

MnDOT used this scenario as part of a scenario planning process with stakeholders to create the agency's first Connected and Automated Vehicles Strategic Plan.

For more information, see [www.dot.state.mn.us/automated](http://www.dot.state.mn.us/automated).

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SCENARIO:

# PRIVATE AUTOMATION

*Automated vehicles are here, for better and for worse*

## SUMMARY

AVs proliferate with a mix of privately owned vehicles and competing mobility-on-demand providers. Congestion is common in urban areas.

## KEY ASSUMPTIONS

- Level 4 highly automated vehicles are available at prices affordable to many households
- Outdated pricing, policy and lack of coordination results in most trips being in single occupant vehicles

## INDICATORS



## A DAY IN THE LIFE

Marketa leaves her downtown office near the state Capitol after requesting a ride on her phone. Within seconds, an electric AV pulls up in a nearby pickup lane, where many cars are taking in passengers. After wading through the waiting vehicles, she gets in for her ride out to Lake Elmo, a suburb 15 miles away. She takes out her book and begins to read – it could be a long ride, as congestion has made what was once a 30-minute commute into almost an hour. Many of Marketa’s friends and relatives have their own automated vehicles and use them for everything from commuting to errands to transporting children and other family members. However, they too are frustrated with the increased congestion.



## WHAT'S DIFFERENT FROM TODAY?

## TECHNOLOGY INDICATORS

Connectivity	MED	<ul style="list-style-type: none"> <li>50% of vehicles can communicate with other connected vehicles, roadside infrastructure (e.g., traffic signals) and other devices (e.g., smart phones)</li> <li>Truck platooning is common on rural expressways and interstates</li> </ul>
Automation	HIGH	<ul style="list-style-type: none"> <li>75% of vehicles are highly automated</li> <li>Shared mobility fleets (e.g., Uber, Lyft) are highly automated</li> <li>Freight vehicles and services are highly automated</li> </ul>
Electrification	MED	<ul style="list-style-type: none"> <li>15% of vehicles are electric (50% in urban settings)</li> <li>All shared mobilityfleets are electric</li> </ul>
Sharing	MED	<ul style="list-style-type: none"> <li>Shared mobility fleets (e.g., Uber, Lyft) and public transit compete in many cities</li> <li>Most data is still proprietary, which results in competition for space, congestion, fewer efficiencies</li> <li>50% of travel is done using mobility-on-demand, usually as non-shared rides</li> </ul>

## DISTRIBUTION OF BENEFITS

Users	<ul style="list-style-type: none"> <li>Private ownership of highly automated vehicles is common Lower levels of connectivity and cooperation limit benefits to transit and other modes of transportation</li> <li>Individuals with limited mobility benefit from the new highly automated vehicles</li> </ul>
Locations	<ul style="list-style-type: none"> <li>Connected and automated vehicle safety features are not limited to any specific geography in the state</li> <li>Lack of cooperation favors mobility-on-demand trips that are more profitable for private operators, generally in urban areas and regional centers</li> </ul>