Autonomous Vehicle Environment
Agenda item requested October 2020

Commissioner questions and staff responses are provided below, as follow-up to the request for discussion of the autonomous vehicle environment as a future agenda topic for the Transportation Commission.

Staff have synthesized questions and provided responses, below.

Summary of questions and staff responses:

1) **What (if any) City of Ann Arbor regulations currently exist related to Autonomous Vehicles?**
   a. **Staff response:** None.

2) **What (if anything) could the City do to regulate Autonomous Vehicles in some way in the future? (e.g., testing licenses, insurance requirements)**
   a. **Staff response**: Nothing. The State has passed legislation related to connected and autonomous vehicles that pre-empts the City's ability to regulate such vehicles. City staff, including the legal department, are currently investigating if these rules pertain to autonomous delivery robots (aka ground drones) and whether or not the City has some ability to regulate these vehicles.

3) **Commissioner desire for information about the City's level of involvement or interaction with AV testing companies.**
   a. **Staff response:** The City plays a supportive role to public and private entities which wish to deploy connected devices on City infrastructure or operate connected and autonomous vehicles on City roadways. However, the City: has not made direct investments of its own in this space; does not control such devices; and does not have access to the data generated by them. Some examples of such deployments and the City's role are provided below:
      i. Ann Arbor Connected Vehicle Test Environment or AACVTE (https://aacvte.umtri.umich.edu/) – the University of Michigan has procured several grants to test connected vehicles and sensors using digital short range communication (DSRC). About 70 intersections in the community and over 2,500 vehicles were equipped with devices. The City's role was to assist with installation of the devices at intersections and provide network connectivity to the University. These costs were paid by the grant
      ii. A2Go (https://maymobility.com/a2go-autonomous-vehicle-shuttle-service-coming-to-ann-arbor-in-october/) – May Mobility has worked with SPARK and other partners for an autonomous shuttle service in a defined area downtown and adjacent to central campus. The service is expected to launch in the fall. The City's role is coordination and staff attends regular meetings of the pilot.
      iii. Cavnue (https://cavnue.com/) – last fall, the Governor announced a partnership between the State and a Google subsidiary known as Cavnue. The project is in the feasibility analysis stage to inform the development of a "first-of-its-kind connected corridor" between Detroit and Ann Arbor to improve safety, congestion, accessibility, and other benefits. Similar to A2Go, the City's role is coordination and staff attends regular meetings of the project.

Complete Commissioner questions as submitted:

First, regarding testing of prototype AVs (Stages 4 & 5):

- Does A2 have any ordinances on the books currently regarding fully autonomous vehicles (e.g. hands on wheel requirements)?
- To what extent does A2 have authority to regulate AVs and operators of AVs (given by State or Fed)?
- Could A2 create an AV testing "license" for entities interested in testing beyond, say, Stage 3?
- Does A2 have a complete picture of who is testing AVs in the city? Has A2 established a relationship with them in any way?
- If the city is allowed to regulate who can test AVs in the city (and decides to do so), what criteria could be used to decide? Private/public? Cap on number of vehicles? Current demonstrated capabilities? Safety record? Vehicles meet a list of req'd attributes (kill switches, ped detection, etc)? Requirements on operators (operator must be present, training req'ts, no sitting in backseat, etc)?
- Should AV testing entities have unique requirements on their insurance coverage in order to operate in the city? And make it clear to the city what their coverages are in the event of a crash or other incident while in autonomous mode?
- Is it worth there being public engagement about residents' appetite for allowing different levels of AV testing in the city?
- Have or should AV developers be required to provide justification for testing on city streets as opposed to MCity or ACM Smart City Testing Center in Ypsi?

Next, regarding operation of vehicles with some AV capability (up through Stage 3) by 'ordinary' drivers:

- Some production vehicles (Cadillac, Tesla, Ford, Mercedes-Benz, etc) already have partial-AV capability. Should the city regulate how/when it is used in the motor vehicle code? For example, driver must be in the drivers' seat at all times; alert; the driver is still the driver and must obey licensing and sobriety etc laws?
- Stage 4 and 5 are in the future, so to what extent should the city get ahead of the technology? Driverless cars/shuttles (Stage 5) will likely be available someday for purchase.

Again, thanks so much for taking an interest in this topic. My concern stems from this article, where claims are made including, "Unlike cities such as Moscow and Tel Aviv, where Yandex also tests, Michigan allows self-driving cars to operate without an engineer behind the wheel, and Yandex is already taking advantage of that," and, "the company released a video of one of its self-driving test Priuses driving around Ann Arbor for an hour with no human intervention (that we can see) and *no human in the driver's seat at all*." These quotes raise real concerns for me, and I wonder what the response from our residents would be if one of these AVs (whether a test vehicle or privately-owned) injures or kills someone in a crash. I think we need to get out ahead of this (if we haven't already) and discuss it in public forums like Transportation Commission and possibly send a resolution(s) to Council someday.