Moving From Research to Implementation
AASHTO Perspective

AASHTO Deployment Coalition
September 26th, 2012
American Association of State Highway and Transportation Officials
Agenda

- State Pooled Fund Implementation Activities
- AASHTO Outreach Activities
- National Connected Vehicle Field Infrastructure Analysis
- Summary
Pooled Fund

• Partnership with FHWA and the DMA program
  o Multi-Modal Intelligent Traffic Signal System
    o Intelligent Traffic Signal System
    o Transit Signal Priority
    o Mobile Accessible Pedestrian Signal System
    o Emergency Vehicle Preemption
    o Freight Signal Priority
  o Arizona and California Sites
NCHRP 03-101

- Costs and benefits of Connected Vehicle infrastructure deployment by state and local agencies
- Emphasis on direct benefits (cost savings) to agencies, rather than broader societal benefits
- Focus on case study-based analyses in several representative states
  - Virginia case study underway
- Results due early 2013
  - Initial findings presented at Nov 19th ELT Meeting
- DSRC State Guidance
  - Provide state of readiness and licensing strategies
Outreach Activities

• Administration Committee
  ▪ NHTSA legal & State legal

• Traffic Engineering Committee Taskforce
  ▪ Establish awareness of the C.V. world
  ▪ Resolution to support implementation

• Communications Committee
  ▪ State DOT communications directors
  ▪ Establish awareness
  ▪ Solicit their resources to spread the word

• Operations Committee (SSOM)
  ▪ Connected Vehicle an emphasis area
  ▪ Colorado DOT Director spearheading

• ITS World Congress
  ▪ 7 state DOT directors; President, Vice President, past presidents, large states CA, FL, MI
Where is AASHTO today?

• Our future vehicle world – we can begin to see it now; consequently we:
  ▪ Need clarification of the opportunities and obligations there are for the states
  ▪ Need to start engaging more of the state and local agency decision makers in a deployment discussion.
National Connected Vehicle Field Infrastructure Footprint Analysis

• Preliminary concept for field infrastructure deployed by state & local agencies
  ▪ Could be used by private consortia to design, build, operate, finance

• Compelling justification of agency value

• Provide tools for engaging state agencies

• Bring into focus applications that are of the greatest value to agencies
National Connected Vehicle Field Infrastructure Footprint Analysis

• Set of design concepts with high-level engineering detail
• Define set of deployment scenarios and
  ▪ How, where and when they can be deployed..
  ▪ How they might be paid for..
  ▪ Extrapolated to a national footprint…
  ▪ Phased deployment plan…
  ▪ Define national support needed…
Task 3 - Technical Memo for State and Local Participants

• Level of understanding varies dramatically across the nation’s state and local DOTs; consequently, we want to send them an alert:
  ▪ Why infrastructure deployment is beneficial
  ▪ What will deployment look like and when does it need to accomplished
  ▪ A successful transportation future will require a commitment to deployment
  ▪ Describe the concept in compelling terms and what they should be doing to prepare
Task 4 - Applications Analysis

- Effective deployment plan relies on understanding capital, operations, maintenance needs for each application or bundle (i.e. safety/mobility)
- Applications have different set of requirements for processing, data, communications, security, power and installation requirements
- The data needs of each application will be described and gaps addressed
- Table prepared with applications inventory, data requirements, communication options and infrastructure needs → Task 5
Task 5 - Design Concepts and Security & Architecture Gaps

- Use Task 4 output to create real-world design concepts with high-level engineering detail
- Location types – urban, rural, speed zones, intermodal, border crossings, more.....
- Readiness tiers – technical vs. institutional
Task 6 - Preliminary National Infrastructure Footprint and Phased Deployment Plan

- One of the most significant challenges is lack of a clear description and extent of field infrastructure - impediment to action
- Development of set of deployment scenarios
  - Design concepts
  - Funding strategies
  - Challenges
  - Timeline
Task 6 contd.

• Development of *preliminary footprint*
  - Work with states within AASHTO Deployment Coalition ~ case study approach
  - Develop extrapolation process to reach a national footprint

• Development *coordinated phase deployment plan*
  - Establish approach for nationwide roll-out
  - Processes, stakeholders, policies, institutional issues
Task 6 contd.

• Develop estimates of *capital investment requirements and ongoing operational costs*
  ▪ Design
  ▪ Procurements
  ▪ Communications and backhaul
  ▪ Installation
  ▪ Operations and maintenance
  ▪ Staff development
Task 7 – Final Report

• Final report incorporating the findings from Task 3 – 6 and presenting a *national connected vehicle field infrastructure footprint and coordinated phased deployment plan*
The Team

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Schedule

- Task 3 delivery - 80 days after Notice to Proceed (NTP)
- Task 4 delivery – input into Task 5
- Task 5 delivery – draft 120 days after NTP
- Task 6 delivery – draft 190 days after NTP
- Task 7 delivery – draft final report 330 days after NTP
Summary

• AASHTO working to keep pace with NHTSA Decision!
• Nov 19th ELT Meeting at AASHTO’s Annual meeting
  ▪ NCHRP 03-101
  ▪ Infrastructure Analysis outline
  ▪ Others from USDOT, VIIC
• Continued outreach with AASHTO Committees
• National Infrastructure Analysis
• Sense we are at a tipping point!