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## TECHNICAL MEMORANDUM

### TxDOT IAC – Technical Support to the CAV Task Force

**DATE:** July 14, 2021

**TO:** Zeke Reyna, TxDOT  
Strategic Research Analyst, CAV

**COPY TO:** TTI\_Reports@tti.tamu.edu  
Tim Hein, Research Development Office, TTI  
Ed Seymour, Executive Associate Agency Director, TTI  
Robert Brydia, Senior Research Scientist, TTI

**FROM:** Beverly Kuhn Research Supervisor  
Senior Research Engineer Texas A&M Transportation Institute

**RE:** Freight and Delivery Subcommittee  
June 16, 2021, Meeting Notes

#### Attendees:

Aidan Ali-Sullivan	Nuro
Andrea Gold	University of Texas Center for Transportation Research
Anna McAuley	University of Texas Center for Transportation Research
Bart Teeter – Co-chair	TxDPS
Beverly Kuhn	Texas A&M Transportation Institute
Beverly West	Texas Department of Transportation
Brent Skorup	Mercatus
Brian Moen	City of Frisco
Caroline Mays	Texas Department of Transportation
Daniel Goff, Co-Chair	Kodiak Robotics
Darran Anderson	Texas Department of Transportation
David Millikan	WGI
David Ruth	MoToGo LLC

DuWayne Murdock	Texas Department of Motor Vehicles
Ed Seymour	Texas A&M Transportation Institute
Gerardo Interiano	Aurora
Jason JonMichael	City of Austin
Jimmy Archer	Texas Department of Motor Vehicles
Jordan (Alex) Payson	City of Austin
Jordan Coleman	Kodiak
Karan Khosla	HDR, Inc.
Katie Carmichael	Nuro
Kristie Chin	University of Texas Center for Transportation Research
Laura Weis	Michael Baker International
Michael Sanders	Texas A&M - Corpus Christi
Monika Darwish	Embark
Rama Dhanikonda	City of Richardson
Richard Steiner	Gatik
Robert Brydia	Texas A&M Transportation Institute
Steven Smith	McKinsey & Co.
Thomas Bamonte	North Central Texas Council of Governments
Zeke Reyna	Texas Department of Transportation

**I. Opening Comments/Roll Call – Zeke Reyna**

- Welcome to next round of meetings and looking at topics for this upcoming year and possibility to expand on ideas from last year.
- Roll call of members and attendees
- Introduced meeting facilitators.

**II. Chair Welcoming Statement - Daniel Goff**

- Daniel welcomed and thanked everyone joining and looking forward to interesting and exciting conversation.
- Amazing job putting together White Paper on progress of what is going in in Texas. Focus on helping people understand, both legislature and the public.

**III. Review of Meeting Structure – Beverly Kuhn**

- Review of Mural Board
  - Basic overview of how meeting structured on Mural and how members of the subcommittee can interact with it.
- Ideal outcome for this meeting to take a vote to narrow down future topics for the Freight subcommittee to investigate.

#### IV. 2021 Subcommittee Opening Facilitated Discussion – Beverly Kuhn

- Opportunities Identified from 2020 Meetings (*comments noted*)
  - Prioritize roadway maintenance along CAV corridors, focusing on lane striping, pavement quality, and signage.
    - *On TxDOT to lead*
  - Launch a cooperative research program targeted at research gaps for common infrastructure challenges such as work zones, forced merges, and transfer points.
    - *Darran work with RTI to get this launched.*
  - Expand the Texas connected freight network to include local roads, using the Texas Connected Freight Corridors project as an opportunity to develop critical applications, gain experience in connected vehicle technology, and formulate best practices for deployment.
    - *Somewhat out of our hands because of chip shortage.*
    - *Building on third bullet on 2020 list: We need to focus on infrastructure and regulatory challenges associated with non-expressway AV freight--e.g., Nuro, Gatik.*
  - Invest in workforce development programs that upskill workers and create new educational pathways.
    - *Turn over to the Education Subcommittee.*
- Potential Topics for 2021 (*comments noted*)
  - **Topic 1:** General interest in the question of automation and freight along the border; border trade
    - *legislation related to operations along the border; - SB 1308 (currently in Gov's office)*
  - **Topic 2:** Inspections - law enforcement needs related to AV and autonomous trucks.
  - **Topic 3:** Freight launch pads - get on the highway, perform autonomously, get off highway.
    - *CAV TF can be directly engaged in the new study included in legislation (technology and workforce pieces)*
    - *Expand #3: broader discussion for PPP; charging stations, rest areas, TxDOT, DPS, etc. Zoom out from this and look more broadly at partnership opportunities related to infrastructure issues.*
    - *urban air mobility bill (signed); creates an advisory committee under the TTC. There is a freight component of that; looking for organizations and names to be part of that committee; inform that effort; SB 763.*
  - **Topic 4:** How do we encourage pilots and trials? - Private sector / TxDOT / Feds - might only apply to a subset of the committee involved in long-haul.
    - *include traffic control under this topic; opportunity to collaborate with other subcommittees.*
    - *What infrastructure do agencies and companies have access to? what can they work with and test on with permission from public agencies?*
    - *NASA and novel national agreement for EV testing.*

- *smart road infrastructure: Arizona passed law that gives structure to allow the stated DOT and telecom to have PPP to develop smart infrastructure (see link listing)*
- *include work zone data, road maintenance, traffic flow and inspections under the topic #4 - pilots and trials; opportunity to collaborate with other subcommittees.*
- *drone delivery is also part of the last mile delivery, drone easements, etc. (see link listing)*
- *electrification likely to remain a question into the future from TxDOT's perspective and industry.*
- *PDDs should also be part of this discussion (possibly trials/pilots); other versions of bots; gray areas and lessons learned.*
- *Subcommittee could host some efforts; valuable for industry and TxDOT.*
- *In next meeting, the group could dive deeper into #4 - what detail is needed.*
- *Item 4 cross-cover and encompass topics 2 and 3.*
- **Topic 5:** Cargo type - Is HazMat allowed? Currently no regulations preventing it, but not something companies are looking to do at this time.
- Other Potential Topic (*comments*)
  - *TMC and/or corridor level efforts*
  - *Economic benefits*
  - *Corridor perspective: include Arizona and New Mexico (legislation: see link listing)*
  - *Actions emerge from the 2020 items to educate, inform, advance a topic.*
- **Topic 6:** *Advisory Efforts of the Subcommittee*
  - *PDDs and AVs - difference in the bills; need clarity for the private sector partners.*
  - *where there is working going on in the local levels and also with TxDOT, perhaps the subcommittee can be directly involved in those efforts; the subcommittee could be a coordinating body.*
- **Topic 7:** *Existing Activities*
- **Topic 8:** *Brand New Activities*

## V. Voting – Beverly Kuhn

- Each person gets two votes.
- Voting Outcome:
  - 14 votes for Topic 4
  - 7 votes for Topic 3
  - 6 votes for Topic 2
  - 2 votes for Topic 1

## VI. Next Steps – Zeke Reyna / Daniel Goff

- We will continue to meet once per month, as in the past.
- Thanks to everyone for participating.

## VII. Closing Remarks – Daniel Goff

- Daniel thanked everyone for great discussion. Looking forward to getting started on these items.

### Links shared in chat:

[2:33 PM]

Arizona HB2596 | 2021 | Fifty-fifth Legislature 1st Regular

Bill Text (2021-05-10) ADOT; telecommunication facilities installation [Chapter 351]

[2:42 PM]

[Pizza Delivery Robots From Refraction AI Arrive in South Austin - Eater Austin](#)

Pizza Delivery Robots Are Rolling into Austin

Refraction AI's REV-1 robots will deliver Southside Flying Pizza orders throughout downtown, Travis Heights, and South Congress

[austin.eater.com](http://austin.eater.com)

[2:42 PM]

Texas drone easement bill: HB 3403 <https://legiscan.com/TX/text/HB3403/2021>

Texas HB3403 | 2021-2022 | 87th Legislature

Bill Text (2021-03-22) Relating to the operation of an unmanned aircraft that is outside the direct line of sight of the operator of the aircraft; creating a criminal offense; imposing a fee. [Refe...

[2:58 PM]

NCTCOG is advancing a couple of projects of possible interest to this subcommittee, including an AV truckport on I-35W, a sidewalk delivery bot in a food desert, and a community college transportation technology/AV trucking curriculum. Go to June 10/Presentations/Item 9 here: [North Central Texas Council of Governments - Meetings \(nctcog.org\)](http://NorthCentralTexasCouncilofGovernments-Meetings(nctcog.org))