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Is Your E-ZPass the Key to Congestion Pricing?

By WINNIE HU MARCH 21, 2018

A high-tech team is already scouting congestion on Manhattan's streets.

It includes dozens of E-ZPass readers that check constantly for gridlock from atop traffic-signal poles at intersections. They measure vehicle volumes and speeds in real time and alert city engineers when to adjust and sync green lights to keep traffic moving as part of a city program, Midtown in Motion.

Now a congestion-pricing plan recommended by a state task force could significantly expand this E-ZPass infrastructure, which has also been used for cashless tolling at bridges and tunnels. Only it would be harnessed for a new purpose: charging a daily fee to drive into a congestion zone from 60th Street south to the Battery during busy times.

While congestion pricing faces daunting political obstacles, there are a host of complex technical issues that pose just as much of a challenge. Technology has advanced in the decade since the last major congestion-pricing push in New York, and a growing number of cities and municipalities have harnessed it to unclog roads, shorten commutes and raise millions of dollars for transportation needs.

But even advocates of congestion pricing are divided over how to transplant it to New York, which would be the first American city to have a pay-to-drive fee in its central business district. Many say that building on existing E-ZPass technology

could get a congestion zone up and running in two years, but others caution that newer, fast-developing technologies could be cheaper and more efficient.

“It would be unwise to invest in a technology that will be out of date by the time it’s built,” said Mitchell L. Moss, a member of the state task force and director of the Rudin Center for Transportation Policy and Management at New York University. “It’s certainly better to go with the technology of the future than the technology of the past.”

The task force has recommended an E-ZPass or camera system to charge fees, which could generate up to \$1.1 billion annually for New York’s troubled subway. It did not estimate expenses, but start-up costs for congestion zones in London, Singapore and Stockholm were between \$110 million and \$237 million, according to an analysis.

Peter Ajemian, a spokesman for Gov. Andrew M. Cuomo, said Mr. Cuomo was not committed to any specific technology and ongoing negotiations with the State Legislature “include discussions about funding and technology.”

Technology is the backbone of congestion pricing, providing the tools for a market-based approach long espoused by economists and urban planners. The basic idea is that charging a fee at peak traffic times can influence driver behavior so not everyone ends up on the same spit of asphalt, in the same way that hotels and airlines raise prices during holidays to manage limited inventories. With the inception of electronic tolling in the United States in 1989, there was finally a convenient way to do that with roads, said Ginger Goodin, a senior research engineer at Texas A & M Transportation Institute.

“All of that theory has always been there, but it wasn’t until we had electronic toll collection that we began to see some of these projects take off,” she said.

Throughout the country, the fees are typically charged using E-ZPass or a similar system of electronic readers mounted on overhead gantries to communicate with transponders or stickers with smart chips placed inside vehicles, Ms. Goodin said. License-plate cameras enable vehicles without transponders to be billed by mail.

One of the earliest uses of congestion pricing was on California's car-clogged freeways. In 1995, tolled express lanes were built alongside regular lanes on 10 miles of State Road 91 in Orange County; Last year, another eight miles were added in adjoining Riverside County. The pre-scheduled tolls currently range from \$1.60 to \$10.15 in Orange County, and from \$1.45 to \$15.90 in Riverside County, with the higher prices at busier times.

Darrell E. Johnson, chief executive officer of the Orange County Transportation Authority, said express lanes have shaved up to 30 minutes off commutes, and also helped reduce congestion in the regular lanes. The tolls have generated millions of dollars — a record \$41.4 million for his county alone in 2017 — that have helped pay for improvements to the highway as well as to public transit. “Even if drivers choose to never pay for the express lanes,” he said, “they still receive benefits from those who do use them.”

These so-called price-managed lanes have spread to 42 highways in 11 states, including Texas, Georgia and Virginia, according to Pat Jones, executive director of the International Bridge, Tunnel and Turnpike Association, an industry group. “It’s a smart way to help people get where they’re going and alleviate congestion,” Mr. Jones said.

Increasingly, many tolled lanes use real-time congestion pricing with fees adjusted every few minutes using algorithms that reflect traffic conditions, Mr. Jones said. The fees are usually posted on signs or websites so that drivers know what they will pay.

The 11-mile MoPac Express Lanes in Austin, Tex., employ real-time pricing to manage the number of drivers entering the lanes. The tolls, from 25 cents to \$10.13, have generated more than \$1.7 million since October to help cover the cost and maintenance of the lanes. Mike Heiligenstein, the executive director of the Central Texas Regional Mobility Authority, called it the “merging of technology, the environment and travel reliability in one corridor.”

Transurban, a toll-road operator and developer, even aims to guarantee a travel speed of 65 miles per hour on 40 miles of express lanes on Interstates 495 and 95 in Northern Virginia. Despite initial skepticism, the express lanes are now heavily used,

with an average of 95,000 vehicle trips daily. “We used technology to deliver on this promise,” said Jennifer Aument, North American president of Transurban.

Tolls have ranged from 50 cents for a short drive at night to \$46.25 last November — paid by fewer than 10 drivers — after an accident snarled traffic on the express lanes and prices rose to head off congestion.

Ms. Aument said congestion pricing has redefined tolls, and made them more palatable to drivers who have come to see them as the price for a faster, more reliable trip to work, home or wherever they need to be. “It used to be about paying for the bridge,” she said. “Now it’s about managing my life.”

Still, tolled lanes have also been maligned as “Lexus lanes” that benefit those who can afford them while leaving everyone else in gridlock. A \$40 toll for a new express lane on Interstate 66 from the Beltway to downtown Washington drew howls in December. As Peter Funt, a television host, once put it, “express lanes are speeding our journey down the road — already far too well traveled — toward being a nation of haves and haves-less.”

In the United States, congestion pricing has only been tried on highways. But some advocates say ever-more-sophisticated sensor, satellite, and telecommunications technologies make it an option for congested cities, too. The proposal for a Manhattan congestion zone has drawn worldwide interest.

Rick Geddes, a professor of policy analysis and management at Cornell University, and Peter **Cramton**, a professor of economics at the University of Maryland and the University of Cologne, said new technologies could create a comprehensive congestion-pricing system for a city or region that would charge varying fees for using all the roads — not just targeted highway lanes or neighborhoods — so that drivers do not simply pile onto free roads and cause traffic jams elsewhere.

Mr. Geddes said the proposed Manhattan congestion zone was a step in this direction, though it was still “at a very basic level.”

But Samuel I. Schwartz, a task force member and traffic expert known as Gridlock Sam, said the city could not afford to wait for developing technologies that could take years to perfect. He added that once a congestion zone was in place, other technologies could be explored to enable real-time pricing or fees based on time and mileage. “We have our hands full just getting across the finish line,” he said. “We’re in a crisis now so we need something fast.”

The advantage of E-ZPass is that it is a known quantity. Last year, the Metropolitan Transportation Authority converted all nine of its bridges and tunnels to an open-road, cashless tolling system using E-ZPass. It spent about \$80 million on technology, including building gantries to mount the latest generation of E-ZPass readers and license-plate cameras.

The transition has not been without issues. Some drivers have complained about glitches in cashless tolling, saying they were not aware that payments did not go through until they received hefty late fines in the mail — in response, the M.T.A. has forgiven some of the violations. An audit by Thomas P. DiNapoli, the state comptroller, has also raised questions about the authority’s ability to collect unpaid tolls and fines.

M.T.A. officials said there have been relatively few problems overall, and the result has been fewer chokepoints and shorter commutes, with drivers saving an average of 20 hours over a year. Even though E-ZPass is not new, “it’s pretty tried and true and reliable,” said Cedrick Fulton, president of M.T.A. Bridges and Tunnels.

The \$6.6-million Midtown in Motion program relies on 60 E-ZPass readers — resembling rectangular pizza boxes — that work with traffic cameras and motion sensors to monitor more than 350 blocks traveled by an average of 700,000 vehicles a day. The E-ZPass signals are scrambled so vehicles cannot be identified.

John Tipaldo, an associate deputy commissioner for traffic operations, said that without this automated system “it would be a higher level of congestion and spread out in more areas than before.”

Still, some critics point out that a congestion zone built on E-ZPass would require far more infrastructure — readers, gantries, license-plate cameras — on

already-cluttered streets. Hugh O’Neill, a consultant on transportation issues, said that would be inefficient and impractical.

“I don’t see how you can have E-ZPass readers everywhere — which you would need,” Mr. O’Neill said. “I think the answer in the long run is sensors and GPS technology. We’re not far away from having a more sophisticated system for charging trips.”

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