

# Self-driving Vehicle Perception Survey Results



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This project is part of the Automated Driving System (ADS) project with generous contribution from the



## PURPOSE

The Office of Mobility Innovation (OMI) is excited to involve Detroit residents in shaping our vision for Detroit's self-driving future. This survey sought to understand Detroiters questions, comments, and perceptions about self-driving vehicles. The key findings from the survey will help shape the way OMI conducts pilots and engages around this evolving technology. These efforts will help expand transportation options in Detroit for years to come.

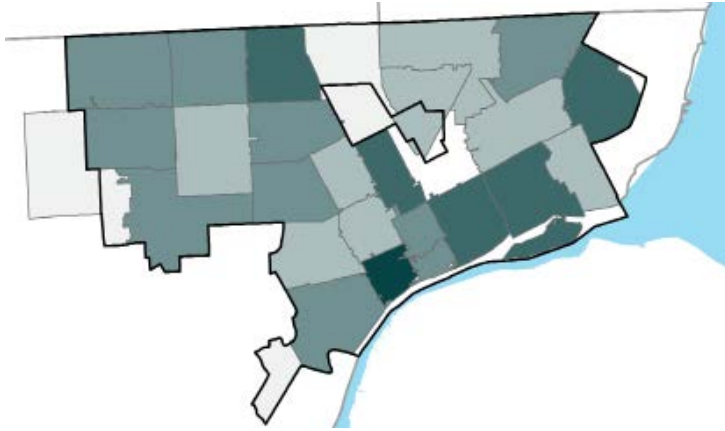
## SURVEY TIMELINE



# Survey Respondents

The Self-Driving Vehicle Perception Survey was open from October 2022 to March 2023. During this period, OMI promoted the survey through several channels including in-person events and email blasts.

## 379 respondents from across the City of Detroit

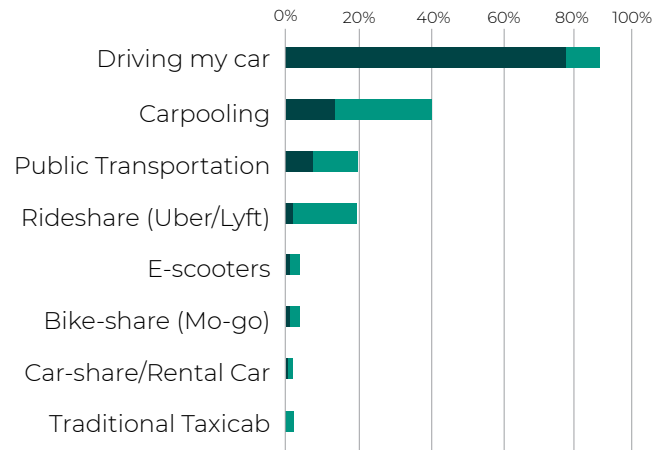


Number of respondents

|     |     |       |       |       |
|-----|-----|-------|-------|-------|
| 2-5 | 6-9 | 10-18 | 19-29 | 30-43 |
|-----|-----|-------|-------|-------|

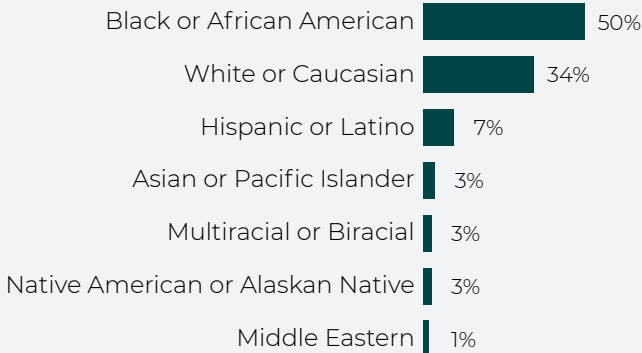
## 78% reported driving their car weekly

a few times per week    a few times per month

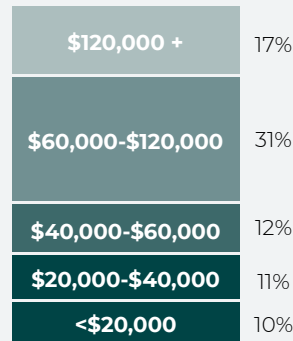


## Demographic characteristics of Detroit respondents

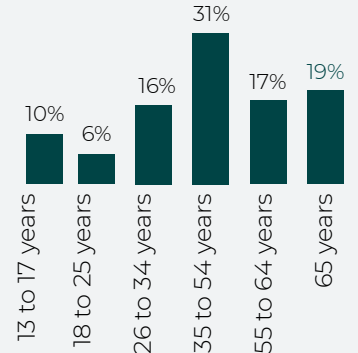
### RACE / ETHNICITY



### TOTAL HOUSEHOLD INCOME



### AGE



**OMI is exploring the potential for self-driving technology to help populations with the greatest need. Future research will focus on the experiences of the following groups:**



**19% elderly**  
Respondents over 65 years of age



**20% people with disabilities**  
Respondents reporting a disability



**19% parents / guardians**  
Respondents who are parents/guardians



**10% youth**  
Respondents under 18 years of age

For both single-choice questions where only one option could be selected and multiple-choice questions, percentage breakdowns represent the percent of respondents who selected that option out of the total number of respondents who responded to that specific question (i.e. blank responses were omitted). This means that for questions allowing respondents to select multiple options, the percentages will not sum to 100%.

# Results Overview

The survey results revealed respondents' openness to self-driving vehicle technology and to adopting and using different self-driving vehicle applications. The results identified areas of public excitement and concern, and opportunities for further research.

## 85% of respondents identified with reasons to be excited about self-driving technology.

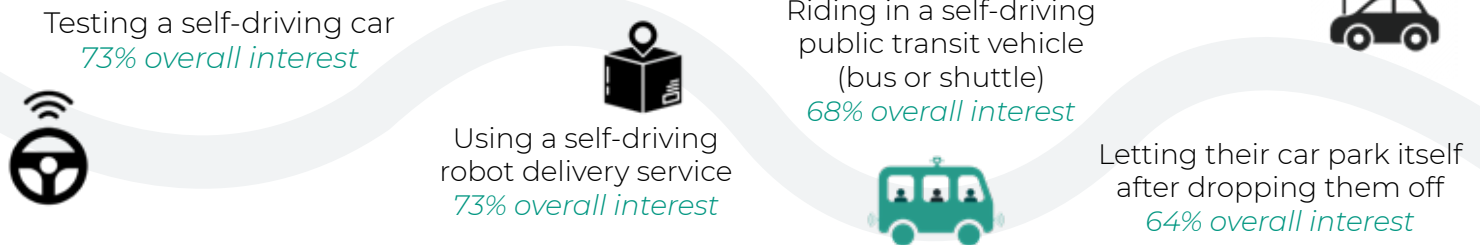
"I AM EXCITED ABOUT THE ABILITY FOR MY MOM AND OTHER SENIORS TO BE MORE INDEPENDENT"

- 1 relieved stress of driving (33%)
- 2 reduce driving under the influence of drugs or alcohol (33%)
- 3 increased accessibility (32%)
- 4 the development of futuristic technology (28%)
- 5 the ability to be productive during commute (27%)

"I AM EXCITED ABOUT THE FUTURE OF THIS TECHNOLOGY... I AM EXCITED THAT DETROIT IS THINKING ABOUT HOW TO CAPITALIZE ON THIS OPPORTUNITY."

Based on 303 responses to survey question: If anything, what excites you about self-driving vehicles? (Choose top 3 of 13 options). 15% selected "Nothing excites me about self-driving technology."

## Level of interest varied based on self-driving vehicle applications.



Based on 334 responses a survey question asking respondents to rate their interest in each self-driving application: "Not Interested", "Somewhat Interested", "Very Interested", or "I Am Not Familiar with This". Overall interest combines the percentages of those "Somewhat Interested" and "Very Interested."

### 95% of respondents had concerns about self-driving vehicles with safety being the primary concern.

- 68% my own safety
- 61% safety of pedestrians or bicyclists
- 55% safety of other drivers or passengers

Based on 307 responses to survey question: What concerns you about self-driving vehicles? Choose three of nine options.

### Safety-related measures would make respondents more willing to use self-driving technology.

- 52% having someone behind the vehicle ready to operate if something goes wrong
- 51% knowing the new technology was safe

Based on 334 responses to survey question: What might make you more willing to use self-driving vehicles? Choose three of eight options.

**Respondents were relatively divided in their opinion on self-driving vehicles' capabilities. Neutral responses indicate areas where the public needs to know more.**

|  |  | <b>% AGREE</b> | <b>% DISAGREE</b> | <b>% NEUTRAL</b> |
|--|--|----------------|-------------------|------------------|
| <b>More respondents agreed that self-driving vehicles would:</b>         | improve accessibility for people with disabilities | 66%            | 15%               | 19%              |
|  | improve transportation for all Detroiters          | 45%            | 28%               | 27%              |
|  | make my life easier                                | 43%            | 29%               | 29%              |
|  | be trusted to get me to my destination             | 40%            | 22%               | 38%              |
| <b>More respondents did not agree that self-driving vehicles would:</b>  | allow me to get rid of my personal car*            | 26%            | 45%               | 30%              |
|  | create jobs for Detroiters                         | 36%            | 36%               | 28%              |
|  | reduce traffic congestion                          | 34%            | 36%               | 30%              |
| <b>More respondents were uncertain that self-driving vehicles would:</b> | be able to handle bad driving conditions           | 25%            | 32%               | 43%              |
|  | be safer than driver-operated cars                 | 32%            | 30%               | 38%              |

\*Assuming access to on-demand driving services

Based on 334 responses to survey question: "Self-driving vehicles would..." Responses given on a five point scale "Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree."

**Open comments revealed additional topics of interest for Detroit respondents.**

TOP THREE TOPICS

**Distrust**

**Negative** Distrust in technology's capabilities (security issues, unpredictability, etc.) or the timeline of technology deployment

**Wrong Priority**

**Negative** Desire for city to focus on other issues

**Transit**

**Negative** Preference for Transit over autonomy  
**Positive** Ability for transit to utilize autonomy

"MY BIGGEST CONCERN IS THAT DETROIT GOES ALL-IN FOR AUTONOMOUS VEHICLES WHEN IT SHOULD GO ALL-IN ON TRANSIT, WALKING AND BICYCLING."

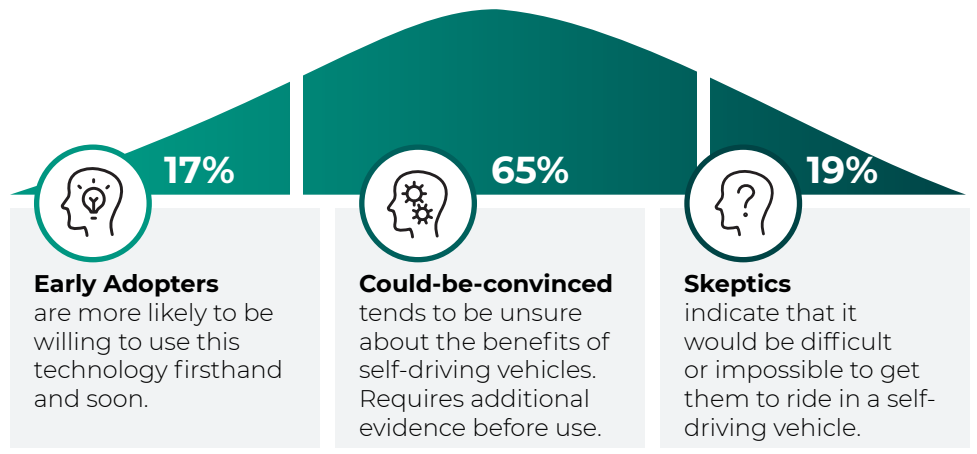
The survey presented the following four open questions: "What might make you more willing to use self-driving vehicles?", "What most concerns you about self-driving vehicles?", "What most excites you about self-driving vehicles?", and "Additional Comments or Questions?" Of the 214 comments received across all four questions, 57% had a negative connotation, 21% were neutral, and 17% were positive.

**Respondents differ in their readiness to adopt self-driving vehicle technology.**

Respondents' location along the 'adoption curve' indicates their likelihood to use the technology now and as it matures in the future.

**31% of respondents are willing to use technology firsthand.**

**11% indicated that nothing could convince them to ride in a self-driving vehicle.**



Based on 334 responses to survey question: "What might make you more willing to use self-driving vehicles?" (Choose three of seven).

A total of 444 respondents (including Detroit and non-Detroit respondents) were classified as Early Adopters, Could-be-convinced, and Skeptics based on their answers to three survey questions. For each question a respondent was given a score of 1-3, with "1" indicating alignment with Early Adopters and "3" indicating alignment with Skeptics.