TORONTO PLANNING REVIEW PANEL

Summary of Advice from the Toronto Planning Review Panel Meeting held November 3, 2018

Executive Summary

The Planning Review Panel is a representative group of 32 randomly selected Torontonians that help the City Planning Division guide growth and change in Toronto. They have been asked by the Chief Planner to work together over the course of two years to provide City Planning with informed public input on major planning initiatives. Members are tasked, in particular, with helping to ensure that these initiatives are aligned with the values and priorities of all Torontonians.

Automated Vehicles in Toronto: Panelist Reflections and Recommendations

The Automated Vehicles (AV) team of the Transportation Services Division visited the Panel to present a set of draft directional statements and goals, which will form the basis of a tactical plan on AVs for the City of Toronto. The AV team wanted the Panel's input as to whether these draft statements and goals sufficiently address the opportunities and issues raised by the imminent introduction of AV technology in the City of Toronto.

Most Panelists agreed that the draft directional statements and goals are broadly appropriate, but they proposed several additions and clarifications related to some of the goals and statements:

- Panelists suggested that the economic development statement should address the need to ensure Toronto's local economy benefits from the introduction of AV technology. Panelists suggested the City support local businesses and sectors to participate in this emerging sector, and that the tactical plan include a strategy that ensures that the benefits and profits are not mostly captured by foreign companies;

- Panelists suggested that the economic development statement and/or public sector vehicle statement address the economic disruption of AVs, specifically on workers in the transportation sector. Panelists emphasized the importance of preparing workers and the public for this transition;

- Panelists emphasized that the City's goal for road safety should be to leverage AVs to eliminate traffic injuries and fatalities, not just reduce them;

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- Panelists were concerned about personal safety while using AVs, which they felt should be addressed somewhere in the tactical plan. Some suggested that the City consider having human attendants present in public transit AVs when first introduced to help riders feel safer, both to protect against possible dangers posed by other riders, and also to serve as a fail-safe in case of technological failure;

- Panelists felt that the privacy and security section should emphasize high privacy standards. Some specifically suggested that the data be held by a public entity, and that its use be strongly regulated. Panelists also thought that the tactical plan should acknowledge and prepare to mitigate the possible negative impacts of data collection on marginalized communities, even at the aggregate level;

- Panelists felt that the modal shift statement is unclear, and that it should more clearly emphasize a commitment to encouraging Torontonians to use active transportation and public transit. Panelists also suggested the tactical plan clearly state commitments to zero-emission forms of transportation.

Detailed Summary

Shagithya Deivendran and Steven Coutts from the Automated Vehicles (AV) project team of the Transportation Services Division at the City of Toronto visited the Panel to get feedback on a draft tactical plan on AVs in Toronto. The City of Toronto has struck an inter-divisional working group to begin to prepare for the introduction of AV technology in Toronto. The tactical plan will address how the City should prepare for and influence the introduction of AVs.

The AV team began by delivering an "AV 101" presentation which explained what AV technology is and the five different levels of automation that a vehicle can have. Shagithya discussed possible benefits of AVs, as well as how they might be introduced in Toronto. She ended with an explanation of the current status of AVs in Toronto, and provided an overview of the structure of the tactical plan. The Panel then had a question and answer session about AVs, and the technology's potentially disruptive impact on transportation and planning in Toronto.

Next, Shagithya introduced the substance of the AV team's draft tactical plan. The AV team has drafted 10 directional statements which set out how the City should respond to AVs and use AVs to advance other City objectives. Each statement has several associated goals which lay out the specifics of how the City wants to achieve the 10 statements. The AV team sought the Panel's help in identifying whether their 10 statements and associated goals sufficiently address the opportunities and issues presented by AVs for Toronto.

Discussion

The Panelists split into four groups, and discussed each of the 10 statements and associated goals. They rated how satisfied they were with each one, and if needed, suggested recommendations for improving the statements and goals.

The following table summarizes the ratings and recommendations of all four groups.

Thematic Statements and Goals	Rating (4 Groups)	Recommendations from 4 Groups
Equity: *Encourage AVs in a way that improves social equity and health* • Equal access to mobility regardless of age, ability, income level, or other factors • Equitable service levels to all neighbourhoods for all trip types • Infrastructure projects to incorporate community benefits	Good: 3/4 Needs work: 1/4 Poor: 0/4	• Prioritize the development of a public AV fleet, rather than only private for-profit companies; • Consider introducing a subsidized zero-emission autonomous vehicle car-sharing program to promote equal access; • Ensure equal access to the opportunities created by AV technology (such as through profit-sharing); • Ensure AVs are accessible to everyone regardless of physical ability.
Environmental impacts: *Encourage AVs in a way that increases the number of low- or zero-emission vehicles on streets and highways* • Low- or zero-carbon energy sources in fleet and private automated vehicles • Minimize waste generated from vehicle upgrades and automated fleets	Good: 3/4 Needs work: 1/4 Poor: 0/4	• Reuse and recycle the parts and technology from older cars, whenever possible; • Ensure a responsible transition to new technology; • Follow guidelines from the Zero-Emission Vehicle Alliance; • Ensure switch to AVs has a net benefit on carbon emissions, and does not put more cars on the road; • Ensure all AVs are electric, and specifically electrify truck fleets.

Thematic Statements and Goals	Rating (4 Groups)	Recommendations from 4 Groups
Road safety: Encourage AVs that are proven to create a net benefit to road safety • Reduce traffic-related injuries and deaths from automated vehicles • Transportation infrastructure to facilitate the use of AVs • City's emergency services should be equipped to address the needs of AVs; and utilize this technology to receive priority in traffic for emergency response	Good: 1/4 Needs work: 3/4 Poor: 0/4	• Work to eliminate traffic injuries and deaths rather than just reduce them; • Emphasize safety of pedestrians, cyclists, children, and disabled people; • Ensure the safety of people using city-operated AVs when there are no human operators present; • Consider having a human attendant, at least in the beginning; • Ensure weather-related safety precautions are prioritized; • Provide mechanisms for enforcement of safety precautions; • Simplify traffic interactions to make driving more predictable for AVs, and thus safer (Eg: more roundabouts); • Ensure tech is kept up to date to avoid malfunctions in systems like GPS.

Thematic Statements and Goals	Rating (4 Groups)	Recommendations from 4 Groups
Modal shift: Encourage AVs that promote more space-efficient and active modes of travel; and facilitate transportation demand management • Travel within cities should be by more space-efficient modes • Less demand across the transportation system	Good: 1/4 Needs work: 2/4 Poor: 1/4	• Write this objective more clearly to state it is about encouraging modal shifts among the public; • Be more clear about what modes are going to be prioritized. • Be clear that AVs should not encourage more use of vehicles over transit; • Encourage more ride-sharing; • Ensure city by-laws and policies are updated; • Design policies that encourage innovation in mobility.
Transit-centric: Encourage automation in public and mass transit vehicles to improve reliability, efficiency, safety and seamlessness. Encourage AVs that facilitate increased transit priority. • Transit system to be more reliable and efficient • Transit system should be safer for operators, customers, and other road users • Transit system to be seamless for the user	Good: 1/4 Needs work: 3/4 Poor: 0/4	• Communicate clearly with the public about how AVs interact with the transit system, and how they can potentially improve it; • Prepare for disruptive potential of personalized ride services; • Ensure fares remain affordable despite introduction of new technology; • Add specificity about how "seamlessness" will be achieved (re: first and last mile).

Thematic Statements and Goals	Rating (4 Groups)	Recommendations from 4 Groups
Traffic management: Enhance the City's ability to manage traffic in real-time through AVs, with the purpose of measuring traffic congestion, providing better traveller information, implementing active traffic management, managing the use of the curb, and increasing capacity on roads. • Better manage vehicular traffic in real-time • Better manage curbside space • Better manage traffic impacts from goods movement • Increase the capacity of our existing transportation infrastructure	Good: 4/4 Needs work: 0/4 Poor: 0/4	• Find ways to encourage carsharing.

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Thematic Statements and Goals	Rating (4 Groups)	Recommendations from 4 Groups
Public service vehicles: Encourage automation in municipal and other public service vehicles for improved safety and public service delivery. • Public service vehicles should be more effective, and cause less traffic-related injuries and deaths • Existing City services should be improved, and new ones created through AVs	Good: 3/4 Needs work: 1/4 Poor: 0/4	• Address job loss and workforce retraining. Educate and prepare public for this transition; • Consider ongoing involvement of human monitors or operators as a safety measure and to increase rider confidence.
Economic development: Support and enhance sectors related to AVs, with a focus on attracting industries, investment, and employment; and exporting products and services • Retain and attract investment in sectors related to AVs • Smooth transition in the workforce to meet future needs • Become recognized leader in sectors related to AVs	Good: 0/4 Needs work: 3/4 Poor: 1/4	• Set policies to ease disruption on certain employees and sectors. For example, priority retraining and hiring for impacted workers; • Support Canadian AV businesses and support development of a local AV innovation cluster (which also prevents brain drain);

Thematic Statements and Goals	Rating (4 Groups)	Recommendations from 4 Groups
Privacy and security: Support and enhance data privacy and transportation network security, with a focus on the collection and use of information from automated vehicles • Mechanism in place to protect the privacy of transportation system users and their data • Operate AVs in a secure environment	Good: 2/4 Needs work: 2/4 Poor: 0/4	• Ensure data collected isn't proprietary, and is controlled by a public entity; • Collect data for public interest, and ensure it is de-identified (not linked to individual people); • Consider and mitigate potential harm of data collection on marginalized populations; • Mitigate dangers of aggregate level data collection; • Determine whether or not, or in which cases, personal data could be shared with law enforcement; • Update city policies and legislation to be strict and specific about data collection, use, and sharing. Consider Europe's GDPR as an example; • Have a specific policy around sharing data with third parties; • Prepare public education and communication around privacy and security of this data; • Provide local storage for data; • Protect against hijacking of systems and outside interference.

Thematic Statements and Goals	Rating (4 Groups)	Recommendations from 4 Groups
Business intelligence: Improve the City's ability to collect and analyze data generated by AVs, and use this data to inform how this plan will be implemented and evaluated to enhance City service delivery • Mechanism to collect data • Tools to manage data • Indicators to monitor impact on business operations	Good: 3/4 Needs work: 1/4 Poor: 0/4	• Ensure public can opt-out of participation in this data collection; • Ensure data collected is anonymized; • Provide mechanisms for public feedback on systems; • Ensure that all networks and storage systems for data in both the private and public sectors are upgraded; • Ensure privacy between public and private sector data.

In plenary following their table discussions, Panelists emphasized a few subjects as being especially important:

• Panelists thought it was important to mitigate the impacts on employment of a transition to AV technology, and that Toronto's local economy benefits from the emergence of this new sector;

• Panelists believed that AVs should be used to facilitate a shift to a low-carbon transportation system and should not encourage people to take private cars more often;

• Panelists felt that protecting privacy is extremely important, and that special care should be paid to the possible impacts of data collection on marginalized communities;

• Panelists want the City to ensure the safety of people using AVs, particularly in public transit scenarios when human operators may not need to be present. They felt that there should still be a human present to help riders feel safer, in

case of both a technological failure or an issue that arises between passengers. Panelists noted that while there are solutions like surveillance technology, this has impacts on privacy;

- Panelists thought it was important to ensure that AVs can be accessed by everyone, regardless of income or ability.