Cell phones can help traffic flow

Users of GPS-equipped phones can download software to provide data

By DAISY NGUYEN
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BERKELEY — 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 today, UC 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 past 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
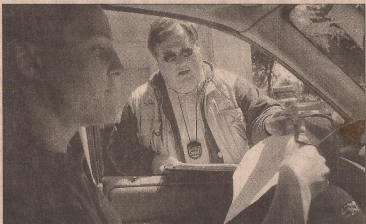
JEFF CHIU / Associated Press

Stephen Andrews Jr., right, senior public policy analyst for the California Center for Innovative Transportation Mobile Millennium field test, instructs Tristan Fletcher, 19, before the driving portion of the test this summer in Berkeley.

every point on the road, making it hard to provide accurate, real-time traffic information.

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 with 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.

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 Bay Area and Sacramento.