Washington State AV Work Group - Infrastructure and Systems Subcommittee
June 14th, 2019 | 2:30pm-4:30pm

WSDOT HQ Nisqually Board Room | 310 Maple Park Ave SE - Olympia, WA 98501

Attendees:

First Name	Last Name	Organization
Ted	Bailey	Washington State Department of Transportation (WSDOT)
Debi	Besser	Washington Traffic Safety Commission
Daniela	Bremmer	Washington State Department of Transportation (WSDOT)
Brian	Brooke	Sound Transit
Barb	Chamberlain	Washington State Department of Transportation (WSDOT)
Jason	Campos	IBI Group
Jeffrey	Conor	Seattle DOT
William	Covington	University of Washington School of Law
Marc	Daily	Thurston Regional Planning Council (TRPC)
Trevor	Daviscourt	Washington State Department of Transportation (WSDOT)
Mike	Ennis	Association of Washington Business
Chris	Grgich	Intelligent Transportation Society of Washington (ITS-WA)
Eric	Hahn	City of Vancouver
Bruce	Haldors	Transpo Group
Jennifer	Harris	Washington State House Transportation Committee
Bob	Hart	Southwest Washington Regional Transportation Council (RTC)
Azmeena	Hasham	Verizon Smart Communities
Les	Jacobson	WSP USA
Daniel	Lai	University of Washington
Francesca	Maier	Fair Cape Consulting
Cecile	Malik	City of Auburn
Loreana	Marciante	HNTB
Steve	Marshall	City of Bellevue
Kelly	McGourty	Puget Sound Regional Council (PSRC)
Roger	Millar	Washington State Department of Transportation (WSDOT)
Kyle	Miller	Washington State Department of Transportation (WSDOT)
Marshall	Elizer	Washington State Department of Transportation (WSDOT)
Markell	Moffett	WSP USA
Pavithra	Parthasarathi	PSRC
Jeff	Peterson	First Group
Travis	Phelps	WSDOT
Carl	See	Washington State Transportation Commission
Michael	Transue	Association of Global Automakers
Mike	Walton	PACCAR
Yinhai	Wang	University of Washington Civil & Environmental Engineering
Bryce	Yadon	Futurewise
Ian	Wesley	Washington State Department of Transportation (WSDOT)
Christine	Wolf	NW Seaport Alliance

First Name	Last Name	Organization
Joey	Yang	HDR
Kim	Zentz	Urbanova

WELCOME, INTRODUCTIONS, OPENING REMARKS
Roger Millar and Mike Ennis

- Introductions
- Walkthrough agenda
- Go-To-Webinar remote participant process

Topic closed.

PUBLIC COMMENT

- No public comment.

Topic closed.

UW Law School Update
William Covington

- 2018-19 school year: Team of 6 students reviewed and analyzed legislative activity and made recommendations for revised law/definitions bill in relation to AVs
- 2019-20 school year: New group of incoming students will research AV policy – Starting September 23rd
- Positions/recommendations taken by 2018-19 group (will be starting point for 2019-20 students):
  - Washington State should have "light touch" regulation, minimal requirements that still enforce policy and safety
  - Pre-emption of Local Regulations:
    - Regulation should be statewide, instead of each city/county developing their own
    - Make as seamless to testing/deployment companies, enforcing agencies, and general public
    - Some cities/counties may have unique regulatory needs not met by statewide law to be considered
    - Have received pushback on this recommendation
      - Push back from Colorado and the Uniform Law Commission (ULC)
    - 2019-20 Work Plan:
      - Communicate with other states allowing pre-emption now
      - Communicate with jurisdictions in those states
      - Discuss opportunities/pitfalls with industry
      - Get a national snapshot of the issue(s)
      - Communicate with diverse communities
  - Definitions:
    - Robust definitions need to allow both semi and fully autonomous vehicles to fit within the language
    - Look at model legislation from Uniform Law Commission (ULC)
  - Self-Certification – Minimize Government Oversight
    - Faster process for companies to self-certify, reduced burden on government

- - Removes potential issues with misunderstanding of AV technologies by allowing those that know the technology to conduct certification
    - May prevent industry from taking safeguards,
    - Need to evaluate the benefits and potential impacts
  - Enhanced Infrastructure
    - Will benefit testing and deployment
    - Infrastructure and related enhancements are expensive
    - Infrastructure Owner Operators must "leave no stone unturned" – Urge government to use all available resources to create AV friendly highways, roads, etc.
  - Liability
    - Complex issue
    - If manufacturers believe technology is ready for the road, they should take on the insurance liability
    - Conducting national research to understand what other states are doing
    - 2019/20 Work Plan: Communicate with selected states, insurers, manufacturers, and diverse communities on liability issues
    - These types of issues are being addressed in the Liability subcommittee.
  - Data Security
    - Hacking and security issues expected
    - A robust security regime is needed
    - 2019/20 Work Plan: Communicate with states, cities, subject matter experts, industry and diverse communities
    - These types of issues are being addressed in the Liability subcommittee.
  - Social Justice – No One Left Behind
    - What can we do to make sure no one is left behind with the introduction of this technology?
    - Explore the positive things that AVs can bring, such as more accessibility, but be aware of the potential impacts
    - Ensure fairness
    - 2019/20 Work Plan:
      - Cast a wide net
      - Communicate with states, industry, organizations such as NHTSA, and diverse communities
    - The Safety Subcommittee is planning to recommend a new subcommittee focused on the complex issues of social justice.
- These are general recommendations that future students will continue to build on
- UW Law is a state school, so they have an obligation to help the State of Washington, and this Work Group to shape AV policy for Washington
- Although 2018/19 students are graduated, still have some resources through summer to continue exploring what issues we should be researching and doing to add value to AV Work Group
- Group Discussion on Presentation and UW School of Law Recommendations:
  - Who pushed back on Pre-Emption and Self-Certification recommendations?
    - Colorado and the Uniform Law Commission (ULC)
  - For AV definitions, will the students be including/leveraging the definitions put forth by the U.S. DOT in ADS 2.0 and 3.0?
    - Yes. Also will compare to ULC definitions.
  - When you reference infrastructure, what infrastructure are you referring to?

- Roads. Highways. Striping. Fielding traffic lights. Things to avoid misreading of the environment by AV Software.
  - o Are the current 6 recommendations available to review?
    - Yes. They are included in the slide deck presented to the AV Work Group on October 24th, 2018. This slide deck has been provided to AV Work Group members and is available on the Work Group website.
  - o Next round of recommendations would need to be received by the August 12th, 2019 Infrastructure & Systems subcommittee meeting to be considered for the September 26th Executive Committee meeting.
  - o Roger Millar co-chair of AASHTO CAT Coalition working in this space, can connect with William Covington offline to connect with AASHTO CAT Coalition staff for next round of student research/analysis in the fall.
  - o Should these current recommendations be considered as a document to review for Subcommittee Work Plan Activity #1?
    - Yes. Include these in the reviews, with the caveat that these are a "point in time" review/reference and will be revised.
  - o What is the current status of ADA work with AVs?
    - Very preliminary work being done in this area. Will share more when more is available.
  - o Next subcommittee meeting is August 12th, suggest tentative timeslot for UW School of Law to present again with updates on any revised recommendations.
  - o Suggested research topic for next round of students – Current infrastructure readiness in the state of Washington, conducting a complete audit of what infrastructure is on the books now that would pertain to C/AVs.
    - University can help providing research
    - Example of existing infrastructure-related policy to research: Safe-following distances that restrict truck platooning activities
    - UW has already assisted in one initiative to explore barriers to AV testing and deployment in the state working with Challenge Seattle on the "Driverless Seattle" initiative
    - UW School of Law has already conducted some work on this, identifying parts of the Washington State vehicle code that would need to be changed

Topic Closed.

ACTION PLAN PROGRESS REPORT
Roger Millar and Mike Ennis

Activity 1: Policy Framework Reviews – Francesca Maier

- Objective: Review available AV policy frameworks from around the nation/world, identify policies to implement in Washington, create an Infrastructure and Systems focused Washington State Cooperative Automated Transportation (CAT) Policy Framework (using WSDOT's Draft CAT Policy Framework as starting point).
  - o At minimum, this statewide CAT Policy Framework will serve as framework to inform infrastructure owner operators (IOOs)
  - o WSDOT, and other state IOOs, need to know how risk, safety, cybersecurity, etc. will interact with infrastructure and operations.

- o The AASHTO CAT Coalition already collected 31 policy frameworks nationwide to use as starting point for review (Available for download: https://transportationops.org/CATCoalition/clearinghouse-cat-policy-frameworks
- Roger proposed to present to the AV Work Group Executive Committee the need for an overarching policy that should integrate the policy frameworks/recommendations brought forward by each subcommittees: Liability, Safety, Infrastructure & Systems, Licensing and System Technology and Data Security. Over time, the separate policy frameworks/recommendations developed by each of the subcommittees should crosswalk/coordinate with each other in a cohesive, integrated way.

- Activity #1 Team created review template (reviewed at April 26th subcommittee meeting) to document review
  - o Review template serves as the trail of how future statewide policy framework came to be
- Aggressive schedule – Activity scheduled to be done by September, 2019
- 5 tasks within Activity #1
  - o Gather Documents – completed
    - *ACTION ITEM* (to all meeting attendees): If you find a policy framework not already on the list that should be reviewed, please contact Francesca Maier to add to review list, only if adding yourself as the 1st Reviewer
  - o Screen Documents – In Progress, behind schedule
    - 1st and 2nd reviews
    - Using review template
    - Documents being reviewed are being marked up for easy tracking
  - o Detailed Review – Not Started
    - Short relist of documents reviewed that are relevant to extract out policies, illustrative actions, goals, strategies
    - Work to draft statewide policy framework can only begin after detailed review
    - Need to find ways to expedite this task
  - o Draft Statewide CAT Policy Framework – Not Started
  - o Final Statewide CAT Policy Framework – Not Started
    - Due by September 9th subcommittee meeting for review and recommendation vote for Executive Committee meeting scheduled for September 26th
- By the Numbers:
  - o 15 volunteers, 8 are active
  - o 39 documents, 9 have been reviewed
  - o 1,917 pages to review, 342 reviewed
  - o 4 months to complete Activity #1, 1 down already
- Question: Is there a way to shorten list of documents to review without having to complete a 1st review?
  - o Unfortunately, not really. Until 1st review completed, unknown whether worth keeping or not.
  - o Even a light/quick review takes time.
- Google drive folder for managing Activity #1 tasks
  - o Task management spreadsheet – roster, schedule, and document index
  - o Needed to develop some type of process/procedures to manage this task, lots of moving parts
  - o Examples of completed reviews available
  - o Review template – sections highlighted yellow are OK to skip for expedited review
  - o 1st Reviewer: Save As document being reviewed (PDF) and markup/comment
  - o 2nd Reviewer: Use 1st reviewer's marked up version to respond, continue review

- *ACTION ITEM* (to any Activity #1 Team Members): Must review WSDOT CAT Policy Framework and be prepared to discuss on July 3rd Activity #1 Team call
- Next steps:
    - Assign all documents to a volunteer for 1st and 2nd reviews
    - Complete 1st and 2nd reviews
    - Shortlist documents for detailed review
    - Extract policy goals/strategies and illustrative actions
    - Create outline for a Washington State CAT Policy Framework
- Question: Of the 9 documents that have been reviewed, is that 1st and 2nd review? Or just 1st?
    - 9 have had 1st reviews
    - Can take anywhere from 30 minutes to 5 ½ hours to review, comment, fill out template based on size and depth of document
    - mark one we definitely want to short list, do best to identify
    - Reviewers may be able to identify documents that definitely will be short listed, flag those and come back later. Will at least shorten list faster.
- Question: Are these infrastructure-only policy documents, are do they relate to all things AV?
    - A mix of both. Most policy frameworks do not focus on just one aspect of AVs.
    - We want to focus on which policies apply best to IOO
    - Will flag content relevant to other subcommittees and forward on to them
        - *ACTION ITEM* **Need process to flag and forward content relevant to other subcommittees**
        - WSDOT subcommittee staff have monthly calls with other subcommittees, can pass on information.
- Question: Are the deadlines for this activity self-imposed?
    - No. Deadlines were selected so we could be prepared with a recommendation(s) for the September 26th Executive Committee meeting
        - September Executive Committee meeting deadline is so that recommendations can make it to the Washington State Transportation Commission and the Washington State Legislature for the 2020 session.
        - As of now, September 26th is the last time the Executive Committee meetings before session
        - More flexibility to make recommendations to Executive Committee between meetings would be helpful
        - Possibly forward this work/recommendation(s) to the next Executive Committee cycle,
- Group Discussion on Activity #1:
    - Thank you to the Activity #1 Team for taking on this work. Very important, sensing some frustration in current progress and engagement level.
    - If 1st reviewer flags a document as not relevant, suggest 2nd reviewer run through very quickly to confirm 1st reviewer comment and discard document from further review. May save time.
    - *ACTION ITEM:* Suggest adding checkboxes to review template for other 4 subcommittees, can be used to indicate if there is content to forward
        - Easier for WSDOT subcommittee staff to identify which documents to forward to other subcommittees
    - *DECISION*: Grant reviewers ability to flag on 1st review as not relevant, 2nd reviewer simply confirms 1st reviewer's comment(s) and discards

- o *ACTION ITEM*: Roger and Mike, suggest to the Executive Committee to create more flexibility with deadlines to allow subcommittees to develop recommendations at the needed pace rather than to meet self-imposed deadlines.
- o *ACTION ITEM*: Roger proposed to present to the AV Work Group Executive Committee the need for an overarching policy that should integrate the policy frameworks/recommendations brought forward by each subcommittees: Liability, Safety, Infrastructure & Systems, Licensing and System Technology and Data Security. Over time, the separate policy frameworks/recommendations developed by each of the subcommittees should crosswalk/coordinate with each other in a cohesive, integrated way
- o *ACTION ITEM*: WSDOT subcommittee staff and Activity #1 Lead to add checkboxes for other subcommittees to review template
- o *ACTION ITEM*: If any other meeting attendees would like to volunteer for Activity #1, contact Ted Bailey, who will connect you with Activity #1 Lead (Francesca Maier)
- o *ACTION ITEM*: Francesca Maier to send Ted Bailey list of inactive volunteers, Ted will follow up with a phone call
- o *ACTION ITEM*: WSDOT subcommittee staff will send another request to distribution list requesting volunteers

Activity 2: Project Selection Criteria – Joey Yang

- Objective: Develop project selection criteria and potential funding sources/opportunities for CAT, C/AV-oriented projects
- Three tasks within Activity #2:
  - o Literature review – Review existing project selection criteria from Florida and Seattle DOT, as well as existing grant programs (e.g. CMAQ) and compare criteria against program requirements to identify synergies and gaps
  - o Funding Sources – Identify local, state, and federal funding sources/opportunities, such as grant programs, that could be leveraged for CAT, C/AV-oriented projects
    - Identify criteria, timeline for applications, due dates, etc.
    - Evaluate how well CAT, C/AV-oriented applications would compete in existing grant programs
    - Are there changes that can be made to make existing grant programs more competitive?
    - Are there areas where CAT, C/AV-oriented projects will compete that do not fit within existing grant programs?
- Evaluate/Narrow/Prioritize Existing Project List
  - o Use 2018 survey results for potential CAT, C/AV-oriented projects as starting point
  - o What projects would we like to see/pursue/encourage?
  - o What projects could we do near-term?
- *ACTION ITEM*: Request to Activity #1 reviewers, if any reviewed document has project selection criteria and/or funding information, forward to Activity #2 Team
- *ACTION ITEM*: If any other meeting attendees would like to volunteer for Activity #1, contact Ted Bailey, who will connect you with Activity #1 Lead (Francesca Maier)
- Group Discussion on Activity #2:

- o Will there be any distinction between trucks and passenger vehicles in project selection criteria? Vehicles is broad category.
  - Yes. Some grant programs differentiate, or require certain types of vehicles.
  - Freight Mobility Strategic Investment Program requires a heavy truck/freight component.
  - Rural Mobility Grant Program focuses mainly on buses and subsidizing transit services in rural communities
  - The task here is to evaluate these types of grant programs and whether it would make sense to add CAT, C/AV-oriented to compete in these programs

Activity 3: Partnership and Collaboration Discussions with Private Sector – Ted Bailey

- Objective: Communicate with the 11 AV companies self-certified through DOL to test in WA state, find out how subcommittee can help, share information, collaborate.
- ACTION 1:
  - o What types of questions would we want to ask all self-certified AV companies? Certain types of AV companies?
    - Self-certified companies range from manufacturers to software to shuttles to testing/deployment companies
  - o Activity #3 Team discussing how best to approach communication/collaboration
    - Emphasize desire for light touch regulation
    - General approach will be the same, but discussions/questions will be different between each company. Use a similar "framework" to drive a consistent collection of information. Develop a basic set of guidelines/questions to provide enough consistency to collect usable info without being onerous.

- ACTION 2:
  - o PACCAR and Peloton starting to compile initial data for year-end report on SAE 1 and 2 truck platooning activities in WA
  - o Year-end report, due in December 2019, will include information on where other states are at with deployments and regulation requirements.
- Group Discussion on Activity #3:
  - o Question: Have all 11 self-certified companies been contacted yet?
    - No, about half have had at least initial contact. Still figuring out best person(s) to contact each company – would prefer known entity contacting instead of a cold call
- ACTION ITEM: By the September 9th subcommittee meeting, Activity #3 Team will have communicated with all 11 self-certified companies

Topic Closed.

IOO GUIDING PRINCIPLES FOR CONNECTED INFRASTRUCTURE SUPPORTING CAT – ITE, ITSA, AASHTO

Roger Millar

- Mix of public and private sector partners working together on a national CAT framework
- Group agreed that a set of guiding principles for IOO in U.S. is needed

  Rules for crossing jurisdictional lines, etc.

  The five principles are:

- o *Automation:* – support increased automation to prove traveler safety, mobility, equity, and efficiency
  - ▪ 94% crashes in country due to human error
- o *Data*-achieve a connected vehicle ecosystem that enables reliable, secure V2I data exchanges to support CAT
  - ▪ OEMs, mobility service providers, etc.
  - ▪ All talk the same language
  - ▪ Standards
  - ▪ National approach to secure data exchanges
  - ▪ Protect PII
- o *Telecommunications*: protect and utilize the 5.9GHz spectrum designated for public safety (e.g. operations related to the improvement of traffic flow, traffic safety and other intelligent transportation service applications)
  - ▪ DSRC
  - ▪ Spectrum is valuable
  - ▪ Others are saying nothing is happening, we want FCC to pull this reservation for transportation safety from spectrum and allocate to other people who are ready to deploy faster
- o *Operations:*
  - ▪ What we have today, we are building on
- o *Collaborations:*
  - ▪ Interoperability and positive impacts
  - ▪ Don't want everyone working in silos
- Group met within the past few weeks, drafting a guiding principles document now, work will be ongoing
- AASHTO Transportation Policy Forum will be considering draft principles in August
- AASHTO Board of Directors will be considering in September
- This IOO Guiding Principles document is expected to inform national reauthorization discussion as it relates to infrastructure
- *ACTION ITEM*: If any meeting attendee has questions or comments, forward to Ted Bailey, who will compile and forward to Roger Millar to take to group.
- Question: In the recent Safety subcommittee meeting (June 12th), discussed what data is available for ADAS effectiveness. There does not seem to be a database of data comparing collisions/injury rates between ADAS and non-equipped vehicles. How effective have ADAS technologies been?
  - o Basic research is being conducted at several universities.
  - o Currently, state patrols and DOTs do not have a framework to get that information.
  - o Have explored trying to get airbag active status data from vehicles
    - ▪ Would assist in determining HOV status of a vehicle for enforcement, reducing state patrol required
    - ▪ Have talked with OEMs, who have declined request for data
    - ▪ Defining and agreeing on protocols for collection and sharing of data (vehicle, driver, infrastructure) is proving quite difficult

ACTION ITEM: Roger will share the IOO Guiding Principles at the June 28th, 2019 AV WG Executive Committee Meeting

Topic Closed.

MOBILITY ON DEMAND
Roger Millar

- Mobility on Demand (MoD) discussion is broader than C/AV, but C/AV can operate in that space.
- Europe is already deploying MoD applications.
- U.S. is piloting applications – Pierce and King Counties are both conducting pilots
- MoD Alliance to bring conversation together, cohesively track progress, discuss issues
  - Example: Paratransit – Very important. How to handle, deploy.
  - Example: Pierce Transit Partnership with Lyft, 1st/last mile connection to transit
  - Example: King County Metro Partnership with Via , 1st/last mile connection to Park & Ride lots that are full providing increased access to transit.
  - Example: If we enter into P3, does private sector take on ADA responsibility?
- *ACTION ITEM*: Roger will share MOD Alliance Efforts at the June 28th, 2019 AV WG Executive Committee Meeting

Topic Closed.

ROUNDTABLE
All Meeting Attendees

- Carmera offers free, real-time HD LiDAR maps for cities – for AVs
- Regarding the Washington State CAT Policy Framework: Suggest a more flexible policy structure that focuses on core policies and goals, allows government to respond to technology rather than try to guide it.
  - Example: High capacity public transit policy – Language could be refined to open up to the "unknown", be flexible for C/AV technologies
    - It is important that we move a lot of people efficiently. Include Person throughput as a core performance metric.
    - Example – Downtown Seattle currently has two lanes of traffic and two lanes of parking. If all AVs on the road, parking no longer needed and could have four lanes of traffic.
      - What else may we want to do with that space?
    - What does the community want to be?
    - How do we harness technology to meet those needs?
- Lane departure systems can save a lot of lives.
  - Colorado working on a $10M 3-year effort to update entire urban area with better striping
    - Black striping on each side of the white stripe
    - 6-inch wide stripe for mobility and visibility especially for aging drivers.
  - Pavement markings is a great near-term opportunity
  - WSDOT is coordinating with Colorado to learn from their experience.
- Lately, media coverage of AVs has been less supported and forward thinking, and more conservative, "AVs are not coming for a while". More focus is needed on how consumer sentiment changes after experiencing the technology first hand. Are people more comfortable with C/AV Technology after riding in a vehicle equipped with new technologies and/or after being educated about the features and limitations of the technologies?

Topic Closed.

MEETING ADJOURNED.