Caltrans Connected and Automated Vehicle (CAV) Strategic Plan Workshop

Ben McKeever, P.E.

University of California PATH Program

Project Update – July 25, 2020

CALIFORNIA
PATH

Tips for Zoom Meetings

- If you have issues with your PC audio, please <u>use the telephone option</u>
- <u>Please turn off video and self-mute</u> until we enter Breakout Rooms
- <u>Open the Zoom tool bar</u> **(mouse over the bottom of your Zoom screen)** to:
  - Self-mute/unmute your line;
  - Switch your audio between PC and telephone;
  - Enable/disable webcam feature;
  - See a list of participants;
  - Raise your hand and vote yes/no; or
  - Send a question or message to the chat box.
- Each presentation will be followed by an opportunity for discussion. Use <u>the raise hand</u> function to show that you wish to speak.
- Each speaker will be called on in turn, and their line will be unmuted by the organizer. You must <u>ensure your line is not self-muted</u>.
- Please <u>self-mute your line</u> after you speak.
- Ask questions anytime using chat box - we will address as many as we can
- Breakout Rooms will be controlled by the organizer. You will receive messages to enter and leave the breakout rooms at appropriate times

CALIFORNIA
PATH

Project Goal

- **Develop a CAV Strategic Plan for Caltrans**
    - Define a vision and strategy for Caltrans leadership in preparation for CAV deployment
    - Initiate a CAV policy development process
    - Develop CAV action plan that defines specific activities for Caltrans to undertake in the coming years
    - Keep California at the forefront of this emerging industry

Project Team

- **California PATH**
  - Principal Investigator: Ben McKeever, P.E.
  - Strategic Advisor: Tom West
  - Research Engineer: Peggy Wang, PhD
- **CAVita, LLC**
  - Peter Sweatman, PhD
  - Barry Einsig

Project Tasks and Schedule

Task	Tasks	2019		2020			Deliverables
		Q3	Q4	Q1	Q2	Q3	
1	**Project Management**						
		◊					kick off meeting
			◊	◊	◊	◊	quarterly progress reports
2	**Summarize the State of CAV**						
			◊				Task 2 Tech Memo
3	**Define How CAV Impacts Caltrans Business Processes**						
					◊		Task 3 Tech Memo
4	**Stakeholder Outreach**						
						◊	Workshop #1
5	**Develop CAV Strategic Plan**						
						◊	CAV Strategic Plan

Role of Project Panel

- Provide strategic direction for the project
- Participate in project milestone meetings and stakeholder meetings
- Review project deliverables and provide feedback
- Help the PATH team get input from the appropriate staff at Caltrans (e.g. staff interviews)

Task 1: Project Management

- **Tracking schedule and budget, providing project updates, facilitating meetings, managing subs, etc.**

- **Deliverables**
  - **Kick-off meeting**
  - **Quarterly Progress Reports**
  - **PM Coordination Calls**

Task 2: Summarize the State of CAV

- **Summarize CAV activities in CA and the rest of the US**
  - include public and private sectors
  - cover CAV technologies, policies and remaining challenges
- **Deliverables**
  - Technical Memo describing state of CAV was delivered January 2020

Task 3: Define how CAV impacts Caltrans Business Processes

- **Interview key staff in select Caltrans business units and discuss how CAV is being (or will be) incorporated in them**

- **Deliverables**

  - **Technical Memo describing how CAV impacts Caltrans was delivered May 2020**

  - **Includes draft CAV Action Plan**

Task 4: Stakeholder Outreach

- **Conduct a stakeholder workshop to gather input from Caltrans staff and other state agencies on CAV readiness and desired CAV actions**

- **Deliverables**

    – **Workshop: summary of findings from task 3 and review of Caltrans CAV Action Plan**

Task 5: Develop Caltrans CAV Strategic Plan

- **Summarize findings from tasks 2-4 and synthesize the results in a Strategic Plan.**

- **Include a CAV Action Plan with recommended near and mid-term activities.**

- **Deliverables**

  – **Draft Caltrans CAV Strategic Plan**

  – **Final Caltrans CAV Strategic Plan**

Summary of Staff Interviews

- **Leveraged members of CAV Strategic Plan Project Panel to schedule meetings (some in-person, some via Zoom)**

- **Conducted 17 interviews with over 50 staff members from CalSTA, DMV and the following Caltrans Divisions:**

  - **DRISI, Operations, Maintenance, Equipment, Design, Construction, Administration, Planning, Risk and Strategic Management, IT, and Legal**

  - **Districts 4 and 11**

Summary of Staff Interviews

Interviews focused on 8 CAV Planning Themes:

1. **Significance of CAV**
2. **Broadening the Caltrans CAV knowledge base**
3. **Current opportunities for direct CAV engagement**
4. **CAV research strategies and test bed engagement**
5. **Preparation for AV deployment in California**
6. **Caltrans active visioning for CAV**
7. **Integration of CAV into Caltrans' transportation planning processes**
8. **Caltrans CAV working method**

CALIFORNIA
PATH

Findings from Staff Interviews

- **Staff that were interviewed are well informed on CAV and have a great interest in seeing it successfully deployed throughout CA**

- **Impact of CAV on Caltrans**
  - CAV will have a meaningful impact on Caltrans both near and long term (to differing degrees)
  - widespread CAV deployment is many years out but that there are actions that Caltrans should take now to prepare
  - safety is the number one goal of Caltrans and CAV will eventually have a positive impact on it
  - CAV will also have a smaller but significant impact on other Caltrans priorities: multi-modality, efficiencies, partnerships, and innovation

CALIFORNIA
PATH

Findings from Staff Interviews

- **Most promising aspects of CAV**
  - Increased safety for traveling public
  - Increased worker safety
  - Operational improvements
  - More efficient freight movement
  - Reduced GHG emissions
  - Better data for planning and operations
  - Better accessibility for the elderly, disabled and other underserved populations
  - Improved transit operations
  - Fewer lawsuits
  - Opportunity for Innovation

Findings from Staff Interviews

- **Most concerning aspects of CAV**
  - **Decreased safety during transition period**
  - **Cybersecurity**
  - **Data management**
  - **Technological uncertainty**
  - **Equity issues**
  - **Increase in VMT**
  - **Impact on infrastructure maintenance**
  - **Tort liability**

Findings from Staff Interviews

- **Caltrans Role in CAV Deployment (votes in parentheses)**
  - Partner (10)
  - Integrator (9)
  - Facilitator/leader (7)
  - Researcher (6)
  - Educator (6)
  - Regulator (5)
  - Promoter (4)
  - Innovator (4)
- **Caltrans should focus their role on the infrastructure side**

Findings from Staff Interviews

- **Recommended CAV Leadership Actions**
    - Internal CAV Working Groups (leverage existing groups)
    - Additional CAV Funding (must first demonstrate benefits)
    - Additional CAV Organizational Support and Coordination
    - Workforce development – new skills needed
    - CAV awareness and training – both internal and for locals
    - More CAV pilot deployments – expand testbeds
    - No consensus on leading a statewide CAV Consortium – consider building on existing efforts first

CAV Action Plan

- **Six Work Areas**
  - Organizational Change and Workforce Development
  - Planning and Programming
  - Pilots and Testing
  - Deployments
  - External Outreach and Partnerships
  - Policy
- **Priority**
  - Near-term (0-2 years)
  - Medium-term (3-5 years)
- **Responsible Party**
  - Caltrans Division(s) responsible for implementing action