

Quick Take

What:

Automated vehicles: A new area of concentration in which the North Central Texas Council of Governments is working to advance the development of technologies that will provide safer, more efficient transportation for North Texas.

Significance:

Automated vehicles possess the potential to make roadways safer, more accessible and more efficient. NCTCOG intends to play a significant role in the deployment of automated vehicles. North Texas' transportation assets may become more valuable through intelligent use of this technology, resulting in the creation of more jobs and an improved quality of life.

By the Numbers:

90 percent

The percentage of accidents caused by human error, according to the National Highway Traffic Safety Administration.

NCTCOG Examines Automated Vehicles



Photo: Getty Images

As the region faces a future of strong growth, planners will be confronted with many challenges that must be overcome to ensure the transportation system continues to meet the needs of North Texans. Vehicle miles traveled are expected to increase at a faster rate than highway capacity as the population surges toward 11 million.

The North Central Texas Council of Governments projects the expenditure of \$118.9 billion through 2040 on improvements to the region's multimodal transportation system. Expansion of roadways, passenger rail and bicycle-pedestrian facilities are all planned as part of the long-range transportation plan. But

efforts to enhance transportation will also involve innovation. One element NCTCOG has begun exploring is automated vehicles. This technology may sound futuristic, but new vehicles already contain sophisticated computers that offer navigation assistance, remote starting and automatic braking.

Many vehicles connected to the internet also provide blind-spot warnings to drivers and assistance with parking. Technology is evolving so rapidly that the cars of tomorrow will offer even more automation. These automobiles leverage in-vehicle technologies to allow automated operation. Electronic connections among vehicles and roadway infrastructure may improve performance.

NCTCOG has established a program area focused on vehicle automation that will allow it to explore the safety, accessibility and efficiency benefits of the emerging technology.

Automated Vehicle Technologies:

- **Autonomous vehicles** – “Driverless cars.”
- **Vehicle-to-vehicle** – The federal government has reserved a band of wireless spectrum for this technology, which would allow cars to communicate with one another to improve safety.
- **Connected-vehicle** – Examples of this technology include music streaming, navigation, traffic safety and remote start.
- **Vehicle-to-infrastructure** – Wrong-way driving, traffic-signal phasing and work-zone warnings are examples.

FACTSheet

Billions of dollars are being invested in vehicle automation by the public and private sectors in part because of the many potential benefits of the technology.

Potential benefits include:

- 1. Safety** – Human error results in 90 percent of crashes on the roads. Travel by air or rail is statistically much safer than driving. Automation could drastically reduce the crash rates on the roads.
- 2. Efficiency** – Highway performance has not changed much in generations. Automation could help North Texans travel more effectively through improvements such as more efficient routing.
- 3. Environment** – With the concept of shared mobility, moving more people in fewer vehicles could reduce the demand for parking lots and expansion of highways.
- 4. Access and equity** – Shared mobility and automation could help provide transportation to more people with fewer vehicles, reducing transportation costs.
- 5. Demand** – It is difficult to know how automation would impact demand, but the efficiencies realized through this technology could allow more vehicles to travel farther.

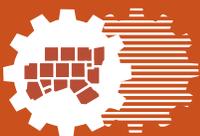
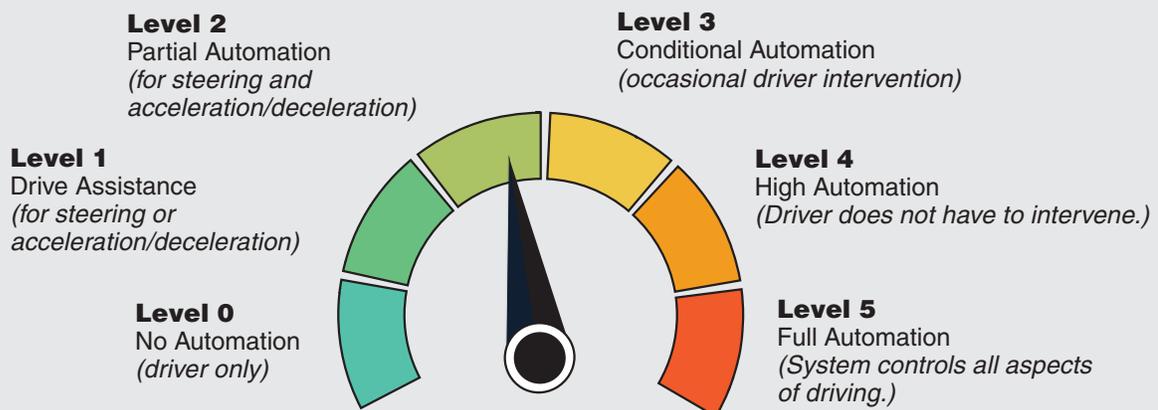
The region's geography, well-developed transportation system and desire to attract and retain talent in the automotive technology sector make Dallas-Fort Worth a potential leader in the industry. Through its new automated vehicle program area, NCTCOG is prepared to assume a key role in the deployment of the technology.

NCTCOG's role in automated technology:

- 1. Maintain current infrastructure.**
- 2. Make transportation data accessible in real time.**
- 3. Support shared-mobility services.**
- 4. Factor automated vehicles into planning decisions.**
- 5. Support development of automation.**
- 6. Focus on automation's social equity and economic development opportunities.**

NCTCOG is looking for opportunities to partner on projects to test and deploy automated vehicle technologies. The traditional functions of the Transportation Department and its reliance on partnerships to accomplish goals make it well-suited for this role.

Levels of Vehicle Automation



North Central Texas Council of Governments

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