



AASHTO Near Term V2I Transition and Phasing Analysis

**Connected Vehicle Pooled Fund Study and
AASHTO Connected Vehicle Working Group Meetings**

December 2014

Agenda

- ▶ Overview and Scope of Project
- ▶ Stakeholder Engagement
- ▶ Current Status
- ▶ Related Projects
 - Connected Vehicle Training and Education Implementation Plan (2015-2019)
 - V2I Systems Engineering Guidance

Project Scope

- ▶ Provide analysis of key V2I topics to facilitate planning and inform investment decisions by state and local agencies
- ▶ Provide an understanding of the initial, near-term (0-5 years) V2I investments or decisions that state and local agencies can make to facilitate a transition into connected vehicle operations, which will:
 - Inform USDOT's vision of how state and local deployments can result in a national connected vehicle footprint
 - Support the development of FHWA Connected Vehicle Guidance
- ▶ Develop scenarios and tools that will guide implementers in transitioning their existing systems to connected vehicle environments

Stakeholder Engagement

- ▶ Engage with stakeholders to understand requirements, plans, concerns, and how they believe the connected vehicle systems will fit into their current operations
 - State, regional, and local agencies
 - Independent infrastructure manufacturers and operators
 - OEM manufacturers

- ▶ Use input from webinars, questionnaires, and interviews with various stakeholder groups to inform development of:
 - Application Prioritization Tool – Will help deployers in making decisions about which applications are of greatest priority to their contexts/environments
 - Infrastructure Phasing Tool – Will help deployers walk through their planning and budgeting processes to integrate V2I applications and investments
 - Benefit Cost Lifecycle Model – Will provide sets of variables and scenarios so that deployers can model their costs and benefits with V2I Infrastructure considerations
 - Scenarios – An expanded description of contexts and scenarios to describe various V2I environments

Current Status

- ▶ Developing Applications Prioritization Tool
 - Criteria for consideration of applications and deployment
 - Sets of applications based on contexts and needs
 - Decision making support tool
- ▶ Conducting Stakeholder Outreach
 - Webinars for various audiences week of December 15
 - Follow up questions and surveys as needed
 - Individual discussions with members of the community
- ▶ Beginning development of Infrastructure Phasing Tool

Contact Information

Chris Hill

hill_christopher@bah.com

Andrea Kiernan

kiernan_andrea@bah.com

Dominie Garcia

garcia_dominie@bah.com



Connected Vehicle Training and Education Implementation Plan (2015-2019)

Project Introduction and Overview for CV Meeting

December 2014

Executive Summary

- ▶ **Client:** Federal Highway Administration, ITS JPO
 - Task Manager: Mac Lister, Program Manager Knowledge and Technology Transfer
- ▶ **Purpose:** to develop a training and capacity building framework for Connected Vehicle professionals, including current and future transportation operations technicians, engineers, and managers.
- ▶ **Schedule:** The project started in September 2014 and we expect to deliver the CV Training and Education Plan in the summer of 2015
- ▶ **Project Deliverables:**
 - Gap Analysis of available training and training required for successful implementation of the Connected Vehicle Program
 - Searchable Database of existing CV Training offerings
 - Connected Vehicles Training and Education Implementation Plan (2015 – 2019)

Data Gathering and Stakeholder Interviews

- ▶ Data on training needs/experiences are being gathered from three primary audiences
 - **“Funding Sponsors”** - *Primary funding sponsors of CV technical research and training (e.g., Intelligent Transportation Systems Joint Program Office (ITS JPO) and other USDOT offices).*
 - **“Current and Potential CV Training Providers”** - *Organizations developing and delivering connected vehicle training.*
 - **“CV Training Consumers”** - *Individuals or organizations that need to be prepared to execute decisions and actions that will advance connected vehicle implementation.*

- ▶ We would like to learn more about your CV deployment experiences and any training or professional development needs you may have identified during the deployment process. We hope you are willing to participate in a focus group in early January.

- ▶ Focus group participation offers you and your organization an opportunity to shape the future of Connected Vehicle training and educational programs and may offer additional insight into the top deployment challenges faced by fellow implementers.

Summary of Assistance Needed

- ▶ Participate in upcoming focus groups
- ▶ Nominate others for focus group participation
- ▶ Share identified CV training and education needs via email to Lewis_Jocelyn@bah.com

CV V2I Systems Engineering Guidance

AASHTO Meeting Update

November 25, 2014

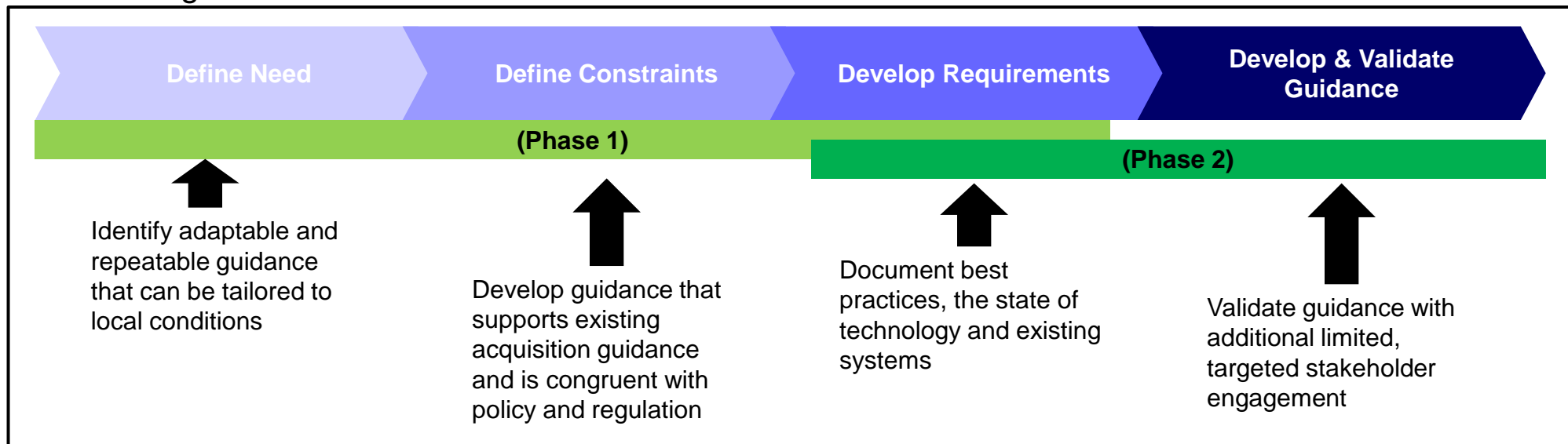
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Background

- ▶ While the NHTSA rulemaking will NOT require State and local DOTs to deploy vehicle to infrastructure (V2I) technology, guidance and products/tools are being developed by FHWA as useful resources to help those considering V2I deployment and to leverage developments via V2V communications
- ▶ The guidance is intended to provide a number of best practices, cost analysis tools, and technology documents with a focus on V2I interoperability and effective planning/procurement/operations of the system
- ▶ The V2I systems engineering (SE) guidance will augment the SE for Intelligent Transportation Systems manual and discuss the evaluation, selection and implementation of V2I technology

Project Overview

- ▶ The objective of this project is to “develop an interim vehicle to infrastructure (V2I) systems engineering (SE) guidance based on the technical and institutional assessment of prior and ongoing research and development activities as well as the capacity of potential early adopters at the state and local government levels”
- ▶ This work is performed in the following two major phases:
 - 1) Analyze the deployment readiness by state and local transportation agencies
 - 2) Develop Systems Engineering guidance to V2I deployment by state and local transportation agencies



Stakeholder Engagement

- ▶ In order to develop effective CV V2I guidance, the FHWA Office of Operations is soliciting input from state and local agencies with varying interest and experience with V2I deployments.
- ▶ The objectives of the stakeholder engagement outreach are to:
 - Identify the needs and challenges faced by state and local transportation agencies as they pursue V2I deployment;
 - Identify state and local agencies' needs for systems engineering guidance to support implementation; and
 - Identify existing tools and guidance in use by state and local agencies in the deployment of V2I solutions.

Stakeholder Engagement Opportunities

- ▶ Questionnaire sent to stakeholders on 11/17
 - Responses requested by 12/01
- ▶ Upcoming in-depth stakeholder engagement follow-ups
 - Site visits
 - Engagement webinar(s)

Contact Information

Christopher Karaffa

karaffa_christopher@bah.com

703-377-4844

Gustave Cordahi

cordahi_gustave@bah.com

301-917-5521