


**NRPC APPROVED MINUTES**  
**NRPC TRANSPORTATION TECHNICAL ADVISORY COMMITTEE MEETING**  
**05/09/18**

**Members Present:**

|  |   |
|--|---|
| Gordon Leedy, Town of Amherst          | Joe Mendola, City of Nashua             |
| Tom Bayrd, Town of Hollis              | Camille Pattison, Nashua Transit System |
| Elvis Dhima, Town of Hudson            | John Savage, City of Nashua             |
| George Thebarge, Town of Hudson        | Jeff Gowan, Town of Pelham              |
| Mark Chamberlain, Town of Lyndeborough | Jim Lavacchia, Town of Wilton           |
| Julie Chizmas, City of Nashua          | Liz Strachan, NHDES                     |
| Wayne Husband, City of Nashua          | Linda Dusenberry, NHDOT                 |
| Sarah Marchant, City of Nashua         |   |

**Others Present**

|                                 |   |
|---------------------------------|---|
| James Vayo, City of Nashua      | Charles Blackman, NHDOT                       |
| Leigh Levine, FHWA              | Suzanne Fournier, Brox Environmental Citizens |
| Jason Flourde, BETA Group, Inc. |   |

**STAFF PRESENT**

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|--|--|
| Gregg Lantos, Principal Transp. Planner/MPO Coord. | Matt Waitkins, Senior Transportation Planner     |
| Cassie Mullen, Reg'l Planner/Mason Circuit Rider   | Stephen Meno, Reg'l Planner/Wilton Circuit Rider |
| Karen Baker, Program Assistant                     |  |

**CALL TO ORDER AND INTRODUCTIONS**

Lantos called the meeting to order at 12:08pm.

**APPROVAL OF THE MINUTES FROM THE APRIL 11, 2018 MEETING**

Waitkins referred to the minutes of April 11, 2018 included in the agenda packet as Attachment 1. He asked if there were any corrections; if not a motion for approval. Gowan motioned with a second from Thebarge to approve the April 11, 2018 TTAC minutes. All were in favor and the motion passed.

**DISCUSSION OF CONNECTED AND AUTONOMOUS VEHICLES (CAV): GUEST SPEAKERS - CHARLES BLACKMAN, NHDOT TRANSPORTATION MANAGEMENT CENTER AND NATE MILLER, SOUTHERN NH PLANNING COMMISSION**

***Connected and Automated Vehicles: A Roadmap for New Hampshire – Charles Blackman***

Blackman welcomed the group and started his presentation on CAV noting that the idea of self-driving cars dates back to General Motors' Futurama exhibit at the 1939 World's Fair. It started early on with FHWA's Intelligent Vehicle Highway System Program (IVHS). In 1995, a robotics team from Carnegie Mellon University did a No Hands Across America trip from Pittsburgh to Los Angeles in a vehicle called NavLab 5. Today, many aspects of self-driving cars are being incorporated into new car models. In addition, intelligent driver-assisted features are slowly bridging the gap between semi-and fully autonomous abilities. Blackman informed the group of the difference between autonomous vehicles and connected vehicles:

**Autonomous Vehicles (AVs):** Vehicles in which at least one element of vehicle control occurs without direct driver input and gather info from various sensors such as cameras, radar, and light detection and ranging (LiDAR).

- Operate in isolation from other vehicles using internal sensors.

**Connected Vehicles:** Have the ability for a vehicle or driver to receive and use broadcasted information about traffic, travel, roadway condition, and other information for enhanced safety and efficiency allowing AVs greater situational awareness.

- Communicate with nearby vehicles and Infrastructure.

Blackman noted that Connected Automated Vehicle leverages connected and autonomous vehicles. Next, Blackman noted the SAE automation levels, their descriptions, system capability, driver involvement and examples of each.

Blackman noted that communication is a critical component in automation and reviewed Vehicle to Vehicle (V2V) Communication which is wireless transmission of data between motor vehicles and uses on-board dedicated short-range radio communication devices; and Vehicle to Infrastructure (V2I) Communication which allows vehicles to share information with the surrounding transportation system.

Blackman summarized CAV History from the early 2000's, mid-2000's to the late 2000's, noting the renewed focus on advancement of ITS which includes the connected vehicle program and public and private collaboration for V2V and V2I implementation. He also reviewed New Hampshire HB 314 which would allow car manufacturers to test level 5 only automated vehicles on NH roads by January 2019 with an insurance plan and licensing permit fee. In addition, certification proof would be required that the vehicles had been previously tested under controlled conditions in a NH testing environment and plan demonstration related to law enforcement interaction. Blackman noted the NH Regulatory definitions for automobile/motor vehicle and driver. He also referred to the New England Transportation Consortium (NETC), a cooperative effort of the NE State DOT's and Land Grant Universities that have began an initiative to identify issues related to testing and deployment of CAVs extending beyond State lines.

Blackman proceeded by reviewing the NH DOT's CAV focus area in relation to federal guidance and the NH's focus on policy and planning, performance measures, long range transportation plans, infrastructure, traffic control strategies, data management & cybersecurity, and V2X. Lastly, he touched on the future of ITS and CAV, noting that there is a need and referred to the 37,461 lives lost on us highways in 2016 with 94% of the serious crashes due to human errors. He added that the need is also out there for the young, disabled and the elderly. Blackman also noted that the changing transportation environment has added an increased reliance on information and technology, customer needs and expectations, and financial resources. Blackman concluded by noting that light duty vehicles, shuttles, busses, light rail and freight will be used as possible CAV use cases.

### ***Long-Term Planning Implications of Connected and Autonomous Vehicles in NH – Nathan Miller***

Miller introduced himself and informed the TTAC that the reason he was doing this presentation was due to the fact that the Southern NH Planning Commission (SNHPC) incorporated CAV's into their Long-Range Transportation Plan (LRTP) and also identified the implications of long term planning of these CAV's in NH. He provided an overview of the key transportation plans in NH, noting which plans inform long range project development and which plans tie directly to programming of funding for project development. He added that NH's recent transportation plans and major capital investments have focused on capacity expansions to address growing congestion on major highways such as I-93, Everett Turnpike, Spaulding Turnpike, and I-293. Miller stated that for the 2045 horizon, there will be disruptors to the status quo due to the development and deployment of CAV's. In addition, millennials are moving away from private vehicle ownership and more towards rideshare services, the freight transportation industry is adapting to last mile delivery needs resulting from the continued growth of e-commerce and auto manufacturers are shifting their focus towards electric vehicle development.

Miller stated that driver behavior and error are contributing factors in more than 90% of the crashes nationwide. He noted that Geico Insurance would be the biggest sufferer if autonomous vehicles are implemented. He referred to the potential safety benefits of CAVs as they may aid in mitigating the human error issues. This would enable planners to better focus on safety improvement resources in areas with true infrastructure deficiencies. In addition to the safety benefits, there is also the potential capacity benefits in the long term due to the CAV's ability to travel at closer headways and reducing traditional volume capacity/ratios, optimization across the transportation network due to CAV's use of real time traffic data (weaving & lane changes will bring the platooning level down and VMT's would go up), and delayed or possible elimination of expensive capacity expansions.

Miller noted the potential special mobility benefits as CAVs could facilitate independent living for seniors and disabled. He added that traditional vehicles will remain on road for decades to come meaning that the infrastructure necessary to facilitate CAV use will be implemented incrementally over a long period of time. Miller noted that there are concerns of unequal distribution among potential users and issues related to Title VI and IT Systems compliance with Americans with Disabilities Act.

Miller stated the next Regional Long-Range Transportation Plans will have a horizon year of 2045. An incremental approach is likely to be outlined on how the infrastructure needs begin to be addressed in NH's transportation plans and programs:

- Near-Term (Now to 2025): Legislature Addresses Regulatory Issues, Improvements Scoped at Highest-Priority Locations
  - Legislature Addresses Regulatory Issues, Improvements Scoped/Implemented at Highest-Priority Locations
    - Near-Term Successes: Transit signal priority technology passed in NH, Adaptive signal control technology deployed at I-89, Exit 18, and forward motion on corridor-wide ITS deployment project for Everett Turnpike
- Medium-Term (2026-2035): Corridor-wide ITS Deployment Facilitates CAV Use in Primary (NHS) Corridors
  - Corridor-wide ITS Deployment Facilitates CAV Use in Primary (NHS) Corridors
- Long-Term (2035-3045): Corridor-wide ITS Deployment Facilitates CAV Use in Secondary State Highway Corridors
  - Corridor-wide ITS Deployment Facilitates CAV Use in Secondary State Highway Corridors

Miller concluded by noting the challenges in planning for CAV's and asked if there were any questions. Leedy asked how they see the whole program integrated with GIS and IT databases. Blackman said they have a GIS layer and they are managing this through NE Compass.

Vayo asked about the changing of significant traffic patterns and anticipated land use and economic impacts with this new transportation function and the character of the State. Miller said there would be a lot less need of traditional parking and to be able to reclaim it for different purposes. Miller noted that CAV vehicles have to be programmed for driving in snow and for navigation in garages and driveways (end of trip) and are not quite there yet. He added that urban planners are very excited for this.

Leedy stated that Amherst is in the early stages of implementing advisory shoulders; how are CAV's going to deal with this? There was also the aspect of maintenance requirements for CAV owners. There was further discussion on signals and support, vehicles with drivers that do have control of their CAV and interaction with CAV's that do not. Miller stated that mobility of service for a few decades will be preferred and it will be fleet

based to begin with for CAVs (ex. Uber, Lyft). He added that the price point will be pretty high for a period of time. Miller noted that work zones are another huge issue for CAVs and that nut has not been cracked yet. He added that Google is working on dealing with emergency vehicles now.

Marchant stated that the APA New Orleans conference, they had a CAV but it was a bus that did tours and that it was not for individuals. Fournier asked why there would be less parking and why would it be empty. Miller stated that less people would own a vehicle and it would be a zero-occupant vehicle for drive to pick up a person. He added that more people in vehicles is on its way, but there are going to be times when the CAV is empty. There was further discussion of the future of CAV's and how they will handle trips with more people and ride sharing.

#### **DC CIRCUIT COURT RULING ON OZONE STANDARDS/TIP AMENDMENT 4 IMPLICATIONS**

Lantos referred to the memo included in the agenda packet. He proceeded by informing the TTAC of the recent D.C. Circuit Court decision (South Coast Air Quality Management District vs. EPA) which may result in the re-installation of 1997 ozone standards, which would necessitate the conduct of conformity determinations for transportation plans and transportation improvement programs. He added that this has immediate implications for the STIP/TIP amendment recently approved by all the MPOs, but not yet given final approval by the federal agencies.

Lantos stated that NHDOT has identified a list of potentially non-exempted projects that are included in STIP/TIP Amendment 4. The preferred approach of receiving FHWA/FTA approval is to re-submit the project list, excluding the non-exempt projects. The MPO process would be to nullify the approved A4 and restart the amendment process with non-exempt projects removed. The only other option would be for the MPOs and NHDES to conduct air quality conformity determination to 1997 ozone standards. This cannot be done in a timely manner, as emissions budgets would have to be established and MPO traffic models quickly brought up to the 2045 future analysis year.

In the Nashua MPO area, the NHDOT has identified the following as potentially non-exempt projects that would have to be excluded from a re-submitted Amendment 4:

1. Merrimack 10136D: Widen 101A from Boston Post Rd. to Continental Blvd.
2. Nashua 10136B: Widen from Somerset Pkwy to Sunapee St & Blackstone Dr. to Celina Ave.
3. Hudson 41754: Construct southbound right turn lane on NH 3A to the Sagamore Bridge.

Lantos stated that NRPC has expressed its opinion to NHDOT that the Hudson project should be categorized as exempt as an intersection channelization project (E-51 code). He provided an example of a New York MPO TIP which displays a similar project with turn lane construction at several intersection approaches.

Levine noted that interagency will be talking about the projects in Amendment #4 and will be making determinations if the projects are exempt or nonexempt. He added that they are hoping for concurrence. Lantos said he had concerns with the minor changes in inflation. Chizmas suggested double checking the threshold. Levine stated that Federal agencies have to take action on this. He added that amendments and CMAQ are affected if this goes into effect. Lantos stated that if it goes through, we will nullify Amendment #4 and re-approve it with the nonexempt status. Levine said to follow the process in place regarding public comment periods and notices. Gowan asked if the Pelham project was ok. Lantos said yes and that they are exempt by definition. Gowan questioned if this holds where there is no roundabout yet. Chizmas said and alternatives analysis would have to be done.

Dhima asked for explanation on the Hudson project and how is this project different than the Rte. 102 lane to bridge project and reduction of traffic by 67%. He added that he has a lot of angry folks who voted to pass the

warrant article for dollars for this project. He asked if there needs to be someone there from DOT. Lantos commented that projects will go forward, and they will demonstrate conformity; everything is just delayed now. There was further discussion on the court case and how this came about.

### **METROPOLITAN TRANSPORTATION PLAN (MTP) UPDATE**

Lantos passed around a handout and informed the TTAC that he 6 projects were submitted for the MTP and next Ten Year Plan process.

#### **Nashua Bridge St/Canal St:**

Implement Complete Streets design program for a 4000 ft. length of Canal and Bridge Strs. from Railroad Square to the bridges.

##### **Nashua Taylors Falls & Veterans Mem. Bridges:**

Rehabilitation of the superstructures to prevent further deterioration.

##### **Nashua Kinsley St:**

Construct sidewalks and bike lane along the entire length of Kinsley St.

##### **Hudson Circumferential Highway:**

Construct new roadway with one-lane each direction from the Sagamore Bridge to Route 111.

##### **Brookline NH 13 / S. Main St.:**

Realignment of NH 13/S. Main St. intersection to address safety problems.

##### **Amherst Phase I B&M Multi Modal Path:**

Construct trail along B&M - Phase I from Baboosic Lake Rd to Thornton Ferry I Road.

Dhima commented that Nashua is spearheading the Taylor Falls/Veteran's Memorial Bridges project and Hudson is involved and are splitting the cost 50/50. Dhima commented that they want to get the ball rolling. Lantos continued reviewing the projects and asked for volunteers for the committee to review the projects. Chizmas, Leedy, Dhima and Gowan volunteered. Vayo asked about the implications of Circumferential Highway project. Dhima said the funding would come from Hudson and the State is handling the engineering and can use the ROW from the turnpike. Lantos commented that the project has always been there but listed as illustrative. Dhima added that the State would own the highway, but Hudson would maintain it. There was further discussion on the project.

Lantos stated that the accident database would be updated and NRPC would model a new base year with employment and land use data. He added that all projects need to be modeled and they will be. Leedy commented that the Circumferential Highway project would not happen in our lifetime and then asked if the 101A widening west of Joppa is coming off. Lantos thought it would remain illustrative. Chizmas commented that it was part of the widening that go paired down to improvements consistent with the corridor study.

### **CRITICAL URBAN FREIGHT CORRIDORS**

Lantos passed around a handout on Critical Freight Corridors which explained the requirements for designating Critical Urban Freight Corridors (CUFC) and Critical Rural Freight Corridors (CRFC). He noted that 75 miles have been allocated for CUFC's and 150 for CRFC's and \$4.5 million is available annually for the freight program for NH. Lantos stated that it is up to the MPO's to submit opinions and comments and are due June 30<sup>th</sup>. He added that he will put this together and have it available for the June TTAC for vote to submit to the Commission for final approval. He asked that comments be back to him before the June TTAC meeting.



**STAFF UPDATES**

Chizmas informed the TTAC that beginning on June 2, the City of Nashua will be bringing in a Bikeshare program. She added this is a pilot project for 4 months and will include 200 teal bikes and utilize a dock less system.

**ADJOURN**

Motion to adjourn came from Leedy with a second from Chizmas. The meeting ended at 1:37pm.