TECHNICAL MEMORANDUM

TxDOT IAC – Technical Support to the CAV Task Force

DATE: February 10, 2022

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: Workforce and Economic Opportunities Subcommittee
              February 10, 2022, Meeting Notes

Attendees:

Andrea Chavez	Grace & McEwan Consulting, LLC
Aiden Ali-Sullivan	Waymo
Beverly Kuhn	Texas A&M Transportation Institute
Blake Calvert	Office of the Texas Governor
Brian Moen	City of Frisco
Cheng Zhang	Texas A&M Transportation Institute
Chris for Servando Esparza	TechNet
Darran Anderson	Texas Department of Transportation
Jeremiah Kuntz	Aurora
Karan Khosla	HDR, Inc
Lori McMahon	Toyota
Pamela Bailey-Campbell	Santec
Robert Brydia	Texas A&M Transportation Institute

Tammy Meehan Russell	Plum Catalyst
Tom Bamonte	North Central Texas Council of Governments
Zeke Reyna	Texas Department of Transportation

I. Opening Comments/Roll Call – Zeke Reyna, TxDOT
- Welcome to all subcommittee members
- Roll call of attendees

II. Chair Welcoming Statement – Tom Bamonte, North Central Texas Council of Governments
- Welcome to everyone
- Many of you may have watched the House subcommittee hearing on AVEs last week. There was quite a bit of focus given on the workforce impact and opportunities which underscores the importance of what we are doing here.

III. Mural Board Discussion – TTI Team
- Focus
  - Goal: to explore the impacts of connected and automated vehicles (CAV) and related technologies on the full spectrum of the Texas workforce and determine ways that CAV technology development and deployment can help grow the Texas economy including opportunities for the expansion of new career fields.
  - Deliverable: White Paper
  - Today's Intended Discussion: identify the boundaries of the requirements topic for the white paper as it is a rather large topic; gather input on views related to the requirements needed along the technology maturity curve
- Background
  - Reviewed headlines and trends CAV technologies and developments have had on workforce
  - Determined subcommittee parameters of vision
  - Discussed and voted to determine key topics of discussion
    - Requirements
      - Potential job types: test operators, vehicle operators (req. CDL); entry-level engineers
      - Engineers to build up vehicles; role for outfitters and technicians to build and maintain the vehicles; fleet maintenance very critical
      - operations personnel to keep the fleets in operation
      - Increased access for students to high-level STEM, computer science, information technology (IT), and coding courses
      - How do we bring all of the needs come together in Texas?
    - Skills
    - Training
- Discussion
  - Needs
    - Data: Consumption, Analytics, Interpretation
    - PR people

- - Safety professionals need to be a part of the discussion
    - Management of data privacy in addition to data security
    - Start the pipeline with education coming up
    - Public agencies receiving data to ensure they can make policy decisions: Public Trust Issue
    - is there a role for the "state" to play a role in stimulating the awareness and interest in this industry?
    - how are existing companies that are using CAV finding their workforce? Boots on the ground support positions
    - How to make this industry exciting and highlight interesting components? How do we "sell it" to people that might potentially enter our workforce?
  - Paraprofessional
    - Use education to bridge
    - See that there is a career path. Recruitment into a legacy job may come with retraining.
    - Leverage AV to augment workforce (such as drivers)
  - Labor and workforce committee (MI); look at different age groups and engagement with them
    - Current workforce: upscaling and rescaling / different approaches
    - K-12 - spark
    - College- career paths
  - Existing companies using CAV; how are they recruiting and hiring their personnel? what are they looking for? Education? skills? etc.
    - Ag
    - Ports
    - AV companies
  - Is there a role for public agencies to stimulate the awareness at all levels of the opportunities in this industry
  - Curriculum enrichment / education issue
  - BURST programs? specialized/customized training program
  - Partner with community colleges / trade schools to provide training and skill development to meet needs
  - This 2/24 public meeting/panel discussion on emerging transportation tech and workforce opportunities that NCTCOG is hosting as part of our ongoing AV planning project might be of interest: Meeting Registration – Zoom link
    - https://us02web.zoom.us/meeting/register/tZYtfumgrTIsE9zj43kszSqa9zM6SUSzIs7W
- Workforce Topic: Requirements
  - Paraprofessional
    - truck drivers
    - automotive technicians
    - compliance officers
  - Professional
    - civil engineer
    - transportation planner

- systems engineer
- computer engineer
- surface weather specialist
- cyber security engineer/specialist
- artificial intelligence scientist
- data management specialist
- emerging technologies industry liaison
- program manager
- statistician
- safety professionals
- Institutional Considerations
    - Freight: shippers vs. drivers (equal respect); key to driver retention
    - Update position descriptions to reflect position types and skills
    - break down organizational silos
    - expand flexibility of accepted degree/training programs
    - wider range of career path options
    - important to consider recruiting, retention, diversity, inclusion
    - apprenticeships could be considered
    - simplified hiring practices
    - shorter on-boarding and training timelines can get drivers on the road faster
    - Increase the infrastructure and operational efficiencies, the use of technology, such as telematics, electronic logging devices and the use of driver assist devices to increase the truck operation efficiency
    - impact of policy on truck driving industry
    - private-sector vs. public-sector benefits for employees; need to have benefits that attract the workforce needed
    - workforce projection and forecasting activity
    - defined benefits and retirement plans/programs can attract younger workers
    - need for comprehensive talent/career management program
    - workforce diversity and inclusion
    - mentoring and sponsorship programs for employees
    - need for innovative and interdisciplinary partnerships
- Other
    - non-traditional workforce
    - aviation
    - military
    - law enforcement
- Deliverable Outline
    1. Overview
        - https://ouravfuture.org/about-us/
    2. Required Skills
    3. Required Personnel
    4. Needs vs CV Maturity
    5. Institutional Considerations
        - Career path scenarios
        - institutional responsibilities

- governmental / state responsibilities and collaborations
- not just a zero sum game; opportunity for growth in the transportation sector

6. Challenges and Issues
    - incentive opportunities - state to incentivize in job opportunities
    - education/training pipeline possibilities
    - clearinghouse of local incentive programs;

IV.   Next Steps – Beverly Kuhn / Zeke Reyna
- We will work on flushing out an outline and start putting mean on the bones of this draft White Paper.
- This is a work in progress for a new subcommittee so we are going to take our time. We are not in a rush as we move forward and adapt to what is needed in this emerging and ever changing industry
- Keep an eye out for an invitation to a Full Task force meeting in the next month or so

V.   Closing Remarks –Tom Bamonte / Zeke Reyna
- Thanks to everyone for participation as we have generated a wealth of ideas and resources.
- Please forward organization links, articles, contacts, etc.. to Beverly's inbox
- We will be reaching out to some of the groups mentioned here to learn more about how we can interact as a task force with them

Comments and links from Chat:
- "Burst training programs" are a big trend right now related to CAV labor & workforce
- This 2/24 public meeting/panel discussion on emerging transportation tech and workforce opportunities that NCTCOG is hosting as part of our ongoing AV planning project might be of interest: [Meeting Registration - Zoom](#)
    - o Welcome! You are invited to join a meeting: Public Meeting 2 - Preparing for Emerging Transportation Technologies: A Panel Discussion on Education and Workforce Development. After registering, you ...
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- https://www.wsj.com/articles/community-colleges-are-an-agile-new-player-in-job-training-11632405309