

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.

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SCENARIO:

INTEGRATED MOBILITY

Connected and automated transportation is widely available and serves everyone

SUMMARY

On-demand CAV ride-hailing and transit services expand and integrate with other modes of transportation through data sharing, policy, and connected infrastructure.

KEY ASSUMPTIONS

- Level 4 highly automated vehicles are available at prices affordable to average income households
- Integrated, coordinated mobility-as-a-service is common
- Car ownership rates drop, especially in cities

INDICATORS



A DAY IN THE LIFE

Chin is working from home in Hinckley, MN—a small city of 2,000 people located 80 miles north of Minneapolis— when he gets a message that his favorite author is giving a talk in Duluth, a city of about 100,000 people 75 miles away. He has a report due that afternoon, but knows that he will be able to work while traveling. He opens his mobility app to request a shared AV for the trip. However, there is an incident on the Interstate, and the train fare has been substantially reduced to encourage travelers to avoid the interstate. He books his trip and takes an automated rideshare service to the train station. After a comfortable, high-speed trip, he submits his report, walks out of the station, and steps into a waiting shared electric AV. After the talk, Chin jumps into a waiting AV for a ride back to Hinckley. He is the only passenger, but the vehicle also has packages to be delivered at stops along the way.



WHAT'S DIFFERENT FROM TODAY?

TECHNOLOGY INDICATORS

Connectivity	HIGH	<ul style="list-style-type: none"> 75% of vehicles can communicate with other connected vehicles, roadside infrastructure (e.g., traffic signals) and other devices (e.g., smart phones)
Automation	VERY HIGH	<ul style="list-style-type: none"> 75% of vehicles are highly automated Shared mobility fleets (e.g., Uber, Lyft) are highly automated Freight vehicles and services are highly automated
Electrification	HIGH	<ul style="list-style-type: none"> 75% of vehicles are electric All shared mobilityfleets are electric
Sharing	HIGH	<ul style="list-style-type: none"> Data sharing allows for an efficient, integrated system of private vehicles, shared mobility fleets, transit and freight 75% of travel done using mobility-on-demand, often as shared rides Private ownership of fully automated vehicles is uncommon, particularly in urban areas and regional centers

DISTRIBUTION OF BENEFITS

Users	<ul style="list-style-type: none"> Technology, sharing and coordinated policies spread benefits across all users, including non-motorized modes and people with limited mobility
Locations	<ul style="list-style-type: none"> Connected and automated vehicle safety features are not limited to any specific geography in the state Mobility-on-demand options are available almost everywhere in the state