



CONNECTED VEHICLES

ENABLING BETTER
TRAFFIC FLOW AND
SMARTER STREETS



With commute times and congestion at an all-time high, new vehicle technologies offer an innovative way to keep things moving.

When vehicles, smartphones and devices like traffic lights, toll booths and programmable road signs are connected, the results can be impressive: improvements in safety, mobility, emergency response times and carbon emissions. Simply knowing how many vehicles are on a given stretch of road at a particular time can lead to better traffic routing; imagine the reduction in traffic congestion if municipalities could fully leverage real-time speed, location and direction data to help people reach their destinations.

CONNECTING VEHICLES BENEFITS EVERYONE

Services that alert drivers to delays and better routes provide a better driving experience for people who opt in, but even those who choose not to participate gain from the technology. Connected vehicles can avoid congestion, so traffic flows more smoothly overall. Even those who don't use cars benefit: for example, buses can share up-to-the-minute schedule information and vehicles like delivery, construction and garbage trucks can coordinate movements to keep streets clear.

SHARING AND USING CONNECTED VEHICLE DATA FOR THE GREATER GOOD

The development and deployment of connected vehicle solutions takes a combination of various off-the-shelf technologies including GPS, broadband wireless networks and analytics. Data can be shared, either by the vehicle itself or through personal mobile devices. Information can flow the other way as well, to let drivers know about hazards and congestion ahead, and to help them find the best route.

Connected vehicles can and do lead to the development of smarter streets and intersections that reduce bottlenecks, improve emergency response times and deliver more efficient routes and information to drivers and passengers.

The mix of technologies that create a connected vehicle infrastructure enable minute-by-minute fine-tuning of traffic while also delivering long-term improvements. In some areas, toll plaza choke points have given way to automated tolling via transponder or license plate recognition. Also, by better understanding traffic patterns, transportation planners gain the insight needed to optimize road use by targeting new construction and incentivizing reduced flow in problematic areas.

REDUCING STRESS AND PROMOTING PUBLIC HEALTH

The average commute in the U.S. is 26.1 minutes, according to the Census Bureau.¹ Major metro areas can add ten to fifteen minutes on top of that. That represents a tremendous loss of time and a significant impact on the environment. The University of Waterloo (Ontario, Canada) reports that longer commutes promote higher levels of stress and lower levels of life satisfaction than shorter commutes.² These findings prove what the average working American already knows: long commutes are terrible. This highlights the major benefit of connected vehicle technology: less impact on the environment, the economy and more importantly, people.

The networks and technology necessary to move forward already exist. Indeed, many drivers have embraced GPS and apps — such as those for mobile navigation — to make their own journeys easier. The opportunity is to connect the dots in a way that protects the privacy of drivers while making life just a little bit more pleasant — and safe — for everyone.

¹ <https://www.census.gov/library/visualizations/interactive/travel-time.html>

² <https://www.sciencedaily.com/releases/2014/12/141203142638.htm>