

E-470's tolling helped pioneer new way of funding transportation

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Cars zoom past an E-470 toll plaza in an express lane, where drivers can continue at 70 mph as long as they have an express toll transponder. (Cyrus McCrimmon, Denver Post file photo)

By John McCuskey and Patrick Jones
Guest Commentary

Modern highway tolling is about people, technology and innovation, so it's no surprise that the worldwide tolling industry would come to the Mile High City to hold a major conference. At a time when the United States faces huge challenges in managing and funding its highways, some of the most creative solutions were born here in the Denver metropolitan area.

Denver's E-470 Public Highway Authority built a 47-mile, controlled-access toll road serving the eastern part of the region to relieve congestion on existing roadways and provide a crucial link to Denver International Airport.

And to sweeten the deal, communities in Adams, Arapahoe and Douglas Counties financed the road without state or federal tax dollars, emphasizing a growing trend toward local and state leadership in transportation funding.

When the first segment of E-470 opened in 1991, it helped pioneer a new way of paying tolls, offering the option of non-stop toll payment at highway speeds through use of windshield-mounted radio frequency identification (RFID) transponders alongside the traditional option of manual cash payment.

E-470's commitment to customer convenience didn't stop there. When it introduced license plate toll in 2009, which took the place of manual tolling for customers without transponders, E-470's all electronic toll (AET) system became one of North America's first cashless toll roads, allowing *all* users to travel the system at highway speeds without stopping and waiting to pay a toll.

While E-470 customers appreciate the advantages of non-stop cashless tolling, what is less visible is the technological ingenuity and enterprising spirit that makes AET possible. AET and

license plate toll bring new challenges in operations, billing and customer service. In addressing and solving these challenges, E-470 is helping to draw a road map for the rest of the tolling industry.

E-470 is also creating working relationships with motor vehicle departments and tolling agencies in surrounding states to help lay the groundwork for nationwide interoperability of electronic toll collection systems, a goal established by Congress when it passed the major highway funding reauthorization law, MAP-21, last year.

AET systems like E-470, Denver's Northwest Parkway and the I-25 express lanes eliminate cash toll collection by using radio frequency identification (RFID) transponders or license plate recognition to identify vehicles when they enter and exit the road.

AET is also the cornerstone for another innovation that is sweeping the U.S. Priced managed lanes, which are a special type of toll lane in which the toll rate changes based on the level of traffic, give drivers the opportunity to avoid the congestion of general purpose lanes. When highways are congested and there's no space to expand them, drivers can use priced managed lanes if their vehicle has at least two or three occupants, or by paying a toll, as they do on the Colorado Department of Transportation's I-25 HOV Express Lanes. When drivers pay a toll on a priced managed lane, AET is the technology that makes it possible to enter and exit the lane, quickly and safely.

With dozens of projects in operation and many more on the drawing boards, price-managed lanes are a preferred strategy for accommodating high traffic volumes in built-up metropolitan areas.

The years ahead will call for tough funding decisions to keep our roads safe and reliable. Gas tax revenues are declining because of changes in driving patterns and the rise of alternate-fuel vehicles. State governments are finding it more and more difficult to pay for routine maintenance and needed upgrades using gas taxes or general fund revenues alone. All of these factors make tolling an important tool in the transportation funding toolbox. All electronic tolling has made Colorado a leader in user-financed transportation.

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