CONNECTED VEHICLE PILOT Deployment Program

Performance Measurement and Evaluation Support Plan
Tampa
Tampa Hillsborough Expressway Authority

Govind Vadakpat, Tampa (THEA) Site COR
Bob Frey – Tampa Hillsborough Expressway Authority

ITS Joint Program Office
TODAY’S AGENDA

- **Purpose of this Webinar**
  - To share the Performance Measurement and Evaluation Support plan from the Tampa (THEA) with the stakeholders of connected vehicle technologies.

- **Webinar Content**
  - Connected Vehicle Pilot Deployment Program Overview
  - Tampa (THEA) Performance Measurement and Evaluation Support Plan
  - Stakeholder Q&A
  - How to Stay Connected

- **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 CV Pilots website
CONNECTIONED VEHICLE PILOT DEPLOYMENT PROGRAM

PROGRAM GOALS

- Participate in Concept Development Phase Webinars for the three Pilot Sites (see website for exact dates and times)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>✭✭✭</td>
<td>✭✭✭</td>
<td>✭✭✭✭✭✭</td>
<td>✭✭✭✭✭✭</td>
<td>✭✭✭♣♣♣</td>
<td>✭✭✭♣♣♣</td>
<td>✭✭✭♣♣♣</td>
</tr>
</tbody>
</table>

- Visit Program Website for Updates: http://www.its.dot.gov/pilots
- Contact: Kate Hartman, Program Manager, Kate.hartman@dot.gov

PILOT SITES

- ICF/Wyoming DOT
- NYCDOT
- Tampa (THEA)
Tampa (THEA) CV Pilot System Overview

Bob Frey - THEA
Stephen Reich
Center for Urban Transportation Research
University of South Florida
Operational Issues

- REL terminates in Downtown Tampa – Feeding urban arterials
- Morning peaks result in queuing on the REL on a curve
- Rear end collisions
- Wrong way entrances to the REL
- Heavy pedestrian traffic – particularly at the federal courthouse
- Traffic delays effect transit schedule – downtown transit mall
- Historic trolley operates in the area – auto/pedestrian/trolley conflicts
- REL commuters destined to and from MacDill must negotiate surface street system
Operational Improvements

- Ideally, in the CV Deployment area operations would be enhanced by:
  - More efficient flow of traffic exiting the REL into the surface street system
  - Alerting REL drivers to upstream traffic stoppages
  - Safer conditions near the terminus of the REL during A.M. peaks
  - Reducing pedestrian/vehicles at the mid-block courthouse crossing
  - More efficient management of intersections to improve transit travel reliability and general traffic
  - Reducing conflicts with the trolley and pedestrians and vehicles
  - Effectively alerting drivers to a potential wrong way entry to the REL and alerting motorists on the REL of a wrong way vehicle approaching
  - Improving throughput on the system, particularly for commuters traversing downtown
Tampa CV Pilot Goals and Objectives

Stephen Reich
Center for Urban Transportation Research
University of South Florida
Tampa CV Pilot Goals

- Develop and Deploy CV Infrastructure Identified in Phase I
- Improve Mobility in the CBD
- Reduce the Number of Safety Incidents within the Pilot Area
- Reduce Environmental Impacts within the Pilot Area
- Improve Agency Efficiency
- Develop Business Environment for Sustainability
<table>
<thead>
<tr>
<th>Goal</th>
<th>Objectives</th>
<th>Use Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal 1: Develop and Deploy CV Infrastructure to Support Applications Identified in Phase 1</td>
<td>1: Deploy Dedicated Short-Range Communication (DSCR) technologies to support V2V, V2I, and V2X applications 2: Upgrade TMC software to ensure compatibility with CV applications 3: Recruit a fleet of transit and private vehicle owners to participate in the CV Pilot by installing and using CV technology offered in the pilot</td>
<td>All Use Cases</td>
</tr>
<tr>
<td>Goal 2: Improve Mobility in CBD</td>
<td>1: Replace existing traffic controllers and control systems at key intersections with I-SIG CV technology to improve traffic progression 2: Help HART buses stay on predictable schedule through TSP applications 3: Improve BRT operation and encourage ridership</td>
<td>Use Case 1, Use Case 2, Use Case 3, Use Case 4, Use Case 5</td>
</tr>
<tr>
<td>Goal 3: Reduce Number of Safety Incidents within the Pilot Area</td>
<td>1: Detect pedestrians and provide warnings to drivers of potential pedestrian conflicts 2: Detect potential vehicle conflicts and provide warnings to pedestrians 3: Provide early detection of wrong way drivers and issue warnings to wrong-way drivers and upstream motorists 4: Warn drivers of REL exit curve speed and stopped vehicles ahead 5: Detect and warn of potential conflicts between trolleys, vehicles, and pedestrians</td>
<td>Use Case 1, Use Case 2, Use Case 3, Use Case 5, Use Case 6</td>
</tr>
</tbody>
</table>
## Goals, Objectives and Use Cases

<table>
<thead>
<tr>
<th>Goal</th>
<th>Objectives</th>
<th>Use Case</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goal 4: Reduce Environmental Impacts within the Pilot Area</strong></td>
<td>1: Deploy applications to improve overall mobility and reduce stops and idle time within the CBD, thus reducing emissions 2: Provide TSP applications to reduce HART buses idle time 3: Provide BRT applications to improve overall operation and encourage increased ridership</td>
<td>Use Case 1  Use Case 2  Use Case 3  Use Case 4  Use Case 6</td>
</tr>
<tr>
<td><strong>Goal 5: Improve Agency Efficiency</strong></td>
<td>1: Improve data collection capability, reducing the costs of collecting data 2: Reduce the number of incidents and police and rescue responses to incidents 3: Reduce crashes and time agencies take to gather data 4: Improve technology for crash statistics gathering 5: Improve scheduling and dispatching of HART vehicles with improved trip times and vehicle information 6: Reduce THEA’s overhead in responding to wrong-way entries and crashes on REL exit ramp</td>
<td>To be determined</td>
</tr>
<tr>
<td><strong>Goal 6: Develop Business Environment for Sustainability</strong></td>
<td>1: Work with CAMP, OEMs, and developers to communicate benefits 2: Work with industry sectors to educate and to seek support 3: Work with business organizations to educate members on the return on investment from increased mobility 4: Work with state and local government to encourage positive legislation and funding in support of CV technology</td>
<td>To be addressed in Task 10</td>
</tr>
</tbody>
</table>
1 Morning Backups And Congestion

Target Area
Intersection of Twiggs Street and Meridian Avenue at Reversible Express Lanes Entrance/Exit

Avoid Crashes due to Back-to-back Right Turns

V2V Safety: FCW and EEBL

Reduce Queue Backup on Curve

Curve Speed Warning (CSW)

Improve Signal Timing Progression

Intelligent Traffic Signal System (I-SIG)

Performance Measures/ Data
- Mobility
  - Travel time
  - Travel time reliability
  - Queue length
  - Vehicle delay
  - Throughput
  - % Arrival on green

Safety
- Crash reduction
- Crash rate
- Types of conflicts/near misses
- Severity of conflicts/near misses
- % Red light violation/running
- Approaching vehicle speed

Environmental
- Emissions reductions in idle
- Emission reductions in running
2 Wrong-Way Incidents

Target Area
Entry/Exit Points Along Selmon and Reversible Express Lanes (REL)

Improve Safety at the Entry/Exit Point

Effectively Control Reversible Express Lane

Signal Control at Express Lane Entries

Performance Measures/Data
- Mobility
  - Travel time
  - Vehicle delay
- Safety:
  - Crash reduction
  - Cash rate
  - Types of conflicts/near misses
  - Number of wrong way entries and frequency
- Environment:
  - Emissions reductions in idle
  - Emissions reductions in running
  - Excess time spent in idle

Intersection Movement Assist (IMA)
Red Light Violation
Probe Enabled Traffic Monitoring
Intelligent Traffic Signal System (I-SIG)
3 Pedestrian Safety

Target Area
Midblock of Twiggs Street at Hillsborough County Courthouse

Performance Measures/Data
- Mobility
  - Travel time
  - Travel time reliability
  - Queue length
  - Vehicle delay
  - Throughput
- Safety
  - Crash reduction
  - Crash rate
  - Types of conflicts/near misses
  - Severity of conflicts/near misses
  - Approaching vehicle speed
- Environmental
  - Emissions reductions in idle
  - Emissions reductions in running

Improve Pedestrian Safety at Unmarked Crossing Locations
Pedestrian in Signalized Crosswalk Warning
Provide Pedestrian Crossing Signal Timing
Mobile Accessible Pedestrian Signal (PED I-SIG) and I-SIG
4 Transit Signal Priority, Optimization And Safety

Target Area
Express Route through Downtown City Streets to Marion Street Transit Station

Performance Measures/ Data
- Mobility
  - % Arrival on green
  - Bus travel time
  - Bus route travel time reliability
  - % Arrival on schedule
  - Signal priority – # times requested and granted; requested and denied; requested, granted and denied
- Safety
  - % Red light violation/running
- Environmental
  - Emissions reductions in idle
  - Emissions reductions in running

Intelligent Traffic Signal System (I-SIG)
Transit Signal Priority (TSP)
5 TECO Line Streetcar Conflicts

Target Area
- Adamo Drive (SR 60)/Channelside Drive
- Amalie Arena/Channelside Drive Area

Avoid Potential Vehicle Conflicts

Vehicle Turning Right in Front of Bus Warning

Improve Signal Timing for Special Events

Intelligent Traffic Signal System (I-SIG)

Performance Measures/Data
- Safety
  - Crash reductions
  - Crash rate
  - Types of conflicts/near misses
  - Severity of conflicts/near misses
6 Enhanced Signal Coordination and Traffic Progression

Target Area
- Along Twiggs Street from Selmon to Marion Street
- Along Meridian Avenue from REL to Channelside Drive

Effectively Monitor Peak Queuing and Congestion

Improve Traffic Progression

Performance Measures/ Data

- Mobility
  - Travel time
  - Travel time reliability
  - Queue length
  - Vehicle delay
  - Throughput
  - % Arrival on green

- Safety
  - Crash reduction
  - Crash rate
  - Types of conflicts/near misses
  - Severity of conflicts/near misses
  - % Red light violation/running
  - Approaching vehicle speed

Environmental:
- Emissions reductions in idle
- Emissions reductions in running

Probe Enabled Traffic Monitoring

Intelligent Traffic Signal System (I-SIG)
Tampa CV Pilot Performance Measures

Achilleas Kourtellis and Seckin Ozkul
Center for Urban Transportation Research
University of South Florida
## Performance Measures by Use Case

<table>
<thead>
<tr>
<th>Performance Pillars</th>
<th>Performance Measures</th>
<th>UC1 Morning Peak Hour Queues</th>
<th>UC2 Wrong Way Entries</th>
<th>UC3 Pedestrian Safety</th>
<th>UC4 Bus Rapid Transit Signal Priority Optimization, Trip Times and Safety</th>
<th>UC5 TECO Line Streetcar Trolley Conflicts</th>
<th>UC6 Enhanced Signal Coordination and Traffic Progression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobility</td>
<td>Travel time</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Mobility</td>
<td>Travel time reliability</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Mobility</td>
<td>Queue length</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Mobility</td>
<td>Vehicle delay</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Mobility</td>
<td>Throughput</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Mobility</td>
<td>Percent (%) arrival on green</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Mobility</td>
<td>Bus travel time</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Mobility</td>
<td>Bus route travel time reliability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Mobility</td>
<td>Percent (%) arrival on schedule</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Mobility</td>
<td>Signal priority:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Mobility</td>
<td>- Number of times priority is requested and granted</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Mobility</td>
<td>- Number of times priority is requested and denied</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Mobility</td>
<td>- Number of times priority is requested, granted and then denied due to a higher priority (i.e. EMS vehicle)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Environmental</td>
<td>Emissions reductions in idle</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Environmental</td>
<td>Emissions reductions in running</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Environmental</td>
<td>Excess time spent in idle</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>
## Performance Measures by Use Case

<table>
<thead>
<tr>
<th>Performance Pillars</th>
<th>Performance Measures</th>
<th>UC1 Morning Peak Hour Queues</th>
<th>UC2 Wrong Way Entries</th>
<th>UC3 Pedestrian Safety</th>
<th>UC4 Bus Rapid Transit Signal Priority Optimization, Trip Times and Safety</th>
<th>UC5 TECO Line Streetcar Trolley Conflicts</th>
<th>UC6 Enhanced Signal Coordination and Traffic Progression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety</td>
<td>Crash reduction</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Crash rate</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Type of conflicts / near misses</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Severity of conflicts / near misses</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Percent (%) red light violation/running</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Approaching vehicle speed</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Number of wrong way entries and frequency</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agency Efficiency</td>
<td>Mobility improvements through the mobility pillar analysis</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Safety improvements through the safety pillar analysis</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>Customer satisfaction through opinion survey and/or CV app feedback</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
Tampa CV Pilot Confounding Factors

Sisinnio Concas
Center for Urban Transportation Research
University of South Florida
Confounding Factors

- Study Area-Specific Factors
  - Weather
  - Special Events
  - New Massive Downtown Waterfront Deployment Construction

- Deployment –Specific Factors
  - Failure, Anomaly and Exception Conditions
  - Maintenance
  - Concurrent Use of Applications

- Experimental Design-Induced Factors
  - Participant Self-Selection
  - Participant Attrition
  - Participant Moral Hazard
Tampa CV Pilot Impact Evaluation Design

Sisinnio Concias
Center for Urban Transportation Research
University of South Florida
Experimental Strategies

- Random Design
- Quasi-Experimental Design
- Before and After Comparison
Random Design

- Study participants randomly selected and randomly assigned to treatment and control group
  - Treatment consists of participants assigned to the intervention (CV applications installed and equipment activated to send out warnings)
  - Control consists of participants excluded from intervention (CV applications installed and equipment not sending out warnings)
- Random assignment ensures similarity between groups and equal probability of treatment
- Objective: Measure the change in average outcomes (i.e., performance measures) between treatment and control
  \[
  ATE = (T_1^A - T_0^N) - (C^A - C^N)
  \]
where \( T_1^A \) is treatment at CV technology activation (A); \( T_0 \) is treatment at normal conditions; \( C^A \) is control at CV activation; \( C^N \) is control at normal conditions. In the ConOps, normal conditions (N) are those conditions characterized by a “no problem” or “no issue” perspective without any initiation of the proposed CV technologies, which is as the system operates today. Activation conditions (A), are those “conditions that activate or trigger the CV application.”
Quasi-Experimental Design

- Adopted whenever fully random assignment cannot be achieved
- Intended to reduce bias from non-randomness of treatment and control
- Bias can be reduced by using matching methods to select matching controls
- Solution: use of propensity-score matching with multiple matching algorithms

1. Estimate propensity score for treatment and control (logistic regression using explanatory variables to control for participant heterogeneity)
2. Use of estimated score and matching algorithms to match treatment to controls
3. Identify matched control by ranking frequency of matching
Before and After Comparison

- To be used in the absence of participant recruitment or when random and quasi-experimental approaches are not feasible

- Can be used given the longitudinal nature of the study (Phase III lasting 18 months)

- Based on statistical methods comparing changes in performance measures before CV implementation to after CV implementation

- Empirical methods will include:
  - Interrupted time series analysis
  - Multi-level modeling
## Summary of Recommended Approaches

<table>
<thead>
<tr>
<th>Experimental Design</th>
<th>UC1 Morning Peak Hour Queues</th>
<th>UC2 Wrong Way Entries</th>
<th>UC3 Pedestrian Conflicts at Courthouse</th>
<th>UC4 Bus Rapid Transit Signal Priority Optimization Trip Times and Safety</th>
<th>UC5 TECO Line Streetcar Trolley Conflicts</th>
<th>UC6 Enhanced Signal Coordination and Traffic Progression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interrupted time series</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Quasi-Experiment</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Random Design</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Participant Recruitment</td>
<td>YES</td>
<td>Partially from UC1/UC4</td>
<td>YES, courthouse employees; jurors could adopt apps</td>
<td>NO</td>
<td>Only App adopters</td>
<td>YES, from UC1</td>
</tr>
</tbody>
</table>
Tampa CV Pilot Data Collection Plan

Sudeeksha Murari

Booz, Allen, Hamilton
Data Quality Checking and Cleaning

- Data quality checking and cleaning
  - A generalized set of **basic quality checks** (completeness, validity, timestamps etc.)
  - Common **error checks** (missing values, unrealistic values, issues with file formats etc.)
  - The rigor of the data checking for **format and structure** is dependent on the requirements of the end users, which are the RDE, STOL, Independent Evaluator, THEA, and the CV applications that are deployed in Tampa

- PII Removal by categories of datasets collected

<table>
<thead>
<tr>
<th>File to be Cleansed</th>
<th>Step</th>
<th>Short description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trajectory Based - Host Vehicle files</td>
<td>Test Bed Cordon Truncation</td>
<td>Limit data analysis to geographic confines surrounding the test bed area</td>
</tr>
<tr>
<td>(BSM data)</td>
<td>Distance based Trip Truncation</td>
<td>Protect (S) PII by establishing a distance based buffer zone around each trip’s origin and destination</td>
</tr>
<tr>
<td></td>
<td>Temporal Trip Truncation</td>
<td>Protect against the discovery of (S)PII for vehicles when the distance truncation step did not sufficiently obscure a trip’s O/D</td>
</tr>
<tr>
<td></td>
<td>Adjustments of Sequential Data Element</td>
<td>Prevent the extrapolation of location data, with the aid of additional data elements such as speed</td>
</tr>
<tr>
<td>Event Based - Host Vehicle files</td>
<td>Truncation of event based – host vehicle files</td>
<td>Control the possibility of having data elements contain relevant information that may be used to deduce (S)PII</td>
</tr>
<tr>
<td>Trajectory Based - Remote Vehicle files</td>
<td>Truncation of trajectory based – Remote vehicle files</td>
<td>Guard against the deduction of the start and end of a host vehicle’s trip, from a remote vehicle’s location data (upon knowing range of DSRC)</td>
</tr>
<tr>
<td>Trip Summary Files</td>
<td>Adjustment of Trip Summaries</td>
<td>Allow the summary of each trip to reflect the “new” reality of each truncated host vehicle trip</td>
</tr>
</tbody>
</table>
Data Integration, Aggregation and Archiving

- **Data Integration** can be carried out using data from multiple sources in real-time in the ODE. This is mostly used while providing data from the ODE to the subscribing CV applications.

- **Data Aggregation**: The aggregation step creates composite/summary information using granular data sources.

- **Data archiving**: The data needs to be structured for the RDE, STOL and THEA (and for the IE).
  1. Generate a comprehensive metadata document describing all data elements being collected, their connections to their larger data sets, and a description of how they are stored and captured.
  2. Organize the data using the data hierarchy structure that is currently used within the RDE.

**Data Environment** – a logical collection or grouping of data sets

**Data Set** – contains a certain type of data, such as highway detector data or, traffic signal timing data, or weather data.

**Data File** – an archived collection of data that can be CSV, text, binary, or other file types, which might be zipped/compressed.
CV Pilot Performance Reporting and Data Sharing

Sisinnio Concasa
Center for Urban Transportation Research
University of South Florida
Performance Reporting

Performance Measurement Reporting

- **Performance tracking** will not be static in terms of just providing a snapshot of conditions, but will allow mechanisms to measure and contextualize progress towards established targets.

- **A dashboard** will be created for sharing the performance data.

- Information to the dashboard will be provided on a daily basis. Users will be able to access information displayed by frequency (daily, weekday, monthly basis).

- **Reporting frequency** to the Independent Evaluator and STOL will be daily, weekly, monthly, or by custom-set date range.
Tampa CV Pilot Next Steps

Stephen Reich
Center for Urban Transportation Research
University of South Florida
Next Steps

▪ Coordinate with Task 6 Lead – System Requirements

▪ Support Task 8 – Human Use Approval

▪ Assist in the Finalization of the Comprehensive Deployment Plan – Task 12

▪ Phase II
  ▪ Collection of Data on Current Conditions
  ▪ Refresh Inventory of Evaluation Best Practices
STAKEHOLDER Q&A

- Please keep your phone muted

- Please use chatbox to ask questions

- Questions will be answered in the order in which they were received
Contact for CV Pilots Program:
Kate Hartman, Program Manager
Kate.Hartman@dot.gov

Join us for the *Getting Ready for Deployment* Series
- Discover more about the CV Pilot Sites
- Learn the Essential Steps to CV Deployment
- Engage in Technical Discussion

Website: [http://www.its.dot.gov/pilots](http://www.its.dot.gov/pilots)
Twitter: [@ITSJPODirector](https://twitter.com/ITSJPODirector)
Facebook: [https://www.facebook.com/USDOTResearch](https://www.facebook.com/USDOTResearch)

CV Pilot Sites’ Performance Measurement Webinars

- **6/6/2016, 2:00 pm – 3:00 pm ET**
  *ICF/WYDOT Performance Measurement Webinar*

- **6/6/2016, 3:30 - 4:30 pm ET**
  *NYCDOT Performance Measurement Webinar*

- **6/7/2016, 12:00 pm – 1:00 pm ET**
  *Tampa (THEA) Performance Measurement Webinar*

Please visit the CV pilots website for the recording and the briefing material of the previous webinars.