

# PRELIMINARY RESULTS REPORT

Prepared by the Greater Buffalo Niagara Regional Transportation Council

October 2019

# OUR *DRIVERLESS* FUTURES

## COMMUNITY FORUM ON AUTOMATED MOBILITY

**August 3rd, 2019**  
**Buffalo, NY**

Event Organizers:



## Background

The Greater Buffalo Niagara Regional Transportation Council (GBNRTC) and its member agencies hosted a community forum about driverless vehicles on Saturday, August 3, 2019 at the University of Buffalo's Hayes Hall. This was part of a [series of forums](#) around the world organized by Arizona State University's Consortium for Science, Policy & Outcomes (CSPO) and the Paris-based Missions Publiques to bring public perspectives into ongoing discussions around automated vehicle (AV) development and regulation.

The day-long forum brought together 97 members of the general public. These individuals were non-experts with varying levels of familiarity with automated technologies. The input from this forum will be shared with local, national and international transportation planners to help inform future policies and projects.

GBNRTC is Erie and Niagara County's Metropolitan Planning Organization (MPO), which is a cooperative association of area governments and agencies working together to make decisions on the future of transportation in Buffalo Niagara. GBNRTC's [Moving Forward 2050](#) long-range transportation plan aims to advance AVs in the Buffalo Niagara region in ways that benefit our residents in terms of mobility and safety, and to attract visitors and new investment.

Arizona State University's CSPO is part of the Expert Citizen Assessment of Science & Technology network of organizations focused on using deliberative decision-making to support more informed, inclusive, and desirable policy outcomes. In the past this network has done projects with many different partners including NASA, NOAA, and the Department of Energy. This current project, "Our Driverless Futures" is part of an international project coordinated by the French organization Missions Publiques. The project aims to learn about citizens' hopes, dreams, and fears about automated mobility. In total, forums were held in 18 cities across nine different countries in North America, Europe, and Asia.

- Austria
- Canada
- Croatia
- France
- Germany
- Netherlands
- Portugal
- UK
- USA
- Singapore



Arizona State University

CSPO has been working on this project since 2017. They have engaged with experts from local and national governments, industry, and philanthropies to design this forum, including hosting a design workshop in early 2019. Support for the project comes from:

*Steering Committee*

Consortium for Science, Policy & Outcomes; Missions Publiques; Charles Koch Institute; Museum of Science, Boston; Kikim Media and Sloan Foundation

*Strategic Partners*

American Public Transportation Association; US Federal Highway Administration; Partners for Automated Vehicle Education; Keolis; Disability Rights Education and Defense Fund

*Expert Committee*

Marjory Blumenthal, RAND Corporation; Tom Cohen, University College London; Lee Rainie, Pew Research; Corbin Davis, US FHWA; Steven Shladover, California PATH, Berkeley

*Local Partners*

Greater Buffalo Niagara Regional Transportation Council; Museum of Science, Boston; University of Maryland; ASU Center for Smart Cities and Regions; Maricopa Association of Governments; City of Tempe; Valley Metro; City of Chandler; City of Montreal

## **Forum Overview**

The forum consisted of six sessions (see agenda below), each addressing various topics about automated mobility. Forum participants were seated at tables with approximately 7-8 other participants and a trained facilitator, for a total of 13 groups. Short videos produced by Mission Publique introduced concepts before each session.

During the sessions participants completed individual and group worksheets, which were anonymized with a unique ID number. Trained data entry volunteers simultaneously entered data from these worksheets to show some results to participants at end of the day. To encourage a broad range of attendees, the global AV Forum organizers provided \$100 stipends to participants. During the lunch break participants had the opportunity to view the automated Olli shuttle currently being tested on the University of Buffalo's north campus.

## *Agenda*

9:30am – 10:00am	Participant Check-In
10:00am – 10:20am	Welcome
10:20am – 10:30am	Session 0 - Introduction
10:30am – 11:10am	Session 1 – My Transportation Routine Today (video intro)
11:10am – 12:25pm	Session 2 – Automated Systems, Trust and Confidence (video intro)
12:25pm – 1:10pm	Lunch, View Olli AV shuttle, Group Photo
1:10pm – 2:25pm	Session 3 – Future Automated Transportation Scenarios (video intro)
2:25pm – 3:10pm	Session 4 – Who Decides? (video intro)
3:10pm – 3:20pm	Break
3:20pm – 4:20pm	Session 5 – Local Session
4:20pm – 4:30pm	Session 6 - Evaluation
4:30pm	Wrap Up, Final Survey and Evaluation

## *Participants*

There were a total of 96 participants. Recruitment efforts included social media posts, Craigslist ads, a *Challenger* newspaper ad, flyers in libraries across Erie and Niagara counties and in community centers, and outreach to block clubs in the City of Buffalo. Out of over 250 applicants, 100 were selected to reflect diverse viewpoints and experiences. Below provides a snapshot of participants (information is self-reported via online registration):

### AGE

- Under age 30: 12
- Over 65: 15

### GENDER

- Female: 46
- Male: 50

### RESIDENCE

- Rural area: 7
- Suburban: 36
- Urban: 53

### RACE/ETHNICITY

- Asian: 3
- Black: 22
- Latino/Hispanic: 4
- Mixed race: 8
- White: 55
- Other: 4

### EDUCATION

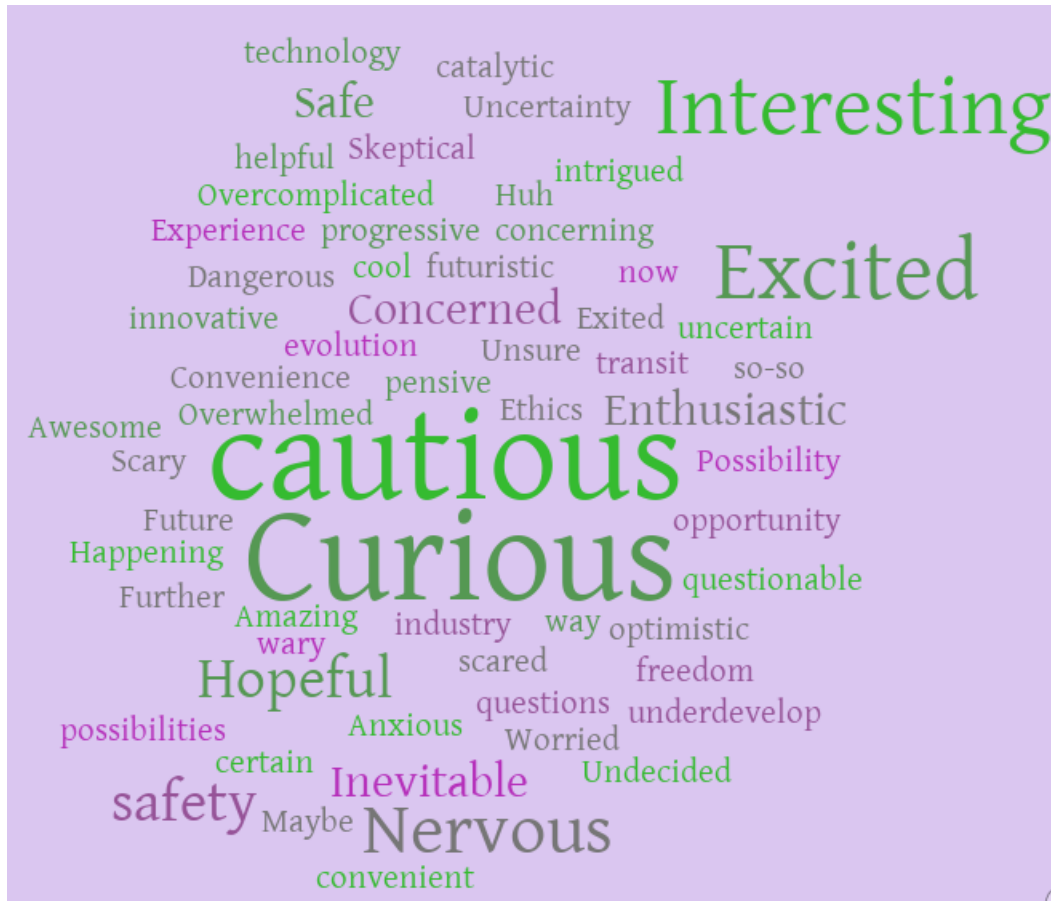
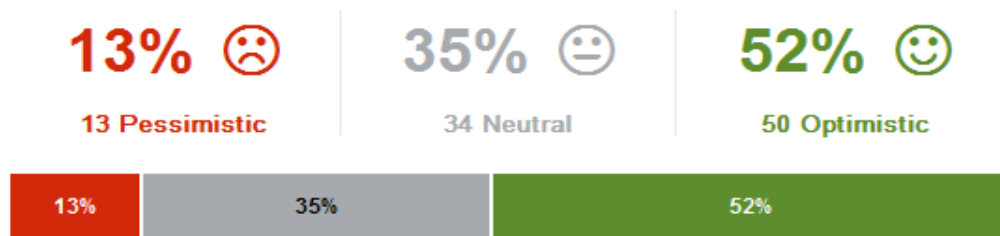
- Bachelor degree: 30
- High School: 20
- Master's degree: 21
- PhD: 6
- Vocational training: 11
- Other: 8

## Results

### Session 0: Welcome and Introductions

At the start of the the forum, participants were asked how they feel about automated vehicles, and to provide one word that describes their feelings (Fig. 1).

Figure 1



### **Session 1: My Transportation Routine Today**

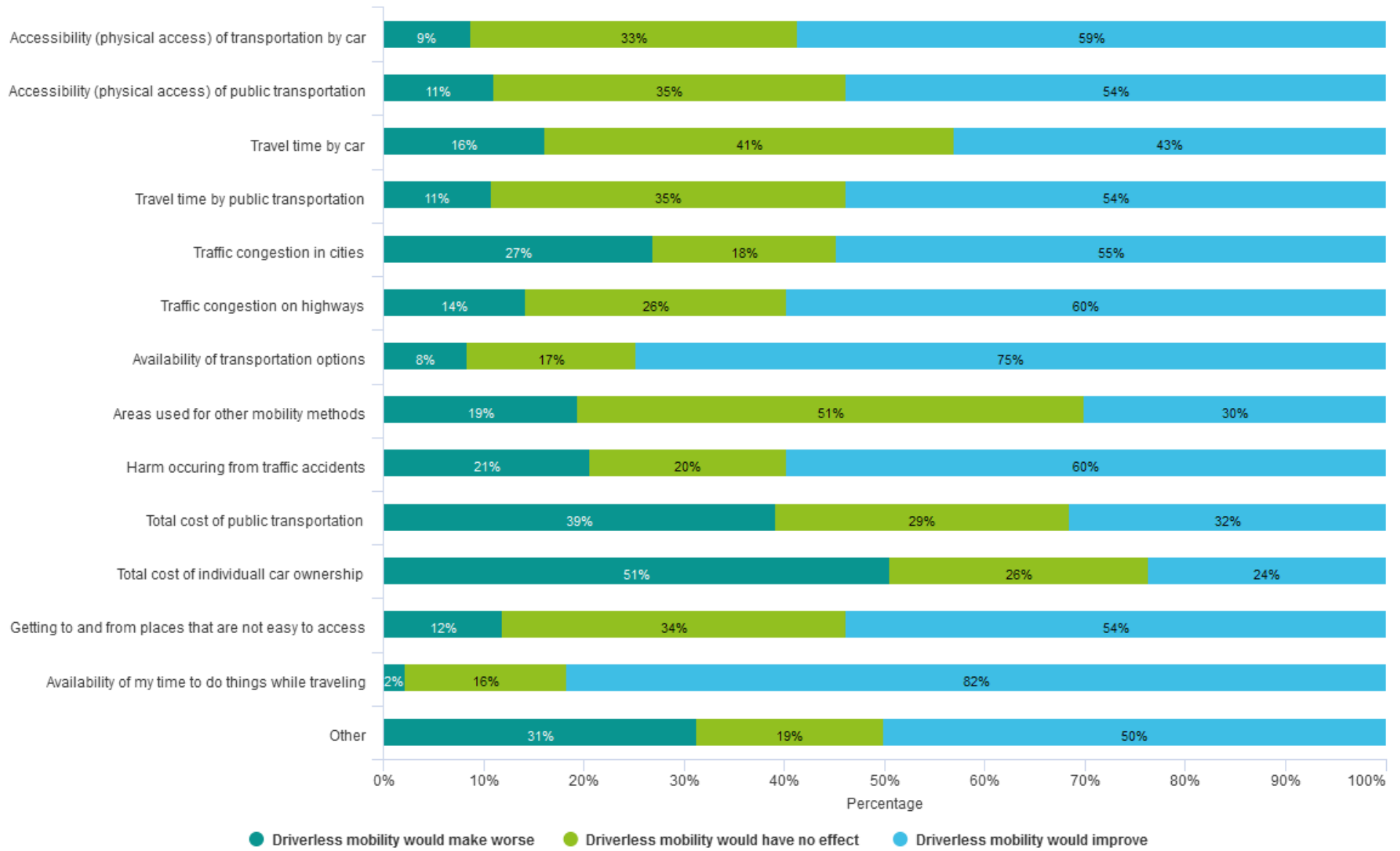
As a group, participants were asked to decide on the top three transportation issues they think driverless mobility might make better, and the top three transportation issues that driverless mobility might make worse. Table 1 shows some of the most common responses (in no particular order).

Participants were then asked to individually think about the effects driverless mobility would have on their own transportation experiences (Fig. 2).

*Table 1*

<b>AVs Make Better</b>	<b>AVs Make Worse</b>
lower transportation costs	safety
availability of transportation options	safety when humans and driverless vehicles are on road together
time saved	physical space used on streets
accessibility	safety (pedestrians, hackability, over reliance on technology)
safety	safety--premature adoption
more reliable scheduling/ bus routes	affordability
improve the environment (with less vehicles on road)	data security and collection
availability of transportation options	traffic congestion
direction confusion	weather
accessibility for all	
access community resources for the handicap	

Figure 2





**Session 2: Automated Systems, Trust and Confidence**

After viewing a short video and looking at the [Society of Automotive Engineers levels of automation](#), participants were asked to rate their level of comfort for each automation level. Most people felt comfortable at level 2, but less comfortable at higher levels of automation (Fig. 3). Participants were then asked their opinions about where to test driverless vehicles (Fig. 4).

Figure 3

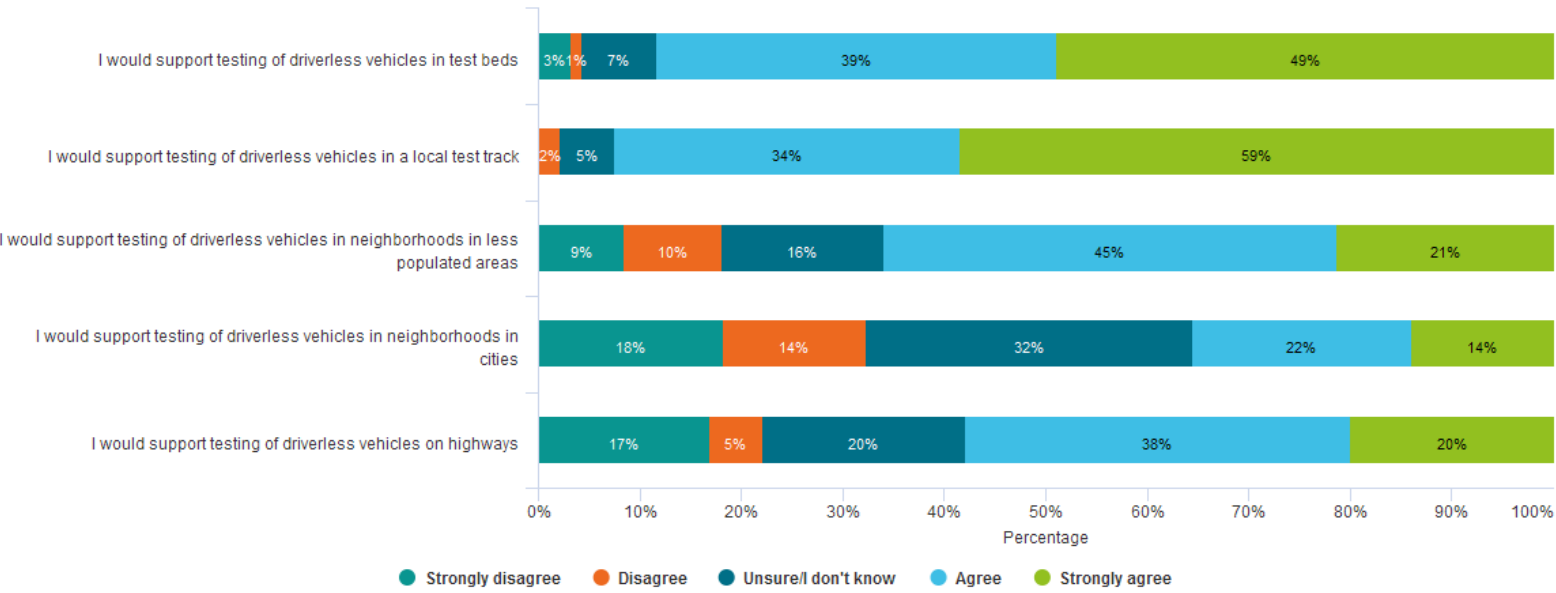
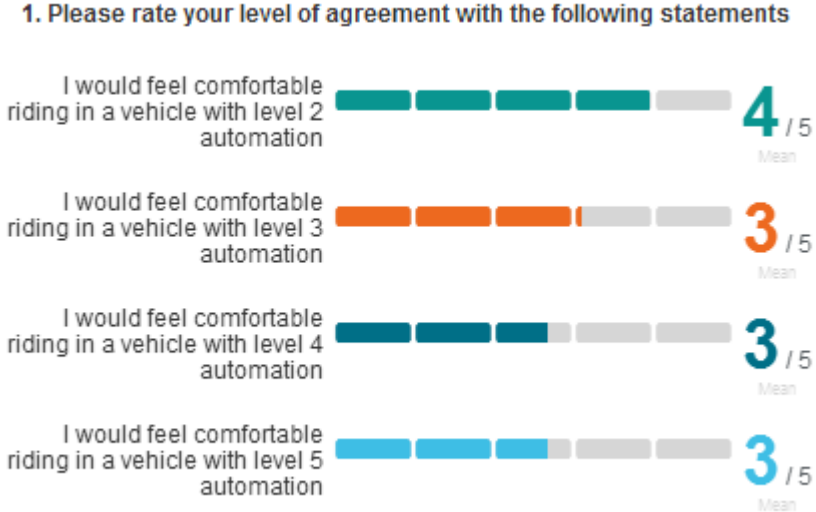


Figure 4

Session 2 also included discussions about how participants feel about the use of their data, about who they trust with their data, and about data sharing. Participants were then asked about their individual level of agreement with several data management scenarios (Fig. 5).

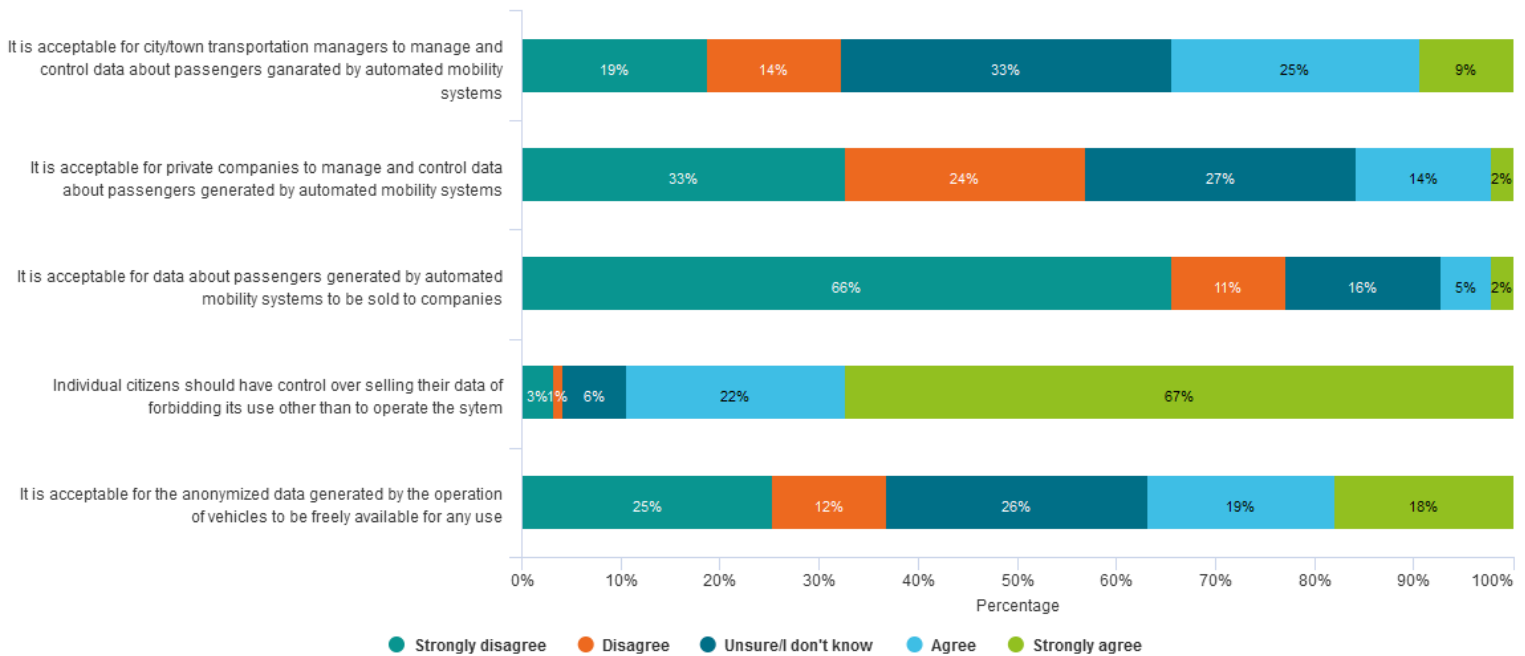


Figure 5

### Session 3: Future Automated Transportation Scenarios

After discussing four potential scenarios involving the future of driverless mobility, groups were asked to state their preferred future scenario among the following (note that several groups combined scenarios, Fig 6):

- **Maintaining and Improving the Current System:** vehicles would not be automated beyond level 2 automation. Rather than developing infrastructure for driverless mobility systems, public resources in cities and rural areas would be used to maintain and improve the current transportation system.
- **Ride-share Model:** companies would operate fleets of driverless vehicles with a variety of vehicle choices that individuals could use
- **Individual Ownership:** individually-owned driverless vehicles would replace individually-owned traditional cars
- **Public Transportation Model:** automated public transportation, including automated buses and trains, would be the main way of getting around in dense areas

Participants were then asked to identify their individually preferred scenario (Fig. 7).

Figure 6

Individual Ownership + Public Transportation Model	2 groups
Public Transportation Model	4 groups
Ride Share Model + Public Transportation Model	3 groups

17

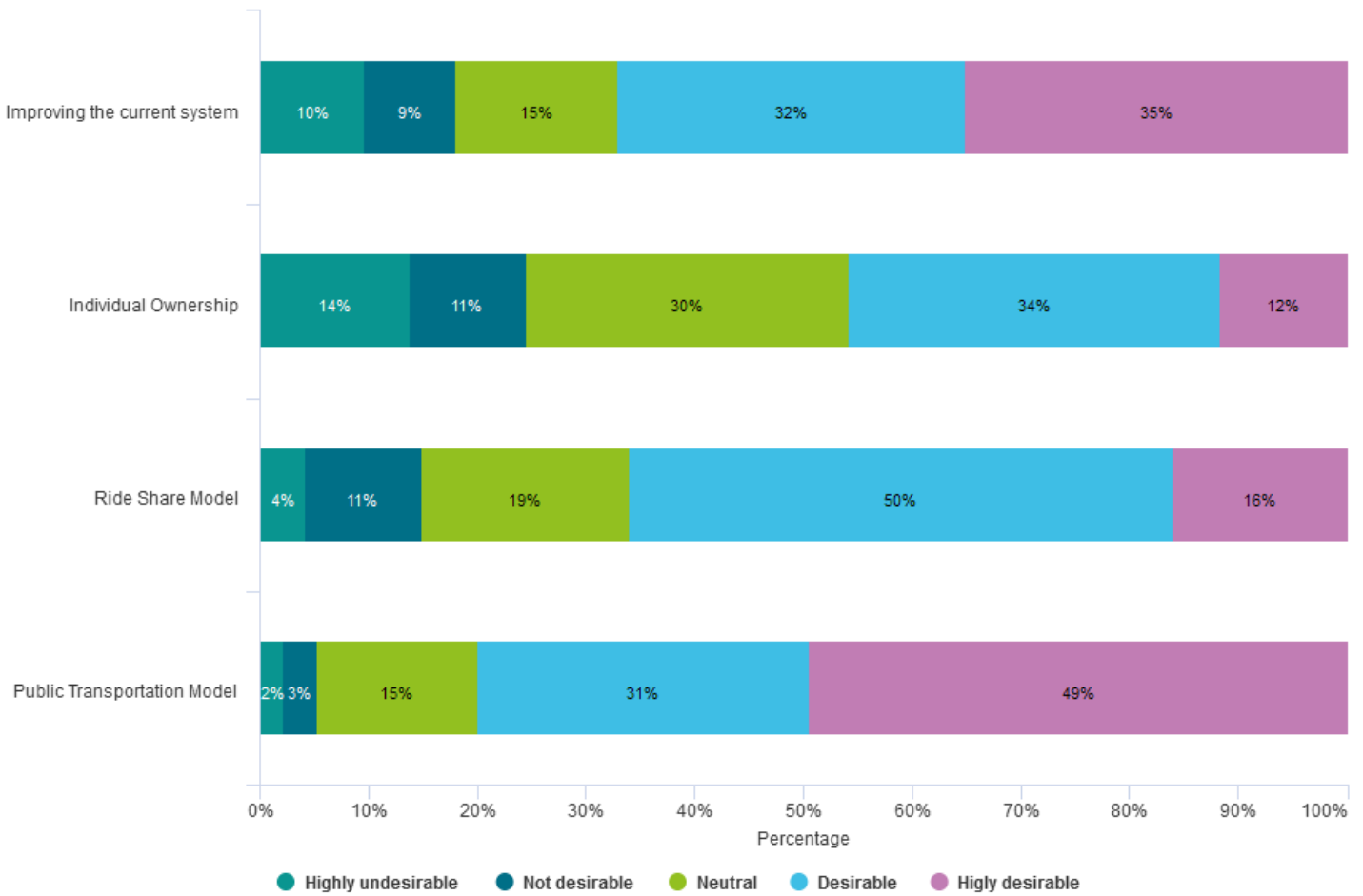


Figure 7

**Session 4: Who Decides?**

In this session, participants learned about different decision makers that could be involved in the governance of driverless mobility. They then looked at different issues relevant to driverless mobility: privacy protection, maintaining infrastructure, justice and equity, cybersecurity, safety, and the environment. Participants then indicated which decision makers they individually trust to address each issue (Fig. 8-13). They were also asked to rank the importance of each issue (Fig. 14).

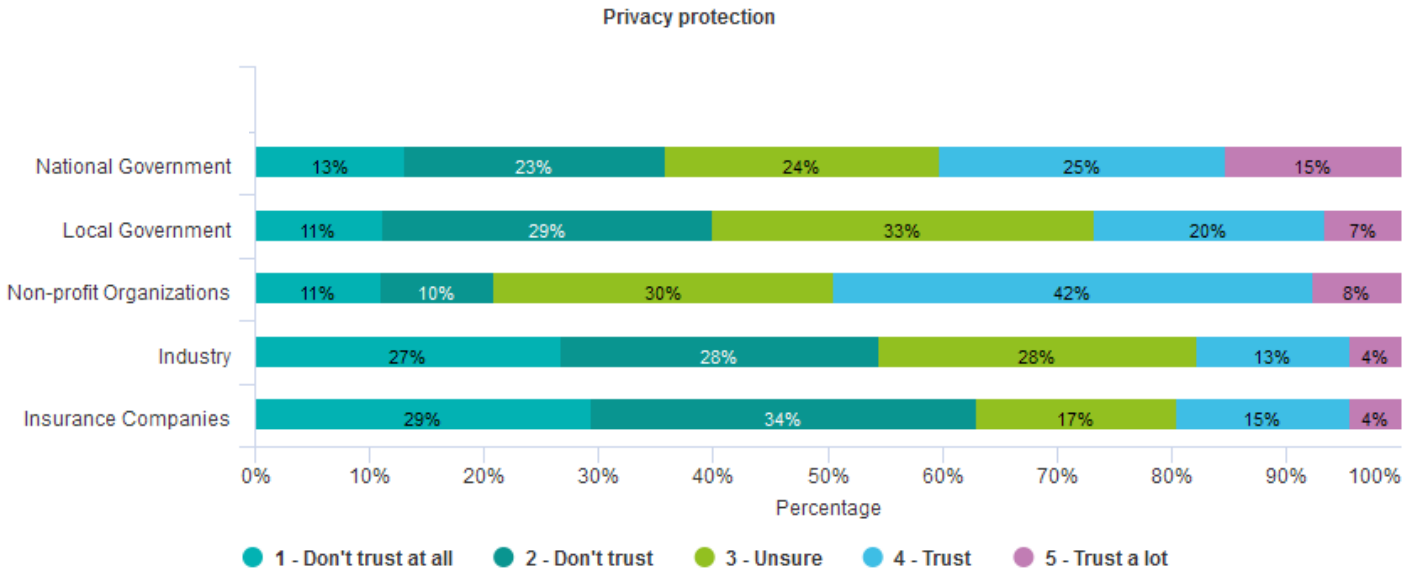


Figure 8

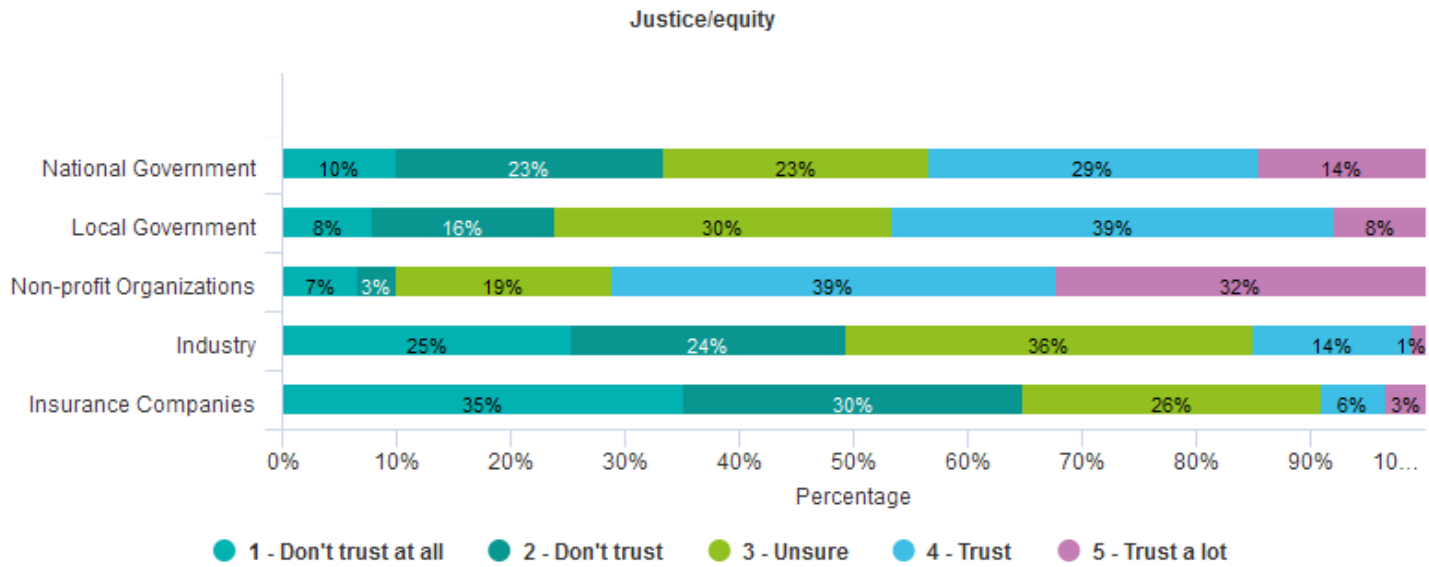


Figure 9

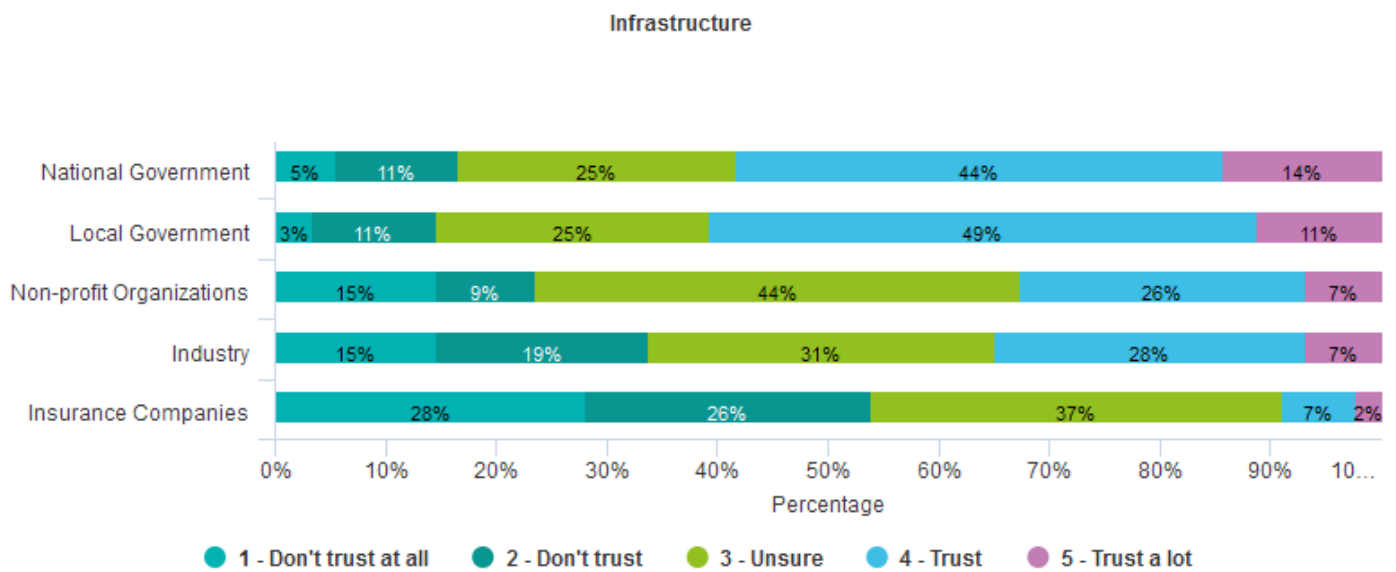


Figure 10

### Cybersecurity

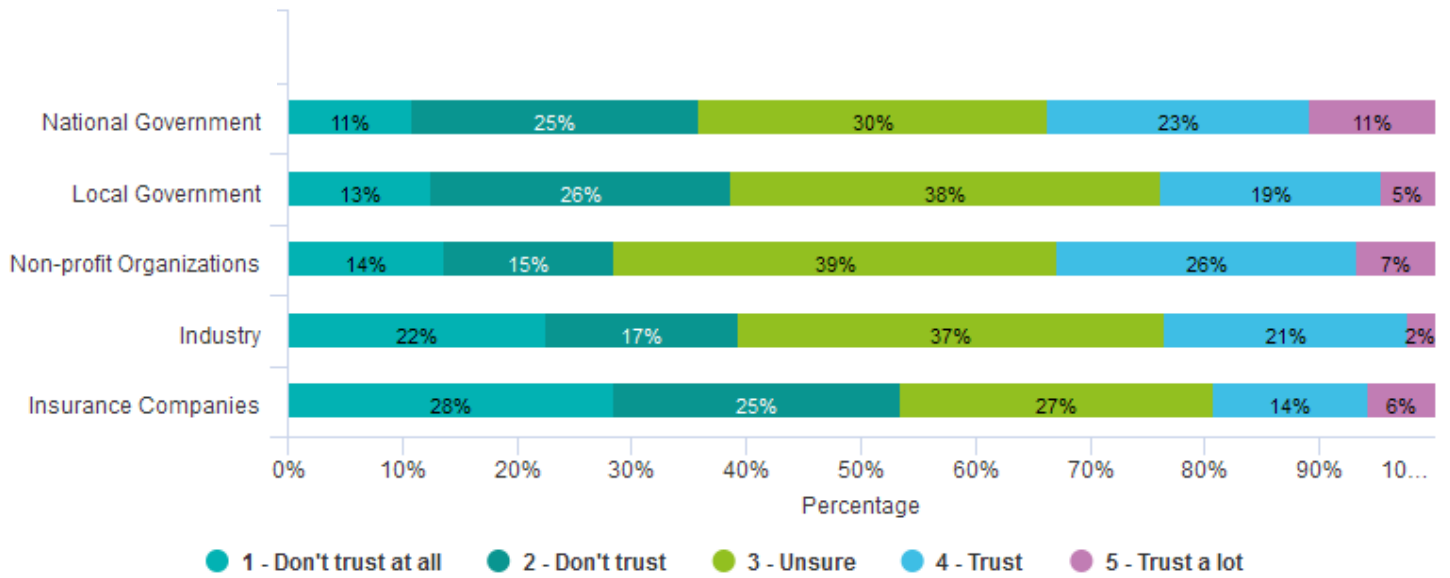


Figure 11

### Safety

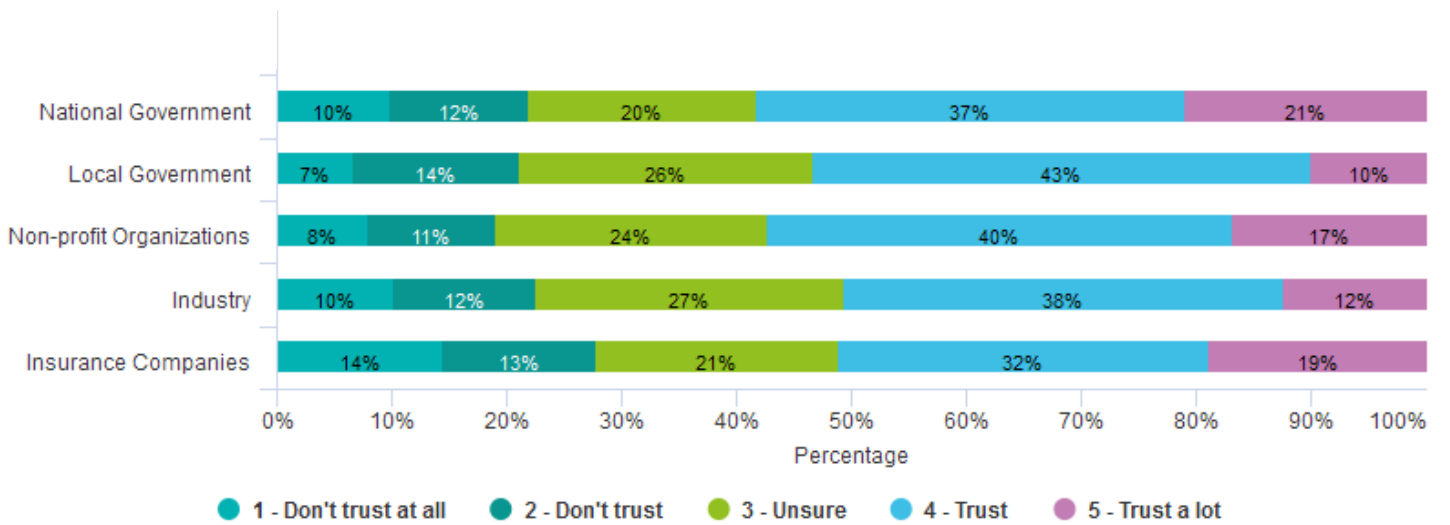


Figure 12

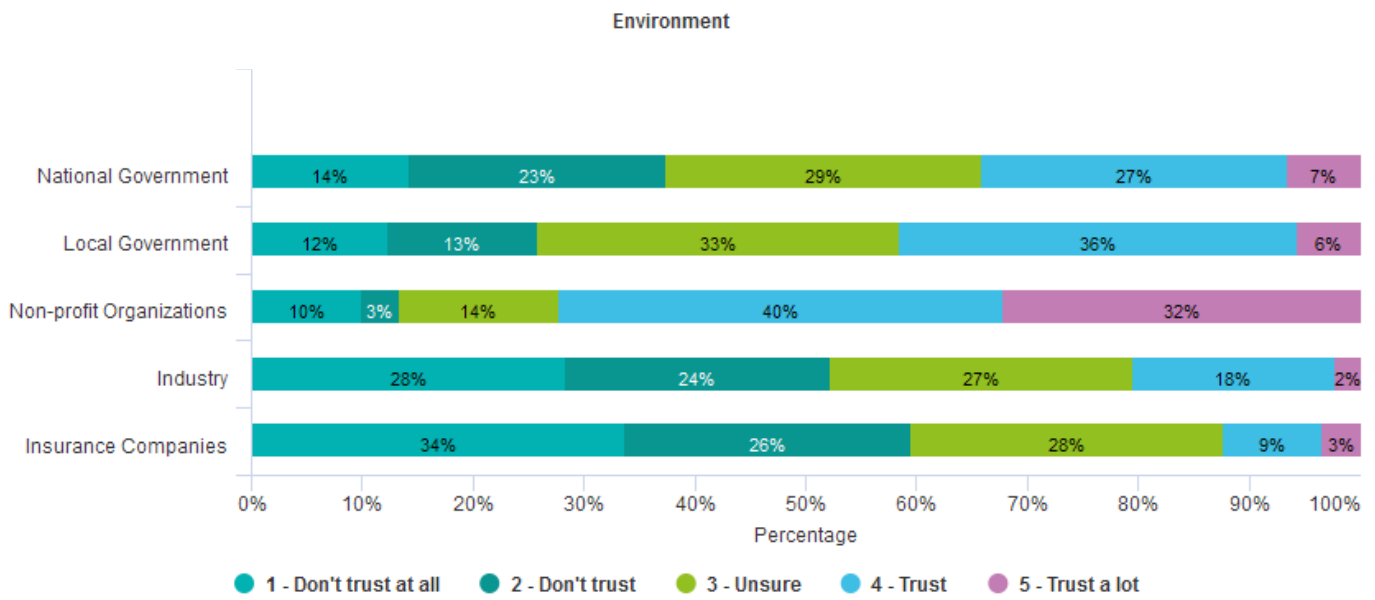


Figure 13

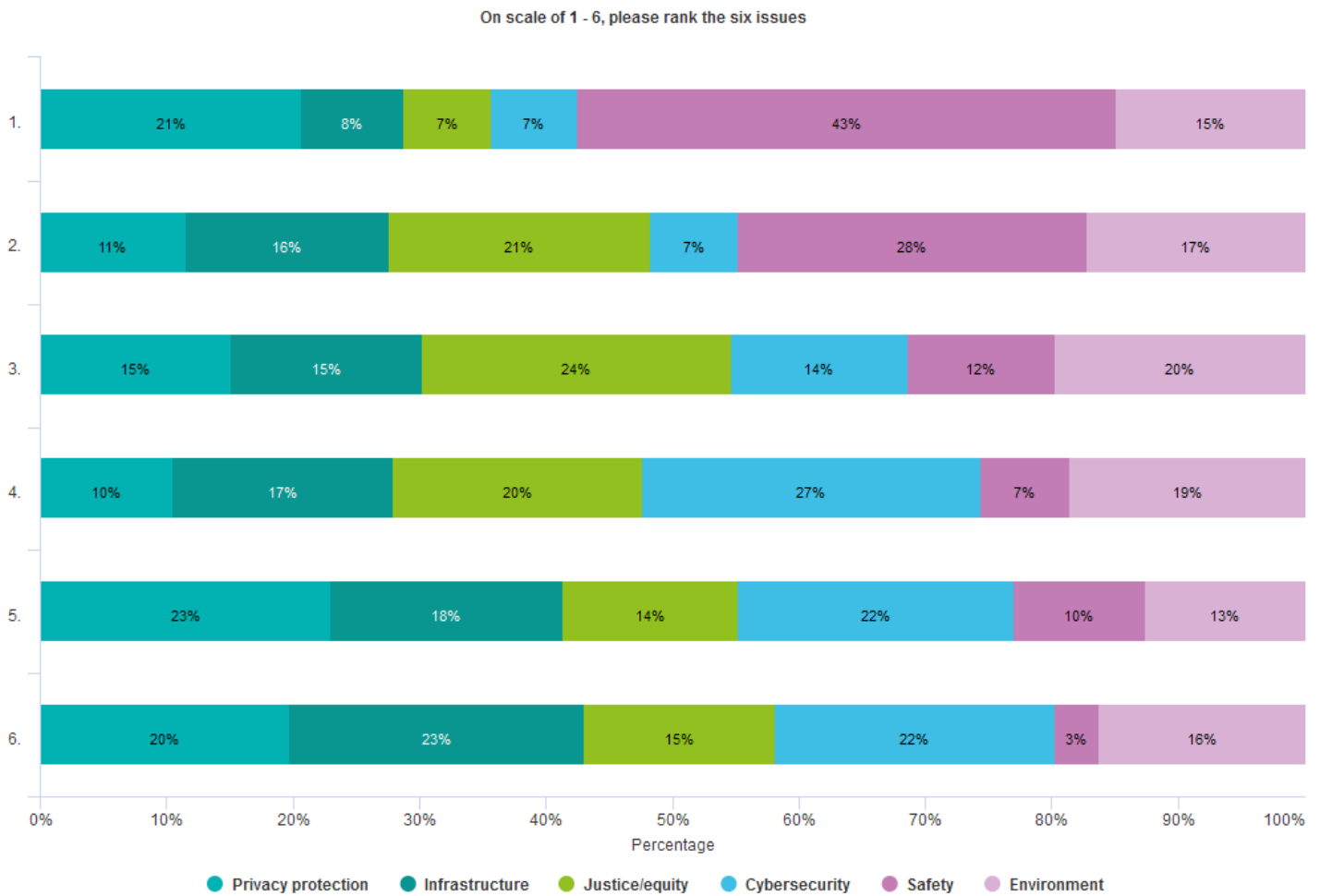


Figure 14

**Session 5: Our Ideal AV Ride in the Buffalo Niagara Region**

Across all 18 global forums, each host city was provided an opportunity to design a session addressing a locally relevant issue to help inform transportation policies and programs. For example, the Phoenix forum had participants allocate funding to different types of transportation projects, including AV infrastructure. The Boston forum asked people to redesign a local road, and the Washington, DC forum explored participants’ preferences for attendants in driverless vehicles.

In Buffalo, representatives from GBNRTC, the Niagara Frontier Transportation Agency (NFTA), the City of Buffalo, the UB IDeA Center, Niagara International Transportation Technology Coalition (NITTEC), and the International Trade Gateway Organization (ITGO) worked together to develop the Session 5 topic. These organizations are interested in understanding preferences for and barriers to AV usage in Western New York, and how and where to begin integrating AVs into the region’s transportation system.

At the Buffalo forum, participants were provided a brief overview of regional transportation challenges and about New York State AV legislation. They were then asked to consider what the ideal AV ride would look like to them.

First, participants were asked in a group discussion what the vehicle should look like: today’s cars, a small shuttle, or like today’s buses. Voting on their individual preference, the majority preferred a small shuttle (Fig. 15). Participants were then asked where they think AVs should operate: only urban areas, only suburban areas, only rural areas, some of these areas, or all areas. Most people support AVs in all areas (Fig 15). Participants were also asked to indicate the preference for where on roadways AVs should operate: 46 people prefer operating on all roads, 21 people want AVs in a special lane, 3 people support AVs only on highways, and 12 people said only on private roads.

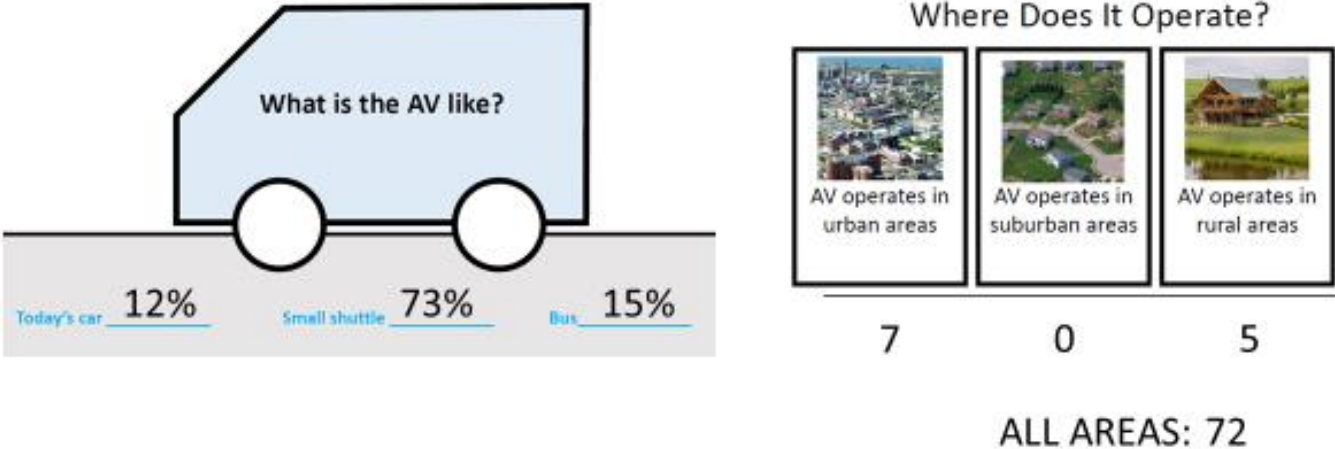


Figure 15



The session then looked at specific attributes of the vehicle, including ownership, accessibility, and having an operator on board. Participants were asked to rank their top three preferences (Fig 16). Lastly, participants were asked about other AV characteristics like the ability to operate in all weather, and to get to destinations faster and less expensive than their current transportation options. They were also offered an “wildcard” for any other characteristics they would like to see in AVs (Fig 17).

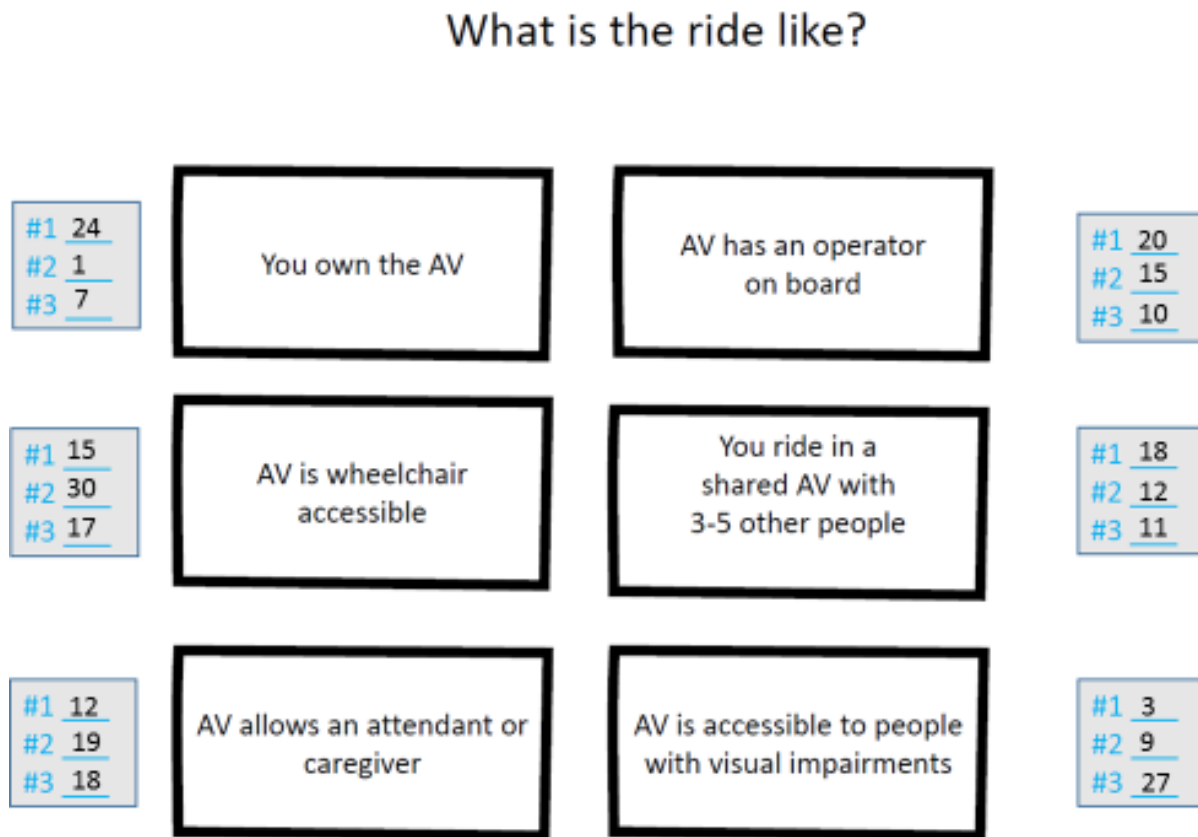


Figure 16

## Other Characteristics

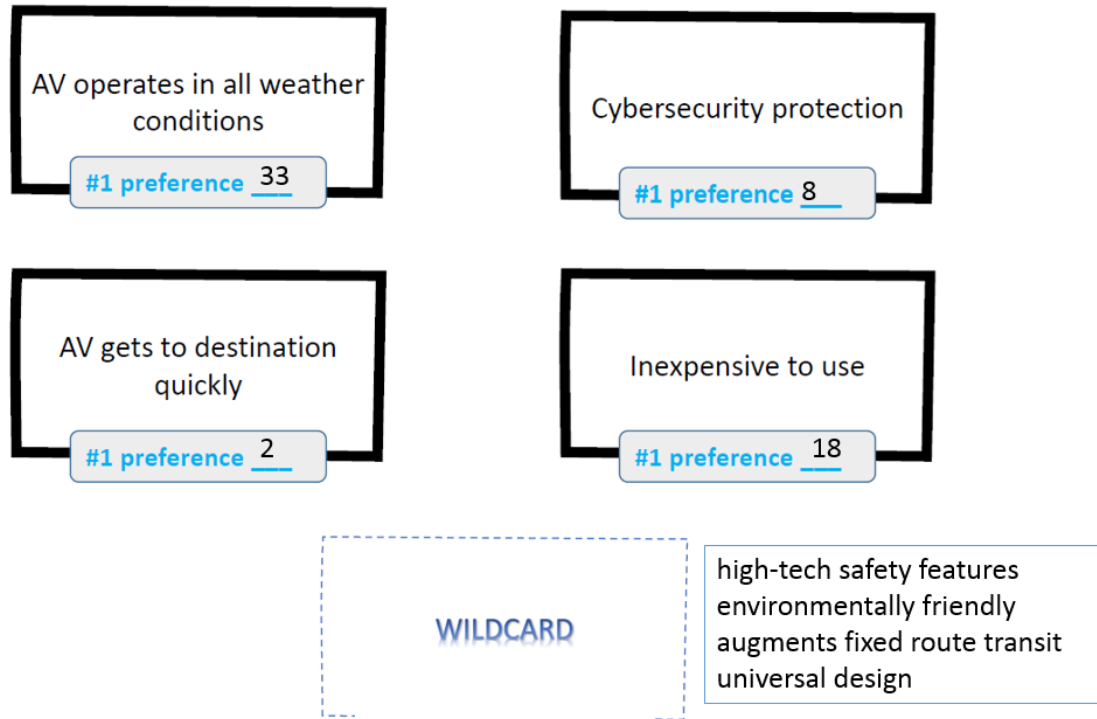


Figure 17

### ***Comparing Responses Before and After the Forum***

Participants completed a survey about their knowledge and opinions on AVs both before the forum (either online or on paper) and at the end of the forum (on paper). Figure 18 shows the survey questions with statistically significant differences before and after the forum. Familiarity and general knowledge of driverless mobility improved, as did preferences for accessibility and public input. Participants were also asked to provide one word to describe their feelings about AVs before and after the forum, as shown in the word cloud in Figure 19.

Figure 18

## Our Driverless Futures: Before and After

	PRE	POST
I am familiar with the topic of Driverless Mobility.	4.8	6.2
I know the issues, arguments and perspectives related to Driverless Mobility adoption.	3.9	5.8
I have sufficient information to make solid judgments about Driverless Mobility.	3.6	5.5
I feel like I know what should be done about transportation issues in my region.	4.4	5.4
I believe driverless vehicles should be accessible to everyone, regardless of income level.	5.8	6.5
Driverless vehicle safety should be regulated.	6.3	6.7
Experts should heed the opinion of the general public more than they now do.	5.2	6.1

*Scale 1-7, strongly disagree- strongly agree*  
11

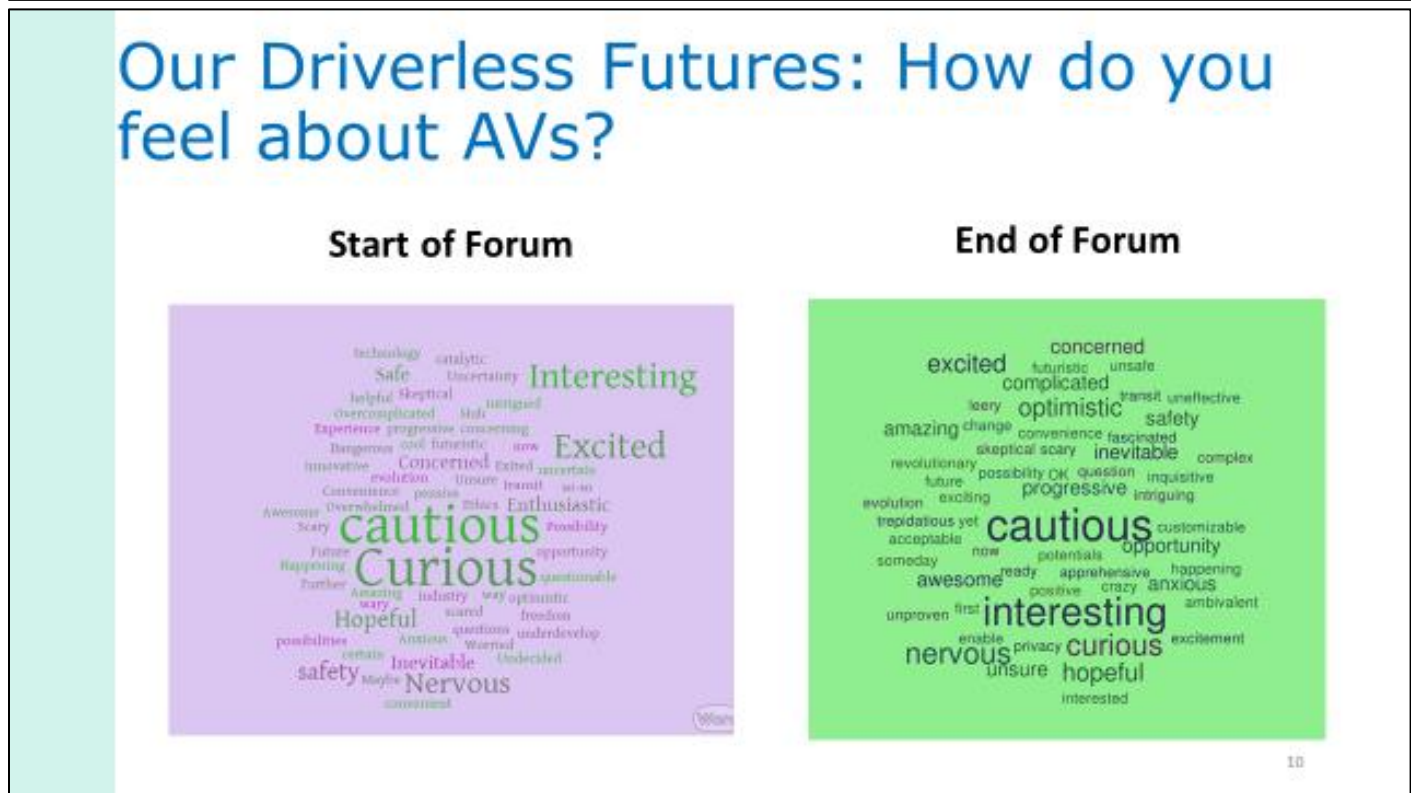


Figure 19

## **Future Analysis**

This report provides some initial results from the Buffalo Niagara region's AV forum. We will work with ASU on further analysis to compare the Buffalo forum results with those from other cities. Other analysis could look at comparisons within our forum participants, including among age groups, race/ethnicity and residence, and look more closely at consistencies between individual and group level responses. We will work with local stakeholders to identify useful analyses to help inform policies and programs in our region.

We would like to thank all of the participants for taking the time to provide engaging discussion and thoughtful input at our forum. Special thanks to Leah Kaplan and Mahmud Farooque at ASU for their help in organizing this event, and to Janine Myszka at the Boston Museum of Science for designing forum materials. We would also like to thank those who helped with facilitation, note taking and data entry:

Brian Borncamp  
Drew Canfield  
Kelly Dixon  
Regan Flemming  
Thea Hassan  
Aaron Krolikowski  
Mitch LaRosa  
Tyler Maddell  
Nicholas Miller  
JohnMichael Mulderig  
Brittany Perez  
Jeff Rehler  
Alexa Ringer  
Kim Smith  
David Tomblin  
Baris Vahapoglu  
Herbert Wang  
Amy Weymouth  
Hailey Whitney