect to transit stops on the other side of crossing
- Example challenges include:
 - Insufficient time for street crossings
 - Lack of accessible information of when it is appropriate to cross and how much time a traveler has to safely cross the street
 - Conflicts points with bicycle lanes



Boarding and Using Vehicles

- Includes accessibility for entering and exiting vehicles, information while on-board vehicles, and interactions/interfaces between the user, vehicles, and infrastructure.
- Example challenges include:
 - Limited accessible vehicles available
 - Lack of accessible information when approaching a stop
 - Lack of consistent information about arriving vehicles to board correct vehicle
 - Lack of tools to assist in communicating with transit drivers to ensure boarding/departing at the correct stop
 - Challenges navigating timed features, such as fare gates and doors
 - Gaps and or steps between vehicle and platform/sidewalk



Transferring Between Vehicles/Modes/Payment and Using Stops/Stations

- Transfers at outdoor bus and rail stations, indoor transit center, mode shifts, or cross-jurisdictional transfers. This segment include using station infrastructure and information and integrated payment across modes
- Example challenges include:
 - Lack of real-time information in accessible formats and multiple languages to guide transfers
 - Lack of coordination between public and private services
 - Lack of tools to assist with transfers and payments, requiring users to manage multiple payment methods
 - Poor signage, inaccessible vehicle or platforms, and low service frequency



Indoor-Outdoor Transition

- Intersection of outdoor and indoor navigation, allowing a seamless transition inside or outside and continue the trip by identifying the correct entrance/exit, building features, and localizing/orientation after the transition
- Example challenges include:
 - Lack of precise information on localization and routing for travelers to identify entrances
 - Lack of information about environments, such as stairs, ramps, and doors



Indoor Navigation

- Localization, situational awareness, and navigation of large indoor spaces such as train stations, airports, malls, recreation facilities, and medical facilities
- Example challenges include:
 - Lack of accurate information to identify features such as doorways, elevators, staircases, and other points of interest
 - Localization and wayfinding services unavailable in indoor environments without global positioning system (GPS) navigation
 - Complex indoor environments with poor wayfinding signage and crowding



Connecting and Completing Trip Segments

- Connections between all trip segments, which may include first-and last-mile connections, notification of caregivers of arrival, managing unanticipated conditions, and technologies to confirm the trip segment was completed safely and accurately
- Example challenges include:
 - Uncertainty whether the traveler has reached the correct destination
 - Lack of affordable first-and last-mile services, especially in rural areas and locations underserved by public transit
 - Difficulties for travelers requiring door-through-door services when using curb-to-curb services





Elina Zlotchenko

Program Manager

ITS Joint Program Office

Upcoming Outreach Activity

- Save the date for the remainder of the webinar series:
 - Partnership and Planning: February 13, 2020, 1:00 – 2:30 PM ET
 - Enablers and Technologies: February 27, 2020, 1:00 – 2:00 PM ET
 - Deployment Scenario Examples: March 12, 2020, 1:00 – 2:00 PM ET
 - Deployment Scenario Examples: March 26, 2020, 1:00 – 2:00 PM ET
 - Privacy, Security, and Open Data: April 9, 2020, 1:00 – 2:00 PM ET
 - Procurement Path: April 23, 2020, 1:00 – 2:00 PM ET
- All webinars will be recorded. Recordings and slide decks will be posted on the program website: <https://its.dot.gov/its4us/>

CALL TO ACTION

- How can you engage?
 - Identify needs
 - Build the right team
 - Develop innovative solutions
- Webinar series is an opportunity to mature innovative concepts and build the right team!

Stakeholder Q&A

For more information please contact:

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

Visit the Complete Trip - ITS4US Deployment Program
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