The U.S. Department of Transportation (USDOT) is investing in technology that will enable vehicles to communicate with each other and with roads. Through a secure wireless communications network, vehicles will connect—advancing our nation's transportation system to a not-so-distant future of improved safety, mobility, and environmental sustainability.

Are you ready?

What Are Connected Vehicles?

We are in an age of constant communication, free-flowing information, and connectivity, and our vehicles and roads will soon join the conversation.

In the near future, our cars, trucks, trains, and buses of all makes and models will be able to talk to each other; to our roadside infrastructure such as traffic signals, work zones, and toll booths; and to our smart phones and tablets, exchanging valuable information that will save lives, increase mobility, and improve fuel efficiency.

The shared vehicle information will be private and will not identify the vehicle or the driver, but will generate robust data about how, when, and where our vehicles travel—information that could be used to develop new and innovative apps, leading to less congested and safer roads. Connected vehicles and infrastructure will transform our transportation system as we know it.

Imagine your car alerting you to a potential crash in time to safely avoid it, offering recommended speeds to reduce congestion and save gas, or even identifying nearby travelers participating in ridesharing. These are just a few of the potential benefits a future of connected vehicles will offer.

Academic research institutions and leading automotive manufacturers also recognize the potential of a system of connected vehicles and are already investing in the technology.

In addition, the National Highway Traffic Safety Administration (NHTSA) recently announced that it will pursue vehicle-to-vehicle (V2V) communication technology for light vehicles to enhance safety. This means that V2V devices will be required in new vehicles in a future year. This decision will pave the way toward getting connected vehicles to you and on our roads sooner.

What Can You Do?

▸ Visit our website for more information: *http://www.its.dot.gov.* Our website includes videos, infographics, and presentations that tell you more about connected vehicles.

▸ Stay connected by signing up to receive updates via email, RSS, Twitter, and Facebook.

▸ Engage with our program by participating in our various public meetings and webinars.

▸ Take advantage of free training offered through our Professional Capacity Building program.

▸ Check out our Research Data Exchange, which provides a platform for sharing data related to connected vehicles and intelligent transportation systems—helping to spur application development and testing, encourage innovation, and ultimately get the technology on our roads sooner. Visit: *https://www.its-rde.net.*

▸ Learn more about our connected vehicle test beds. These real-world, operational test beds allow innovators to test their connected vehicle devices and applications—bringing the technology and its tremendous benefits to our roads sooner. For more information, visit: *http://www.its.dot.gov/testbed.htm.*

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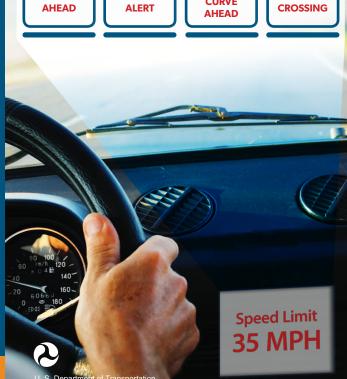
Photos are courtesy of USDOT.

www.its.dot.gov

Connected Vehicles Are Coming…

Here's What You Need To Know

| WORK ZONE AHEAD | CRASH ALERT | SHARP CURVE AHEAD | PEDESTRIAN CROSSING |

Speed Limit
35 MPH

U. S. Department of Transportation

Improving Mobility

While the primary goal is safety, connected vehicles can also enhance mobility by reducing delays and congestion, improving traffic flow, and making it easier for people to plan their travel experience.

Dynamic Ridesharing: Imagine being able to instantly connect with potential rideshare partners by using your smartphone or in-car device. You could quickly find information about the availability and location of nearby travelers hoping to share a ride.

Connection Protection: Worried about missing your connecting train or bus? Imagine receiving up-to-the-minute status updates on your transit connection via a digital display inside the transit vehicle. Even more, imagine being able to request your connection to wait if you and others are experiencing slight delay. Connected vehicle technology could alleviate some of the stress when connecting to two or more buses or trains.

Mobile Accessible Pedestrian Signal System: Pedestrian safety is always a concern, and connected vehicles could ease some of that worry. Imagine pedestrians with disabilities being able to use a smart phone to alert traffic controllers to their presence in the crosswalk. The controller could then hold the signal until the pedestrian crosses safely. Moreover, your car could alert you to the presence of that pedestrian.

Incident Zone Warning: Imagine your car warning you about an incident on the road ahead such as a traffic stop. This would give you time to safely slow down and change lanes, helping to protect the safety of any police officers on the scene and maintain the flow of nearby traffic. Meanwhile, any officers or first responders at the scene could also receive a warning on their radios that an approaching vehicle might pose a danger.

Improving Roadway Safety

Safety is the USDOT's top priority. Because a system of connected vehicles offers significant safety benefits, connected vehicle research is one of our premier research projects.

Connected vehicle safety applications will provide drivers with full awareness of potential hazards and crash situations—even those they cannot see.

Emergency Electric Brake Warning: Imagine your car alerting you if a vehicle several cars ahead brakes suddenly, providing you with more time to react. Those extra seconds could make all the difference in avoiding a potential crash.

Intersection Movement Assist: Imagine entering an intersection just as someone runs a red light. The results could be deadly. Connected vehicles could prevent that by warning you if it's unsafe to enter an intersection.

Reducing Transportation's Environmental Impact

In addition to the ability to save lives and improve mobility, this system of connected vehicles also promises to lessen transportation's impact on the environment by reducing fuel use and emissions.

Eco-Approach and Departure at Signalized Intersections: Imagine traffic signals that could broadcast data about when their lights will phase to green, yellow, and red. Your vehicle would use the data to recommend adjusting your speed to pass the next traffic signal on green or slowing down to a stop in the most eco-friendly manner—reducing idling and unnecessary stops and saving gas and money.

Eco-Traffic Signal Timing: Imagine smart traffic signals that adjust the timing of their lights based on traffic demand and vehicle location, speed, and emissions. During rush hour, such advanced signal timing could keep traffic moving and improve fuel use and overall emissions—getting you where you need to go quickly and more efficiently.

Reducing the Impact of Weather on Roads

Many cars on our roads today already have onboard computers that compile information such as road temperature, windshield wiper use, anti-lock brake use, steering patterns, and speed. Connected vehicles will provide new sources of information that will dramatically improve the detection and forecasting of road weather and pavement conditions.

Motorist Advisories and Warnings: Imagine your car warning you of icy conditions on the road ahead. Such a warning would enable you to adjust your speed to travel the road more safely, making travel during bad weather conditions less stressful.

Enhanced Maintenance Decision Support System: Imagine snowplows and other agency fleet vehicles receiving the same information about deteriorated road conditions. Agencies would have better, more up-to-date information about problem areas and where fleet vehicles are needed most, improving treatment and response time.

Connected vehicles will make surface transportation safer, smarter, and greener. They will be on our roads sooner than you think, and once here, the possibilities are endless.