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Can't Find a Parking Spot? Check Smartphone

By [JOHN MARKOFF](#)

SAN FRANCISCO — The secret to finding the perfect parking spot in congested cities is usually just a matter of luck. But drivers here will get some help from an innocuous tab of plastic that will soon be glued to the streets.

This fall, San Francisco will test 6,000 of its 24,000 metered parking spaces in the nation's most ambitious trial of a wireless sensor network that will announce which of the spaces are free at any moment.

Drivers will be alerted to empty parking places either by displays on street signs, or by looking at maps on screens of their smartphones. They may even be able to pay for parking by cellphone, and add to the parking meter from their phones without returning to the car.

Solving the parking mess takes on special significance in San Francisco because two years ago a 19-year-old, Boris Albinder, was stabbed to death during a fight over a parking space.

"If the San Francisco experiment works, no one will have to murder anyone over a parking space," said Donald Shoup, a professor of urban planning at the University of California, Los Angeles, whose work on the pricing of parking spaces and whether more spaces are good for cities has led to a revolution in ideas about relieving congestion.

"It will have a cascade of positive effects on transportation and the economy and environment," he said. About a dozen major cities are in discussions with technology companies to deploy so-called smart parking systems, though San Francisco is ahead in its efforts.

New York City is not among them. The Bloomberg administration's plan for easing traffic through a [congestion pricing](#) plan died in the State Legislature this spring, though high gas prices are reducing traffic somewhat on their own.

Not that New Yorkers need any reminders of their traffic problems, but a study released in June by Transportation Alternatives, a public transit advocacy group, reported that 28 percent to 45 percent of traffic on some streets in New York City is generated by people circling the blocks.

The study also said that drivers searching for metered parking in just a 15-block area of Columbus Avenue on Manhattan's Upper West Side drove 366,000 miles a year.

[Gavin Newsom](#), San Francisco's mayor, said that better parking systems were part of a broader approach to managing congestion without imposing restrictive tolls, as used in London and Singapore to discourage driving in downtown areas.

For Mr. Newsom the largest part of the challenge is replacing the city's aging infrastructure.

"When I watch the movie 'Vertigo,' I still recognize every single traffic signal," said the Mr. Newsom, referring to the 50-year old [Alfred Hitchcock](#) film.

SFpark, part of a nearly two-year \$95.5 million program intended to clear the city's arteries, will also make it possible for the city to adjust parking times and prices. For example, parking times could be lengthened in the evening to allow for longer visits to restaurants.

The city's planners want to ensure that at any time, on-street parking is no more than 85 percent occupied. This strategy is based on research by Mr. Shoup, who has estimated that drivers searching for curbside parking are responsible for as much of 30 percent of the traffic in central business districts.

In one small Los Angeles business district that he studied over the course of a year, cars cruising for parking created the equivalent of 38 trips around the world, burning 47,000 gallons of gasoline and producing 730 tons of carbon dioxide.

To install the market-priced parking system, San Francisco has used a system devised by Streetline, a small technology company that has adapted a wireless sensor technology known as "smart dust" that was pioneered by researchers at the University of California, Berkeley.

It gives city parking officials up-to-date information on whether parking spots are occupied or vacant. The embedded sensors will also be used to relay congestion information to city planners by monitoring the speed of traffic flowing on city streets. The heart of the system is a wirelessly connected sensor embedded in a 4-inch-by-4-inch piece of plastic glued to the pavement adjacent to each parking space.

The device, called a "bump," is battery operated and intended to last for five and 10 years without service. From the street the bumps form a mesh of wireless Internet signals that funnel data to parking meters on to a central management office near the San Francisco city hall.

Streetline has technology that will display open parking spaces on Web sites that can be accessed through wireless devices like smartphones. They are also developing a low-cost battery-operated street display that will be able to alert drivers to open parking spots nearby.

The San Francisco project is part of a more ambitious sensor network that will use technology for a range of services. It will be possible to monitor air quality as well as deploy noise sensors that act as sentries for everything from gunshots to car crashes. Advocates assert that wireless sensor technology is now so inexpensive and reliable that it is practical to use for essential city services.

"The broader picture is what we're building is an operating system for the city that allows you to talk to or control all the inanimate objects out there to reduce the cost and improve quality of city services," said Tod Dykstra, chief executive of Streetline, the company that is supplying the wireless sensor technology to San Francisco.

Mr. Newsom thinks that San Francisco will rally behind the sensor technology and will expand it to all of the city's on-street and parking garage spaces in 2010.

“There isn’t a person who hasn’t experienced the travails of going around the block multiple times searching for a parking space, using gas and wasting time and generating greenhouse gases,” he said. “It will scale in people’s consciousness to the point that the public will demand more.”

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