COMPLETE TRIP

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Heart of Iowa Regional Transit Agency Phase 1 Performance Measurement and Evaluation Support Plan Webinar

November 3, 2021

Agenda

▪ Purpose of this Webinar

- To share the submitted Performance Measurement Plan from *HIRTA* with the stakeholders of the project and ITS4US community.

▪ Webinar Content

- Complete Trip – ITS4US Deployment Program Overview (*Fred Bowers*)
- Site Orientation & Deployment Concept Overview (*Brooke Ramsey*)
- Performance Measurement and Evaluation Support Plan (*Santosh Mishra* and *Steve Wilks*)
- Stakeholder Q&A
- How to Stay Connected (*Fred Bowers)*

▪ 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

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Program Overview

Fred Bowers, Site COR

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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

Vision

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

The Complete Trip Concept

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

INDOOR NAVIGATION

VEHICLES & MODE TRANSFERS/PAYMENT STOPS & STATIONS

TRIP PLANNING

INTERSECTION CROSSING

CONNECTING & COMPLETING TRIP SEGMENTS

OUTDOOR NAVIGATION

EXIT

INDOOR/OUTDOOR TRANSITION

BOARDING/USING VEHICLES

Source: USDOT

Program Goals

- Spur high-impact integrated Complete Trip deployments nationwide

- Identify needs and challenges by populations

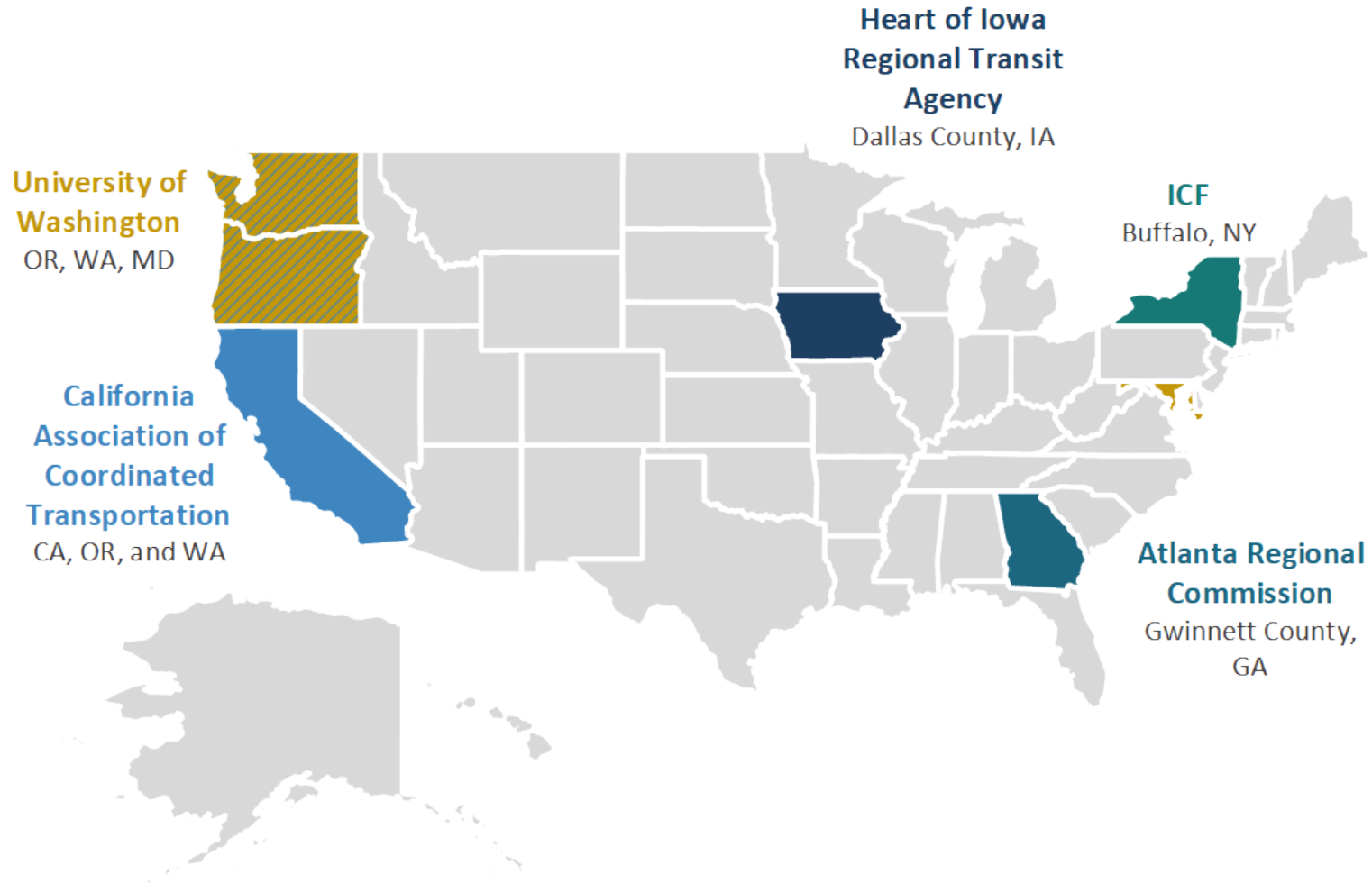- Develop and deploy mobility solutions that meet user needs
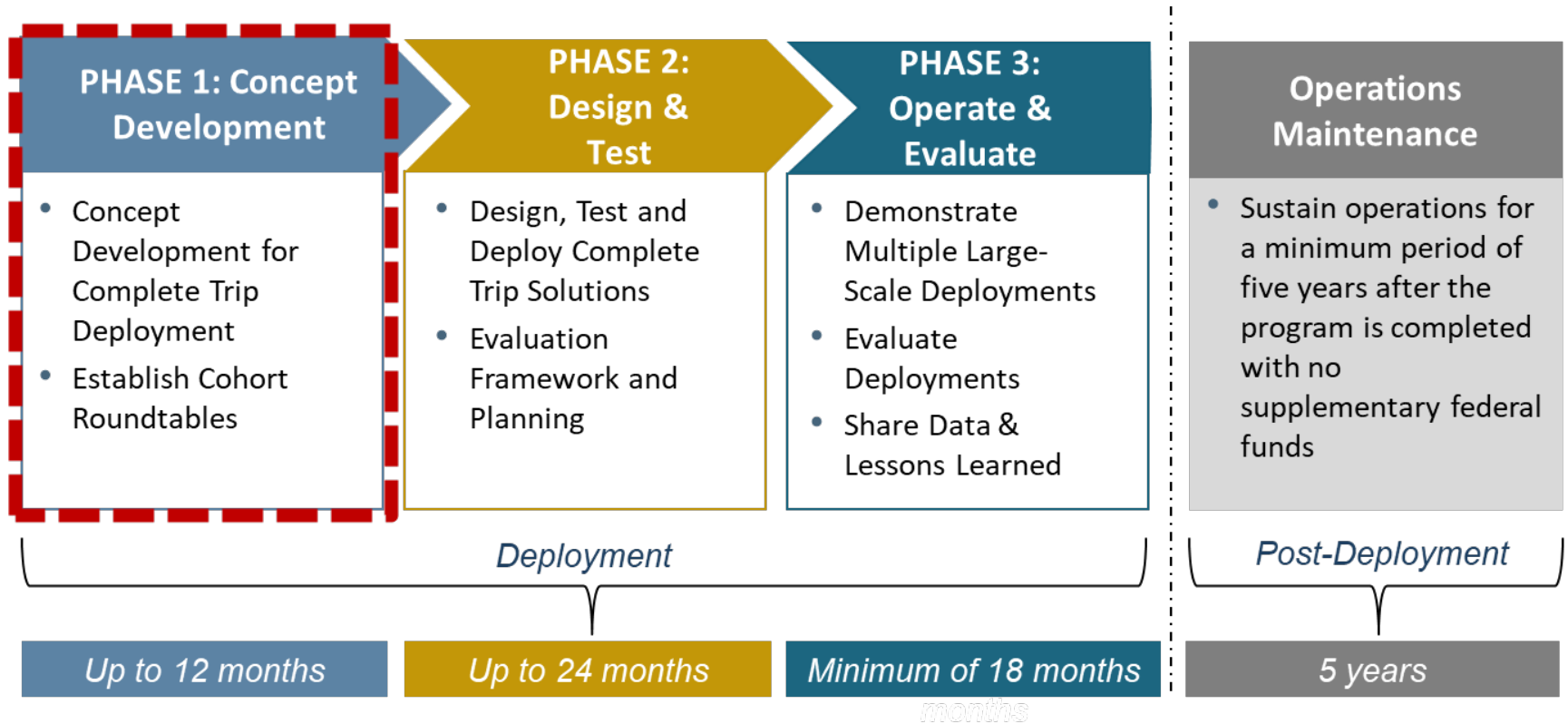
- Measure impact of integrated deployments

- Identify replicable solutions and disseminate lessons learned

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Complete Trip Phase 1 Awardees

Heart of Iowa
Regional Transit
Agency
Dallas County, IA

University of
Washington
OR, WA, MD

ICF
Buffalo, NY

California
Association of
Coordinated
Transportation
CA, OR, and WA

Atlanta Regional
Commission
Gwinnett County,
GA

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Deployment Phases

PHASE 1: Concept Development	PHASE 2: Design & Test	PHASE 3: Operate & Evaluate	Operations Maintenance
• Concept Development for Complete Trip Deployment • Establish Cohort Roundtables	• Design, Test and Deploy Complete Trip Solutions • Evaluation Framework and Planning	• Demonstrate Multiple Large-Scale Deployments • Evaluate Deployments • Share Data & Lessons Learned	• Sustain operations for a minimum period of five years after the program is completed with no supplementary federal funds

Deployment

Post-Deployment

Up to 12 months	Up to 24 months	Minimum of 18 months	5 years

HIRTA Health Connector Overview

Brooke Ramsey, Project Management Lead

U.S. Department of Transportation
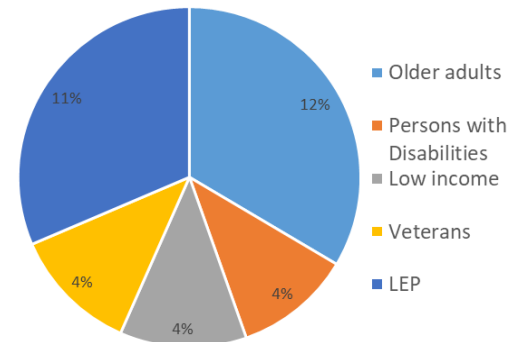ITS Joint Program Office

HIRTA and Dallas County Overview

- HIRTA provides demand response services to population in 7 county areas, including Dallas County

- Dallas County grew at 36% in the last decade

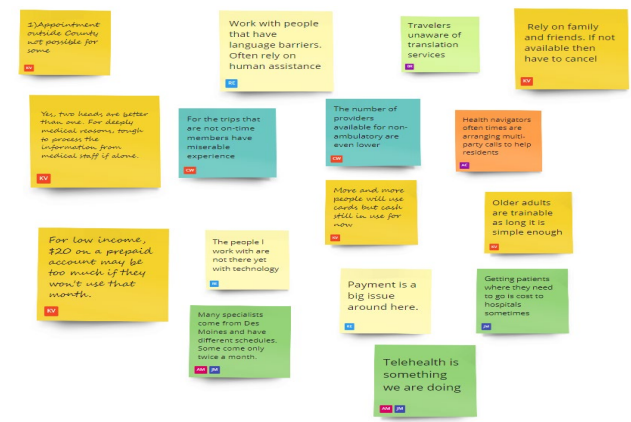- Coordination of medical transportation services for underserved a major challenge
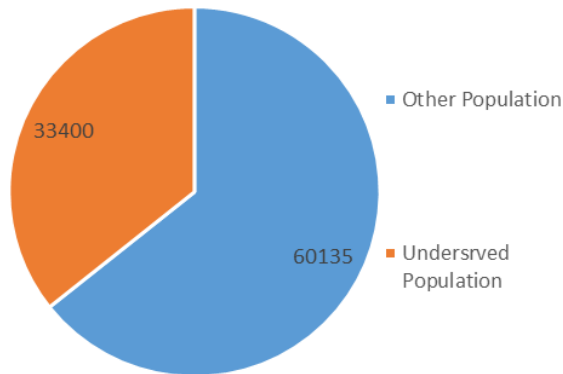
Population Breakdown in
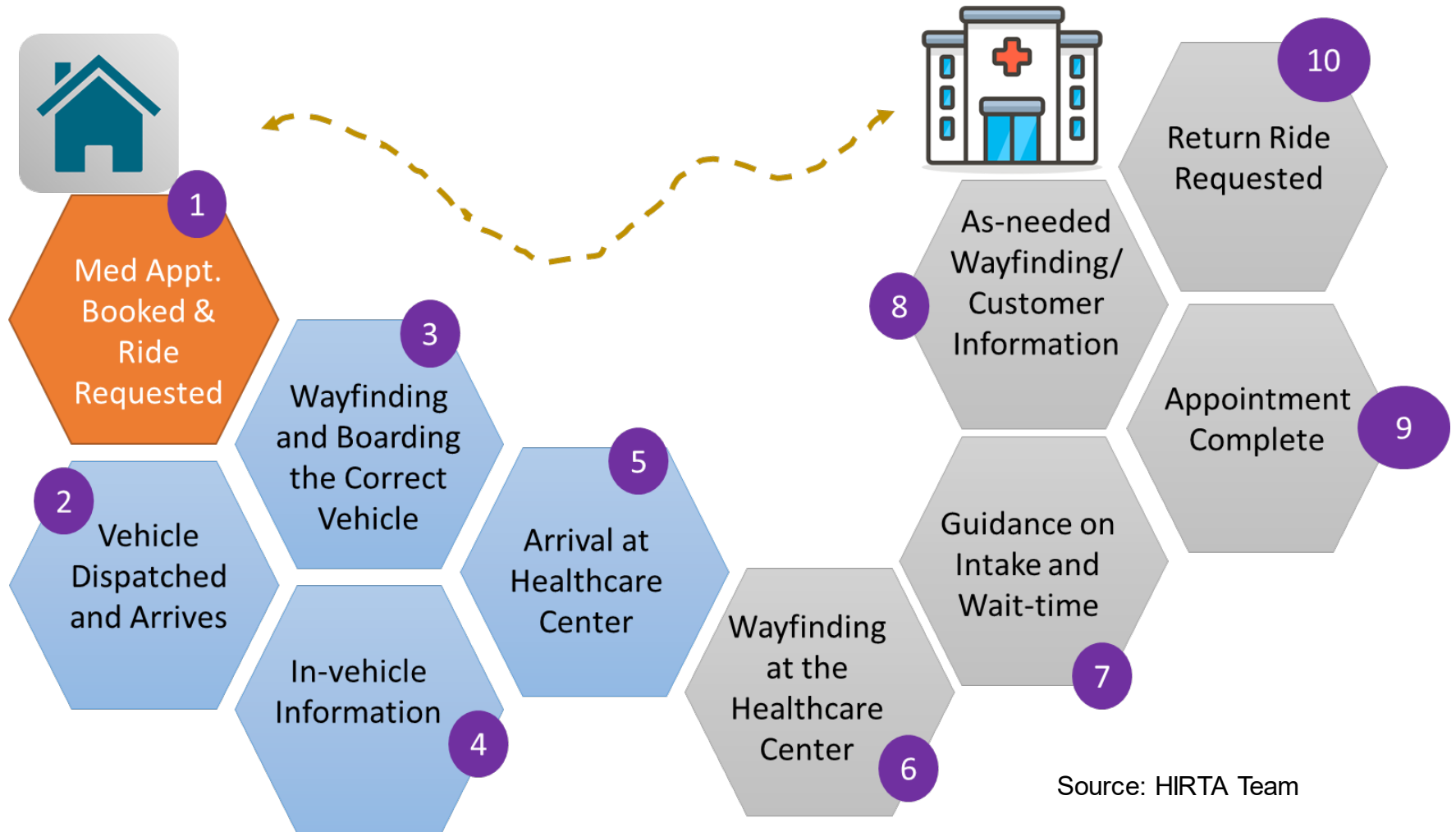Dallas County (Source: Census 2019)

Underserved Population (Total: 33,500) Share in
Dallas County (Source: Census 2019)

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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

Health Connector Complete Trip Overview

1. Med Appt. Booked & Ride Requested
2. Vehicle Dispatched and Arrives
3. Wayfinding and Boarding the Correct Vehicle
4. In-vehicle Information
5. Arrival at Healthcare Center
6. Wayfinding at the Healthcare Center
7. Guidance on Intake and Wait-time
8. As-needed Wayfinding/ Customer Information
9. Appointment Complete
10. Return Ride Requested

Source: HIRTA Team

Performance Measurement Plan Overview

Steve Wilks, Concept Development Lead

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Goals

- G1-Improved Health outcomes for Dallas County Residents

- G2-Self-reliance and Spontaneity for Underserved Groups

- G3-Efficient Transportation Management Capabilities for Medical Transportation Services

- G4-Financial Sustainability of Medical Transportation Programs

- G5-Safe Medical Transportation Services

Key Use Cases

- Fixed Recurring Appointment
- Recurring but Irregular Appointment
- Medical Transportation Needs for Veterans
- An Older Adult using Medicaid Benefits
- Return Trip Depends on Planned Discharge Per Progression of Recovery
- No-show for Inbound Transportation but Return Trip Needed
- After-hours Service Needed for Urgent Care

Approach to Defining Performance Measures

- Identification of Categories and MPM measures as Initial List
  - Core Measures
  - Tier 1 Measures
  - Tier 2 Measures
  - Tier 3 Measures
- Mapping to Goals and Objectives
- Mapping to Use Cases
- Data Sufficiency Check
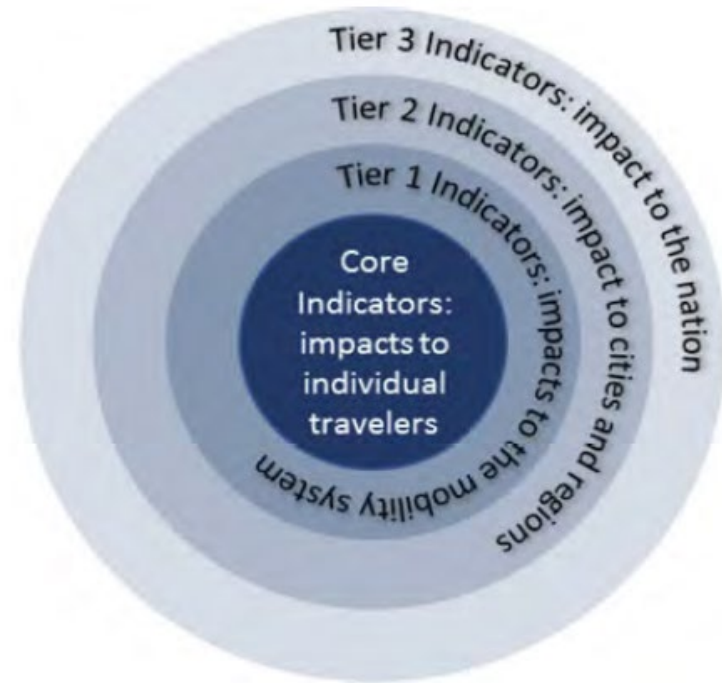
Source: Transit Center, "Mobility Performance Metrics (MPM)," February 2020, Federal Transit Administration, Report No.: 0150

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Performance Measures

- Core:
    - PM#1: Ability to Dynamically Reassign Vehicles to Address Service Disruption
    - PM#2: Availability of Transportation alternatives
    - PM#3: Trips Unfulfilled due to System Unreliability
    - PM#4: ETA Prediction Accuracy
    - PM#4: On-time Performance
    - PM#5: Travel-time Prediction Accuracy
    - PM#8: Spontaneity Time
    - PM#9: Time spent in Non-vehicle Component of Complete Trip (access and wait time)

Performance Measures (contd.)

- **Core (contd.)**
  - PM#10: Privacy Protection
  - PM#11: Traveler Safety in Healthcare Transportation
  - PM#12: System's Ability to Meet Accessibility Needs
  - PM#13: Self-reliance/Dignity Index
  - PM#14: Reduced Anxiety/Stress in Medical Transportation
  - PM#15 Complaints and Customer Satisfaction
  - PM#16: System Productivity (Trips/Hour)
- **Tier 1:**
  - PM#17: Ability to Assign Trips to Third-party Providers
  - PM#18: Minimized Deadhead Hours/ Time
  - PM#19: WAV Reliability
  - PM#20: Increased Cost Efficiency

Performance Measures (contd.)

- Tier 1:
  - PM#21: Improved Coordination among HIRTA, Healthcare Providers and Health Navigators
  - PM#22: Delivery of Safe Healthcare Transportation
- Tier 2:
  - PM#23: Reduction in Medical appointment Deferment due to Transportation
- Tier 3
  - PM#24: Savings due to Reduction in No-shows for Medical Appointments
  - PM #25: Safe Transportation Access to Healthcare Facilities

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Constraints

- PII in Traveler Details and Trip history Data
- Access to Search History Logs
- Wayfinding Request Details
- Survey Design and Recruitment
- Extrapolation for Tier2 and Tier 3 Metrics.

Confounding Factors

- Similar Capabilities available from Other Entities
- Traffic Delays Caused by Factors beyond HIRTA's Control
- Impact of Weather on Traveler's Choice and Perception
- Limitations in Capacity due to Participation of Service Providers in Rural Areas
- Safety Events Caused by Factors Beyond HIRTA'sor its Partners' Control
- Other Factors Causing Improvements in Health Outcomes

Confounding Factors

- Reasons for No-shows and Cancellations May not be Known
- Traveler Anxiety May be Due to Factors Beyond Control
- Temporary Outage or Degraded System Performance
- Customer Complaints may not be Valid

Analysis Approach

- Before and After Analysis
- Control and Treatment Method
- Trend Analysis of System Performance
- Behavioral Analysis
- Financial Modeling

Data Collection, Sharing and Reporting Plan

Santosh Mishra, System Development Lead

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High-Level System Diagram and Data Flow
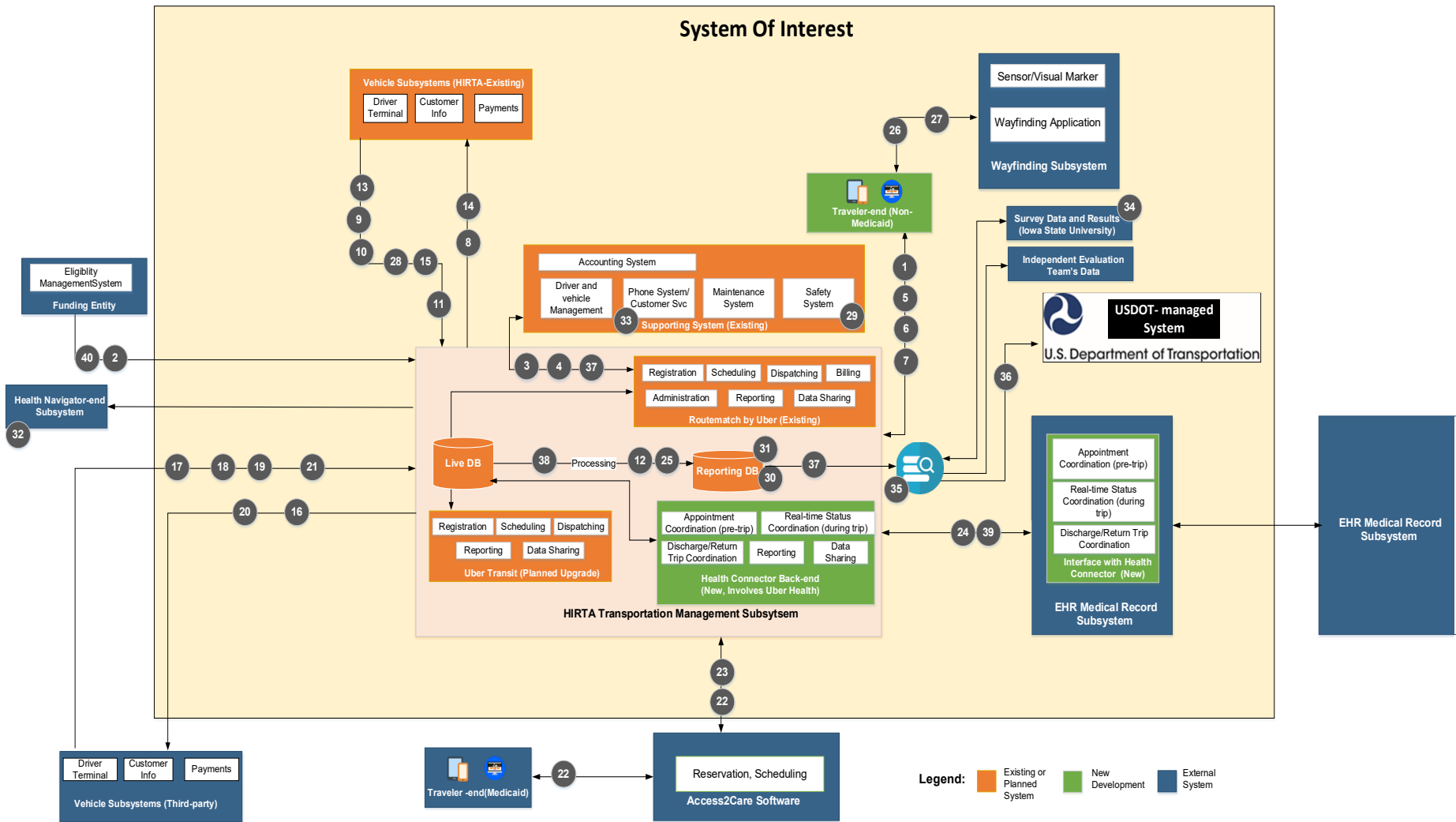
Datasets

- Admin
- Driver
- Trip
- Aggregated
- Health/Medical Appointment
- Survey
- System Log
- Wayfinding

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Data Collection Approach

- Baseline: Before/Pre-Deployment Data
- Deployment Data
  - During Deployment
    - Through Surveys
    - Through In-person Interviews
- Financial Data

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Data Verification and Processing

- **Quality Check**
  - ☐ Missing Data
  - ☐ Insufficient Data
  - ☐ Invalid Data
  - ☐ Outlier
  - ☐ Exposure to PII
- **Processing**
  - ☐ Filtering
  - ☐ Correlation
  - ☐ Anonymization
  - ☐ Aggregation

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Next Steps

Santosh Mishra, System Development Lead

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Next Steps

- Coordination with Institutional Review Board (IRB) and Human Use Approval
- Finalization of Survey Approach
- Finalization of Performance Measurement Plan
- Finalization of Data Management Plan
- Support for Independent Evaluation
- Development of Deployment Plan

Stakeholder Q&A

- Please keep your phone muted

- Please use chat box to ask questions

- Questions will be answered in the order in which they were received

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Stay Connected

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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

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