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UC Berkeley To Offer Free Cell Phone GPS Download

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BERKELEY, Calif. -- It's a dilemma commuters often face when traffic grinds to a halt on the freeway: Should they stay on the road in hopes of quickly picking up speed or do they veer off in search of a better route.

Soon, they can look to their cell phones for advice in making the best decision.

Starting Monday, the University of California, Berkeley, will offer free downloads of a software program for phones equipped with a global positioning system as part of a pilot project called Mobile Millennium. Researchers say the technology will provide live traffic conditions, tell people how long their commute will take and help them avoid traffic by steering them to less congested roads.

They say the technology even has the potential to help people make travel plans in real time by coordinating a person's itinerary with current traffic conditions.

"If the phone knows where you are and where you're going, it can tell you when you should be leaving or else you're going to be late," said Alexandre Bayen, a civil engineering professor who is heading the project out of UC, Berkeley's, California Center for Innovative Technology.

For the last few decades transportation officials have judged freeway traffic patterns by using cameras and sensors embedded in the pavement. Information from those sensors is transmitted to Web sites that feature color-coded maps indicating average freeway speeds.

But the sensors are expensive, so they're installed every few miles or so and limited to major freeways. That means traffic speed is not registered at every point on the road, making it hard to provide accurate, real-time traffic information.

As a result, commuters say what appears to be gridlock ahead is sometimes resolved by the time they arrive. At other times, bottlenecks materialize without warning.

Such limitations have led experts to believe that a better way to electronically measure traffic would be to put monitoring equipment inside vehicles and provide customized information based on the motorist's trip destination. The software works by figuring out the location and speed of a person's cell phone as it travels in a moving car. The data go to a computer server, which processes the information, compares it to other traffic data and sends the current traffic conditions back to the phone.

Users can get traffic information by looking at a map on their phone or by listening to an audio report if they don't want to take their eyes off the road.

GPS technology provides a faster and cheaper way to track traffic, especially in areas where it's hard to measure traffic flow, such as city streets and rural roads, said Quinn Jacobson, research leader at Nokia Research Center in Palo Alto, which co-sponsored the project. Other backers include the California Department of Transportation and the federal Research and Innovative Technology Administration.

"Clearly we can't put sensors on the road everywhere, but we do have cell phone coverage everywhere," he said. "GPS allow us fill in all those gaps."

Although the ability to track drivers wherever they go also has sinister implications, researchers say the software uses encryption techniques to protect privacy.

"We can't identify you, your cell phone number is stripped off, whatever data sent to us is encrypted," Bayen said.

The free software program is available nationwide to anyone with a GPS-equipped cell phone. For now, researchers are concentrating on getting up to 10,000 Northern Californians to download it so they can monitor traffic conditions on the major commuter corridors between the San Francisco Bay area and Sacramento.

They say the more people come online, the more traffic data will be collected, which will improve the system's accuracy. Also, it will help them get traffic conditions on city streets as drivers spread out across the network.

By assessing traffic conditions on those so-called surface streets, the system will also be able to suggest alternate routes when there's gridlock on the freeway. That in turn could lead to more efficient use of the freeway and roadway system.

"It's a very powerful thing if you think about it," Jacobson said. "Having potentially all the drivers out there contributing as a community to give you insight on traffic condition."

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