

## Mass Gov Patrick highlights AET conversion and Turnpike project in Allston to exploit change

October 24, 2013 By Peter Samuel TOLLROADSNews

2013-10-23: Governor Deval Patrick this week highlighted all-electronic tolling conversion on the Massachusetts Turnpike and announced a new \$260 million project in Allston to take advantage of the closure of the several toll plazas there. He was making a major speech on his transportation policy initiatives at the Greater Boston Chamber of Commerce. This follows quickly on the reinstatement of toll collection for cars on the western end of the Turnpike, and improved revenues.

The Governor highlighted the Tobin Bridge as the first stop-to-pay plaza to go - with testing of AET systems to begin in January to go live in March next year. The Tobin will be the pilot project for the complete conversion of the Massachusetts toll network which will be implemented progressively through 2016. Conversion will move westward starting with the point tolls at Boston Harbor's three tunnels going into the Extension and its mainline or point tolls, with the trip/ticket tolling system west of Boston being last.

It's an approximate \$100m project. Just over 400 toll collector jobs will end.

### **Allston interchange rebuild and mainline straightening**

Also Patrick announced an immediate start on planning and permitting for a straightening of the Turnpike for about half a mile through Allston just west of downtown Boston. The Turnpike presently jogs north at this point to a mainline stop/roll-through toll plaza and two ancillary plazas on major ramps. There is a bunch of ramps including several loops, and the whole IC/toll plaza complex takes up a lot of valuable real estate.

The project called the Allston Interchange or Allston Straightening is a rebuild of an elevated half a mile of the Turnpike that sits on about 30 structurally deficient spans that go back to original construction in the 1960s. The alternatives analysis is looking at different ramp arrangements to maintain local connections to major roads including Cambridge Road which bridges the Charles River nearby leading to the main Harvard campus (see nearby.)

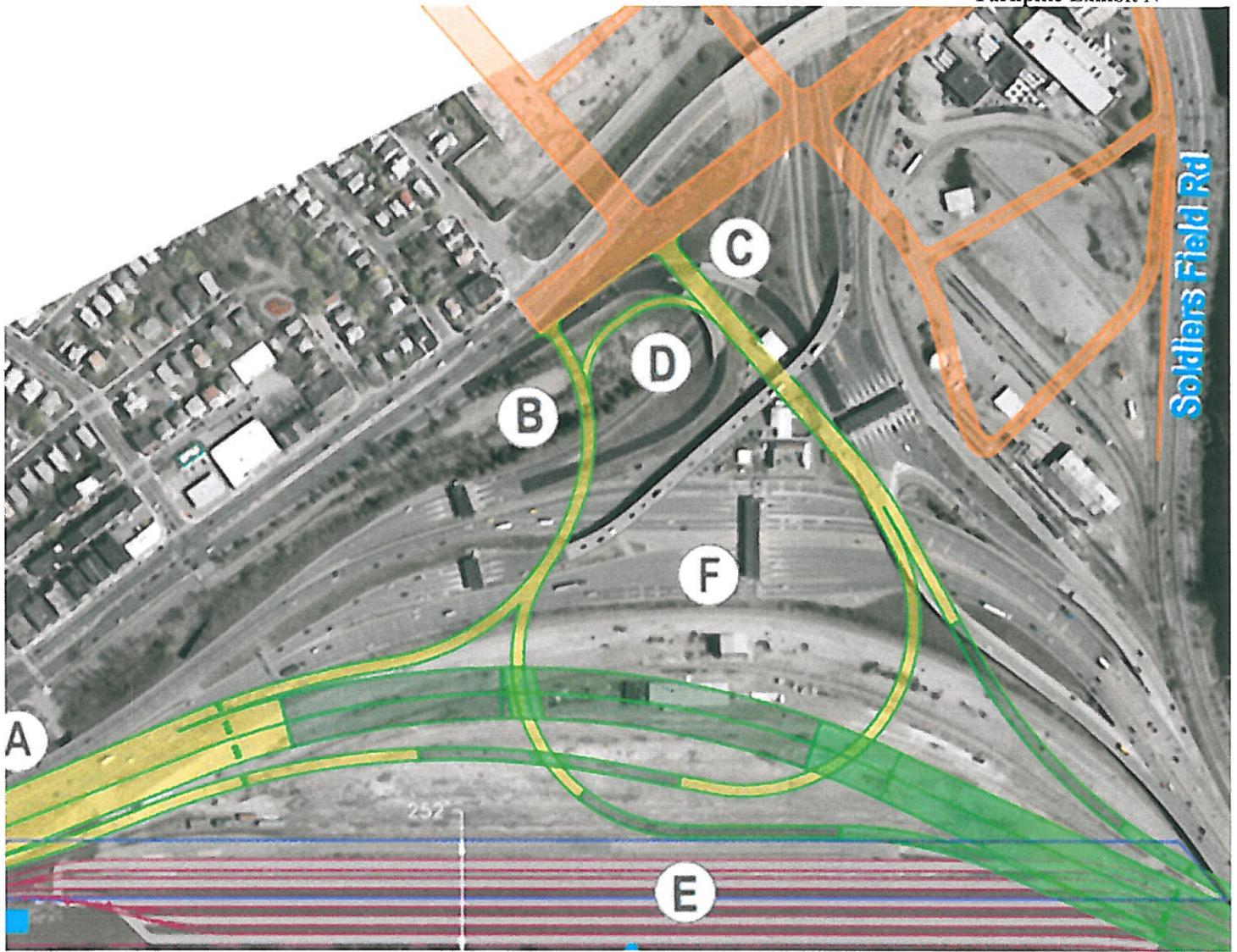
The straightening of the mainline and elimination of the three toll plazas and complex ramps will free up some 60 acres of land for urban development, both housing and commercial. A small new roadway grid will be built to service the new development.

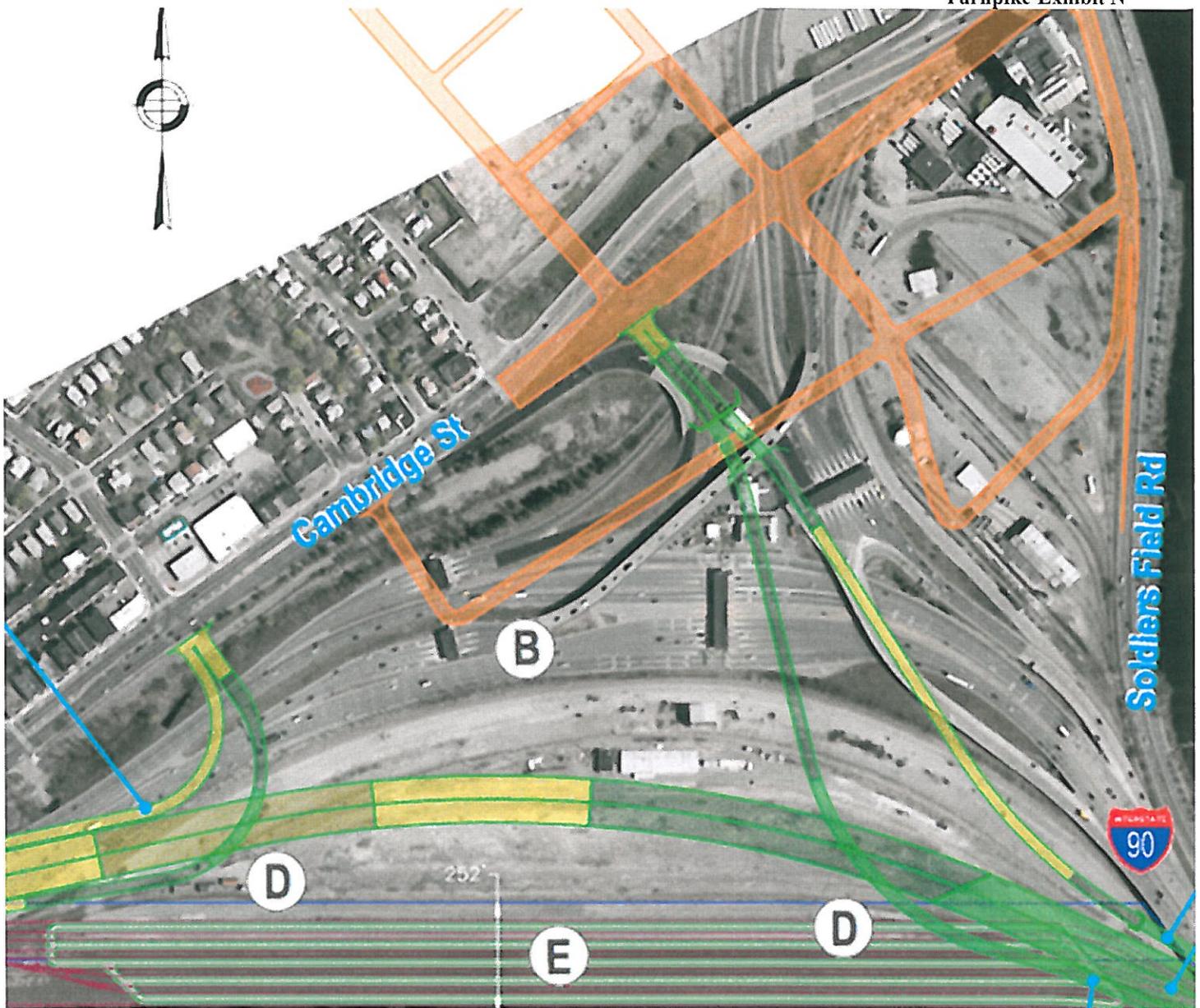
Target date for construction is the fall of 2016, allowing three years for alternatives analysis, public consultation, permitting, detailed design and contracts.

The highways division of MassDOT has an ongoing study for modernizing and relocating ramps at other points in this inner urban segment of the Turnpike - the Boston Ramps study.

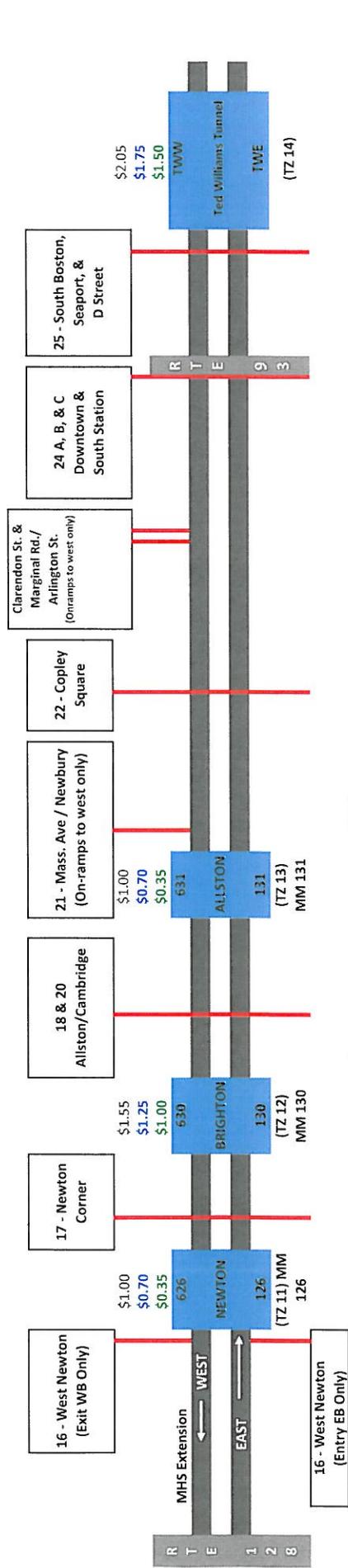
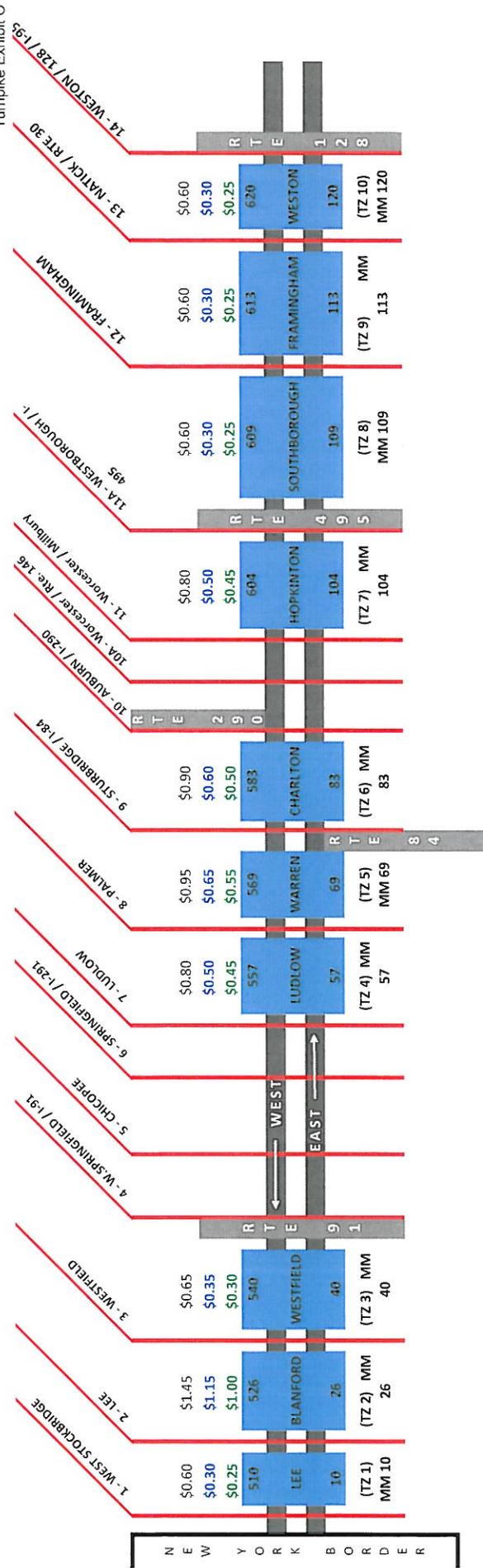
Two alternative concepts for the rebuild at Allston are shown nearby.

<http://www.massdot.state.ma.us/bostonramps/Home.aspx>





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**2-Axle PASSENGER RATES:**  
 Pay by Plate  
 E-ZPass Other  
 E-ZPass MA

**TZ = New AET Toll Zone Number**  
 Blue Box = AET TZ Town w/JAG Plaza Codes  
 Red Line = Entry/Exit Points  
 MM = Mile Marker

**STW - Summer Tunnel**  
 CTE - Callahan Tunnel  
 (TZ 16)

**TLN - Tobin Local North**  
 TCN - Tobin Central North  
 TLS - Tobin Local South  
 TCS - Tobin Central South  
 (TZ 15)

March 5, 2017

## From MassDOT's website

## Page One

**Transponder Fees**

Transponders provided at initial sign-up – No charge  
 Request for additional transponders - No charge  
 Lost, stolen, damaged or defaced transponders - Customer will be charged the cost of a replacement at the time of account closure.

**E-ZPass MA Statements**

Online - No charge  
 Mailed - \$0.60 per statement

**Annual Tax Deduction Statement**

Online - No Charge  
 Mailed or Faxed - Private Individual Account - \$2.00

**Other Fees**

Returned unpaid check - \$25.00  
 Excessive Image Toll – \$1.00 per image trip, after 3 image trips for a license plate in a calendar month per account starting with the third image trip for a license plate in a calendar month per account. (An image trip occurs when a transponder is not identified in the vehicle)  
 V-Toll - A V-Toll posted by license plate indicates that your transponder did not read as you passed under an EZDriveMA toll zone. You will be charged a V-Toll fee of a \$1.00 for every V-Toll after 2 per calendar month. You should be sure that your transponder is properly attached to your windshield at all times. If you think that your transponder is defective, you should bring it to the nearest Customer Service Center to be tested. Should the transponder be defective, it will be exchanged at no charge, providing the transponder is not damaged or defaced.

Retail Cash Payment Location: A convenience fee of \$1.95 will be charge for each E-ZPass MA Replenishment.

**Note:** Fee amounts are subject to change at any time.

## Page Two

In 2012, MassDOT decided to transition to an all-electronic tolling system for the Massachusetts Turnpike (I-90) as well as all of the Boston tunnels and the Tobin Memorial Bridge. This program is now known as EZDriveMA. The primary purpose of EZDriveMA is to increase safety and convenience for the traveling public by eliminating the sometimes dramatic speed reductions and congestion that occur at toll plazas. Studies have shown this to be a significant source of crashes. The program will improve safety since crashes occur more frequently both in the approaches to toll booths and as vehicles exit the toll booths and move into travel lanes. Additionally, EZDriveMA will improve air quality by reducing emissions from vehicles idling in toll lanes and by eliminating the stop and go traffic in manual collection toll lanes as well as in existing E-ZPass lanes, where drivers must now reduce their speed to 15 miles per hour. The program will save the motoring public more than 800 hours of time every day, or 280,000 hours per year. The system will also save drivers up to 875,000 gallons of gasoline per year.

**Tolling Locations**

An EZDriveMA tolling location consists of a gantry, mounted over the roadway, which holds equipment to read the E-ZPass transponders as they pass under the gantry, as well as cameras to capture images of the vehicle's license plate.

As you travel under a tolling location:

If you have an E-ZPass account in good standing, your transponder is read and the toll is automatically charged to your E-ZPass account.

If you have a Registered Pay By Plate account in good standing, an image of your license plate is taken and the toll is automatically charged to your account.

If you do not have an E-ZPass or Registered Pay By Plate account in good standing, an image of your license plate is taken and the registered owner of the vehicle or responsible party is mailed a Pay By Plate MA invoice.

The toll amount for your trip is calculated by the EZDriveMA system based on the gantries you traveled under.

### **Tolling Rates**

The goal in setting the new rates at each tolling location is to remain revenue neutral, maintaining existing revenue collection to be substantially equal to prior revenue. The toll amount charged for individual trips may decrease, stay the same or increase since tolling locations may change. Rates will be set so that E-ZPass MA account holders traveling from the New York border to Boston will pay a lower toll under the new toll rates. Under EZDriveMA the Tobin Bridge, the Sumner, Callahan, and Ted Williams Tunnels will be tolled in both directions. The current toll will be split equally so that E-ZPass MA customers will pay the same amount roundtrip as today.

### **Toll Plaza Demolition Project**

The Toll Plaza Demolition and Roadway Reconstruction project, to demolish the existing toll plazas on the Massachusetts Turnpike (I-90), begins on October 28, 2016. The project will proceed in two stages and all work is anticipated to be completed by the end of 2017. Visit the [Toll Plaza Demolition Project webpage](#) to learn more.

Page Three

Pay By Plate MA is the toll payment option where photographic or video images of vehicles and license plates are used to either post toll transactions to a valid Registered Pay By Plate MA account or to obtain the name and address of the registered vehicle owner in order to issue an invoice to collect tolls and related fees. Pay By Plate MA is only valid on MassDOT roadways.

Due to the additional processing cost related to Pay By Plate MA, customers will pay a [higher toll rate](#).

### **Pay By Plate MA Accounts/Payment Options**

#### **Pay By Plate Invoice Account**

This is the default account type (no customer action is required for this account type) which is created automatically by the system if your license plate is not listed on any other valid toll payment account, such as E-ZPass or Registered Pay By Plate MA. Vehicle information is obtained through a license plate look-up and an invoice is mailed to the registered owner of the vehicle. An invoice fee will be charged.

To avoid invoice fees, please sign up for E-ZPass MA or any of the Registered Pay By Plate accounts options listed below.

Invoice payments can be made online, by mailing a check to the Commonwealth of Massachusetts, EZDriveMA Payment Processing Center, P.O. Box 847840, Boston, MA 02284-7840 or paying by cash or credit/debit card at any of our [Customer Service Centers](#).

Customers paying by cash can also pay their Registered Pay By Plate MA invoice at [Retail Cash Payment locations](#). A convenience fee of \$2.95 for each invoice payment will be charged at these locations.

#### **Registered Pay By Plate MA Account – Automatic Prepaid Replenishment**

Assign a credit/debit card or checking account number to your account. The assigned account will be charged the initial payment. As tolls are incurred, they are automatically deducted from the initial payment. When your account balance becomes low, your account will be automatically replenished through your assigned account.

#### **Registered Pay By Plate MA Account – Manual Prepaid Account Replenishment**

Open your account with an initial payment. As tolls are incurred they are automatically deducted from the initial payment. It is your responsibility to maintain a sufficient account balance to cover your toll usage. You can track your account balance online, by calling customer service or by signing up for text/email alerts.

Replenishment payments can be made online, by mailing a check to the EZDriveMA Customer Service Center, P.O. Box 8007, Auburn, Massachusetts 01501-8007 or paying by cash or credit/debit card at any of our [Customer Service Centers](#).

Customers paying by cash can replenish their Registered Pay By Plate MA accounts at [Retail Cash Payment locations](#). A convenience fee of \$1.95 for each replenishment will be charged.

#### **Registered Pay By Plate MA Account – Automatic Postpaid Payment**

Assign a credit/debit card or checking account number to your account. Your assigned account will be charged for your toll usage at the end of your 30-day invoice cycle.

#### **Registered Pay By Plate MA Account – Manual Postpaid**

Your invoice will be mailed to you on a 30-day invoice cycle. Please be sure to pay before the due date to avoid additional fees.

### Review and Comment on AECOM Report: Feasibility of Implementing Statewide Tolling Strategy - Western Turnpike (July 2012)

In the course of evaluating the practicability of AET and at the York Plaza on the Maine Turnpike, the following question has arisen: Why is AET the preferred alternative for the Massachusetts Turnpike but not practicable at the York Plaza?

In an effort to address that question CDM Smith conducted a review of the July 2012 AECOM report titled "Feasibility of Implementing Statewide Tolling Strategy - Western Turnpike" produced for MassDOT. The AECOM report evaluated several AET and ORT alternatives in comparison with a No-build alternative. It was determined that AET was the recommended alternative. The following presents the key factors and assumptions used to support that determination, including system configuration, leakage assumptions, and cost assumptions.

#### **Existing Toll System Challenges**

The MassPike's Western Turnpike is a ticket system toll road. Ticket system toll collection is the slowest of all cash toll collection methods limiting plaza throughput and contributing to congestion at tolling points. Adding to this operational challenge are "trumpet" type interchanges. Each Interchange funnels all movements, entry and exit, east-bound and west-bound, into a single toll collection point. Tight-radius curves, short approaches and weaving common to trumpet interchanges also contribute to operational difficulty at tolled interchanges. The AECOM report identified 10 interchanges where queues of 0.5 miles or more occur during at least one of the peak periods. These challenges incentivized conversion to some form of mainline tolling. For this and other reasons, doing nothing was identified as the worst alternative. AET, in particular, was viewed as the best alternative to alleviate these operational limitation of the current system. No such operational issues exist at the York toll plaza.

Relatedly, the relatively slow cash collection that results from the MassPike's ticket system of operation (a separate rate is calculated for each movement), relatively high toll collection staff needs are required to maintain minimum levels of throughput. Because of this, conversion to AET on the MassPike would result in much greater savings in toll collection costs than is the case for the Maine Turnpike at the York toll plaza.

#### **Negative Impact of a Mixed Tolling System**

The AECOM report points out that "Toll collection operations between all seventeen toll locations on the Western Turnpike are closely linked, and improvements made to individual toll locations or interchanges in isolation could have negligible benefits, if not negative impacts, throughout the system". In other words, implementation of AET in isolation could be detrimental. This is exactly what would happen on the Maine Turnpike if York is converted to AET while the rest of the system maintains the current cash/ETC collection options.

#### **Leakage Assumptions**

The portion of toll revenue most at risk under AET operations is the video (current cash customers) component. The higher the proportion of toll revenue attributable to video, the higher the proportion of revenue that will be lost to leakage. Leakage occurs through unbillable transactions (bad license plate images, no DMV records) or uncollectible invoices (wrong DMV

address, refusal to pay invoice). On the MassPike only about 28 percent of transactions are cash transactions. At the York toll plaza, that number amounts to 36 percent. So, even assuming equal leakage rates, total revenue leakage at York would be greater than on the MassPike.

The AECOM report also assumes lower video revenue leakage rates compared to those assumed at the York toll plaza. The AECOM report assumed that only about 30 percent of video revenue would be lost. The CDM Smith analysis estimated that approximately 42 percent of video revenue would be lost. The combination of a higher percent of revenue coming from video transactions and higher revenue leakage rates results in significantly higher revenue leakage assumptions at the York toll plaza. To put this into perspective, actual operating experience at the Tobin Bridge shows that roughly 50 percent of video invoices remain unpaid. Based on this, and the experience at other AET facilities in the U.S., it would appear that rather conservative revenue leakage assumptions were used in the AECOM report for video revenue leakage.

### **Surcharge and Toll Diversion Assumptions**

It is interesting that no toll diversion was assumed in the AECOM report. This was because it was deemed that the current toll rate structure was sufficient under AET. No video surcharges (i.e., toll increases on current cash customers) were deemed necessary to make up for AET revenue leakage. This was in spite of the fact that in reviewing the state of the practice, the AECOM report recognizes a video-toll surcharge is in place on all currently operating facilities that employ video toll collection. The AECOM report cites the Tobin Bridge AET feasibility study in which it was estimated that a \$2.00 video toll surcharge would be necessary to offset video toll leakage. The current actual Tobin video surcharge is \$0.50 (or 20 percent) higher than the ETC rate. As noted above, however, current data shows that about 50 percent of Tobin video toll revenue goes uncollected.

Despite these acknowledgements, the AECOM analysis projected that no video surcharges would be required for AET to be financially feasible. This conclusion appears to be based primarily on optimistic video toll leakage and diversion assumptions that are not supported by the experience of currently operating AET facilities, including on the Tobin Bridge.

Estimated revenue leakage levels at the York toll plaza resulted in the need for rather substantial video toll surcharges to make up for that lost revenue. Those higher video rates, in turn, resulted in additional revenue loss due to toll diversion. Financial feasibility at the York toll plaza is only realized once the significant video surcharge is assumed.

Gary Quinlan  
CDM Smith

July 22, 2016  
From Gary Quinlan

I also thought you, and your staff, would be interested in the recent North Texas Tollway Authority (NTTA) document in the link below. This is essentially an update of a similar report they did in 2011. It covers many aspects of their system, but I was particularly interested in their discussion of the need to increase their video (which they call ZipCash) toll rates to cover the revenue leakage they incur. They provide a very detailed breakdown of non-pursuable video transactions and paid versus unpaid video invoices. It is very uncommon among toll facility to provide this level of transparency. See the figure on page 16 for the flow chart which identifies video leakage rates. It is interesting in that it compares current values with those from their 2011 report. The two last rows in the figure (Out of State and In State) refer to un-pursuable transactions due to lack of DMV records.

[https://www.ntta.org/whoweare/boardofdirectors/Documents/2016/NTTA\\_2016\\_County\\_Review\\_Full\\_Report\\_07.2016.pdf](https://www.ntta.org/whoweare/boardofdirectors/Documents/2016/NTTA_2016_County_Review_Full_Report_07.2016.pdf)

The complete video revenue leakage picture and justification for a higher video surcharge is shown in the table on page 23. Here they show that ultimately, they collect about 55 percent of the theoretical toll from each video transaction. In other words, total video revenue leakage amounts to about 45 percent. In the end, they show the need to increase the video surcharge from about 57 percent to about 90 percent in order to achieve revenue neutrality with ETC (or TollTag, as they call it) rates.

In the end, our analysis of the revenue leakage at York and the recommended video surcharge is very similar to that for NTTA. We estimated that a total of 42.2 percent of York video tolls would be uncollected (versus 45 percent for NTTA facilities) and we recommended a 100 percent video toll surcharge to make up for revenue leakage (versus a 90 percent recommended video surcharge for NTTA facilities). Perhaps this is just a coincidence, but it does support the fact that the level of revenue leakage and associated video surcharge we are recommending are not outside the limits of what other facilities experience. There certainly are many AET facilities with less than 100 percent video surcharges, but I suspect that in many of those cases, the ETC rates are subsidizing losses incurred by the video transactions or they simply accept that there will be a net loss of revenue (in the case of facilities that are converting to AET).