

The current "Recommended" Comprehensive Plan now being considered by City Council contains this policy which touches on autonomous and connected vehicles:

Policy 9.38 Automobile efficiency. Coordinate land use and transportation plans and programs with other public and private stakeholders to encourage vehicle technology innovation, shifts toward electric and other cleaner more energy efficient vehicles and fuels, integration of smart vehicle technology with intelligent transportation systems, and greater use of options such as carshare, carpool, and taxi.

There are a number of other goals and policies that potentially intersect with the impacts of these vehicles, including:

Goal 9.A Safety

Policy 9.5 Mode share goals and Vehicle Miles Traveled (VMT) Reduction

Policy 9.7 Moving goods and delivering services

Policy 9.8 Affordability

Policy 9.44 System Management

Policy 9.47 Technology

Policy 9.54 Parking Management

I would like to propose several "Objectives" in the Transportation System Plan (TSP) to provide more specific direction under these policies for autonomous and connected vehicles (I'll be looking to staff to figure out exactly how to number these and position in the TSP):

A. Consider regulation, pricing or incentives to:

- encourage deployment of autonomous vehicles in a shared mobility model
- minimize miles traveled by passenger vehicles with no passengers on board
- encourage multiple passengers in autonomous vehicles

B. Support the deployment of vehicle automation that improves safety (example: forward collision avoidance systems).

C. Consider investments in wayside communication systems that facilitate connected or autonomous vehicles more effectively achieving Comprehensive Plan and Transportation System Plan policies and objectives.

D. Consider a role for Portland as a test site for connected or autonomous vehicle technologies that further Comprehensive Plan and Transportation System Plan policies and objectives.

I would also suggest adding these definitions to the TSP Glossary:

Autonomous Vehicle

The U.S. Department of Transportation's National Highway Traffic Safety Administration (NHTSA) defines five levels of vehicle automation:

No-Automation (Level 0): The driver is in complete and sole control of the primary vehicle controls – brake, steering, throttle, and motive power – at all times.

Function-specific Automation (Level 1): Automation at this level involves one or more specific control functions. Examples include electronic stability control or pre-charged brakes, where the vehicle automatically assists with braking to enable the driver to regain control of the vehicle or stop faster than possible by acting alone.

Combined Function Automation (Level 2): This level involves automation of at least two primary control functions designed to work in unison to relieve the driver of control of those functions. An example of combined functions enabling a Level 2 system is adaptive cruise control in combination with lane centering.

Limited Self-Driving Automation (Level 3): Vehicles at this level of automation enable the driver to cede full control of all safety-critical functions under certain traffic or environmental conditions and in those conditions to rely heavily on the vehicle to monitor for changes in those conditions requiring transition back to driver control. The driver is expected to be available for occasional control, but with sufficiently comfortable transition time. The Google car is an example of limited self-driving automation.

Full Self-Driving Automation (Level 4): The vehicle is designed to perform all safety-critical driving functions and monitor roadway conditions for an entire trip. Such a design anticipates that the driver will provide destination or navigation input, but is not expected to be available for control at any time during the trip. This includes both occupied and unoccupied vehicles.

Connected Vehicle

A vehicle that communicates with the Internet, other vehicles, wayside systems and/or passenger