

# All Electronic Tolling August 22, 2016

*Rate Setting*

# Setting Gantry Rates



- The proposed gantry rates are being shown and discussed publicly for the first time at the August 22<sup>nd</sup> MassDOT Board meeting.
  - No Board action is required at this time
- A revision of the existing toll structure is discussed in MGL Chapter 6C, Section 3, and requires MassDOT to hold at least 2 public hearings that take place 30 days prior to effective date of a change in the toll structure, and allow for a 14 day public comment period.
- MassDOT will hold seven meetings after Labor Day to present the rates and fee and receive feedback
- The rates and fees will be voted on at the October 6<sup>th</sup> Board meeting
- Note: the late fees associated with unpaid tolls for Pay By Plate customers are set through a separate process and MassDOT intends on maintaining the existing structure already in place on the Tobin Bridge.

## Goal: Maintaining current toll revenues and proportions

- The gantry rate proposal has been designed to maintain existing revenue levels across the whole system , as well as the current proportion of total revenue generated by the Western Turnpike and Metropolitan Highway System.
- The commitment to a **revenue neutral program** means that rates will be set such that a *passenger vehicle with a Massachusetts E-ZPass* driving from one end of I-90 to the other will pay no more than the same amount as they do today
  - Under the proposed rates passenger vehicles with E-ZPassMA will pay \$0.45 less than they do today to go from the NY border to Boston
  - Due to location of the gantries selected by the previous administration, many existing trips will go up or down in cost. Some un-tolled movements will become tolled, and vice versa.
- The Tobin Bridge and Sumner/Callahan, and Ted Williams Tunnel will be tolled in both directions, with the toll split  $\frac{1}{2}$  and  $\frac{1}{2}$  so customers pay the same roundtrip amount as today if they use E-ZPass MA.
- The roundtrip cost under the Resident Discount Program will remain the same for those with resident discount transponders.

## Current Toll Rates



- The current full length toll (NY to Boston) for E-ZPass MA drivers is \$6.60. This does not include tolls on the Tobin Bridge or Tunnels.
- The full length Western Turnpike toll is \$4.70 and the full length Metropolitan Highway System toll is \$2.00. A \$0.10 discount assessed for traveling across both facilities at the Weston plaza (IC15)
- Western Turnpike -- distance-based fee structure based on entry and exit points, and the marginal per mile cost drops the further someone travels.
  - No E-ZPass MA discount
  - No higher tolls above 5+ axle vehicles<sup>1</sup>
  - No commercial rate differential
- Metropolitan Highway System -- toll is \$1.25 at Weston and \$1.25 at Allston/Brighton
  - E-ZPass MA passenger vehicles receive a \$0.25 discount at each facility<sup>2</sup>
  - Tolls increase consistently above 5+ axles
- Sumner/Callahan and Ted William Tunnel tolls are \$3.50 for cash and out of state E-ZPass customers, and \$3.00 for E-ZPass MA.
- On the Tobin Bridge, all E-ZPass customers pay \$2.50 and Pay by Plate customers pay \$3.00

<sup>1</sup> With the exception of tandem trucks, which account for a small % of trips on WT

<sup>2</sup> Legislatively required discount program (Chapter 6C, Section 13b)

## How Many Different Rates Will Apply at Each Gantry?

MassDOT's proposal is to have three rates at each gantry:

- One rate is for users of E-ZPass transponders issued by the Commonwealth (E-ZPassMA)
- One rate is for users of compatible E-ZPass transponders issued by other states
- One rate is for vehicles that do not have any transponder and will be billed using the Pay-By-Plate system
  - As explained later, these vehicles will pay the PBP gantry rate and a fee on their first bill associated with the costs mailing an invoice

### E-Z Pass MA

- E-ZPassMA is a transponder issued by Massachusetts. Other states also issue E-ZPass transponders. All E-ZPass Transponders are usable in every state that uses E-ZPass.
- Out of state residents may receive E-ZPassMA transponders; they are not limited to in-state residents.
- The Commonwealth can offer discounts to E-ZPassMA users without violating the U.S. Constitution's Interstate Commerce Clause because the discount is available to a resident of any state, should they get an E-ZPassMA Transponder.

# Process Used for Setting Revenue Neutral

## E-ZPassMA Rates



### Assumptions

- Full length NY-Boston trip of \$6.70 for E-ZPassMA passenger vehicles remains, at a minimum, “revenue neutral” or is reduced.
- All facilities generate comparable revenue as to today (ie: Western Turnpike drivers do not pay more tolls than they do today)
- Tunnels and Tobin Bridge are tolled equally in each direction with the roundtrip cost revenue neutral for E-ZPassMA drivers.
  - By default, these rates have already been set for E-ZPassMA drivers. (\$1.50 each way at Tunnels, and \$1.25 each way on Tobin).

### Methodology

- Gantry rates were developed by calculating the per mile cost of travel on different sections of I-90 and setting rates at each gantry to be as close to that per mile cost of travel today.
- The discount for E-ZPassMA users currently applied only at the Weston and Allston/Brighton tolls is applied to all E-ZPassMA customers at all gantries

## How do the proposed rates reflect this commitment to “revenue neutrality”?



- Systemwide: Using 2015 calendar year data to project full calendar year anticipated revenue, revenue on both the Western Turnpike and Metropolitan Highway System will be roughly the same after AET as it is with current tolls:
  - Western Turnpike calendar year revenue with current tolls: \$128.1M
  - Western Turnpike projected calendar year revenue with AET: \$127.7M
  
  - Metropolitan Highway System calendar year revenue w/current tolls: \$225.0M
  - Metropolitan Highway System calendar year revenue with AET: \$216.3M
  
- End-to-End
  - Current toll from NY border to Boston with E-ZPassMA: \$6.60
  - Proposed AET from NY border to Boston with E-ZPassMA: \$6.15
  
  - Western Turnpike current toll from NY border to Weston w/E-ZPassMA: \$4.70
  - Western Turnpike proposed AET from NY border to Boston w/E-ZPassMA: \$4.45
  
  - MHS current toll from Weston to downtown Boston w/E-ZPassMA: \$2.00
  - MHS proposed AET from Weston to downtown Boston w/E-ZPassMA: \$1.70

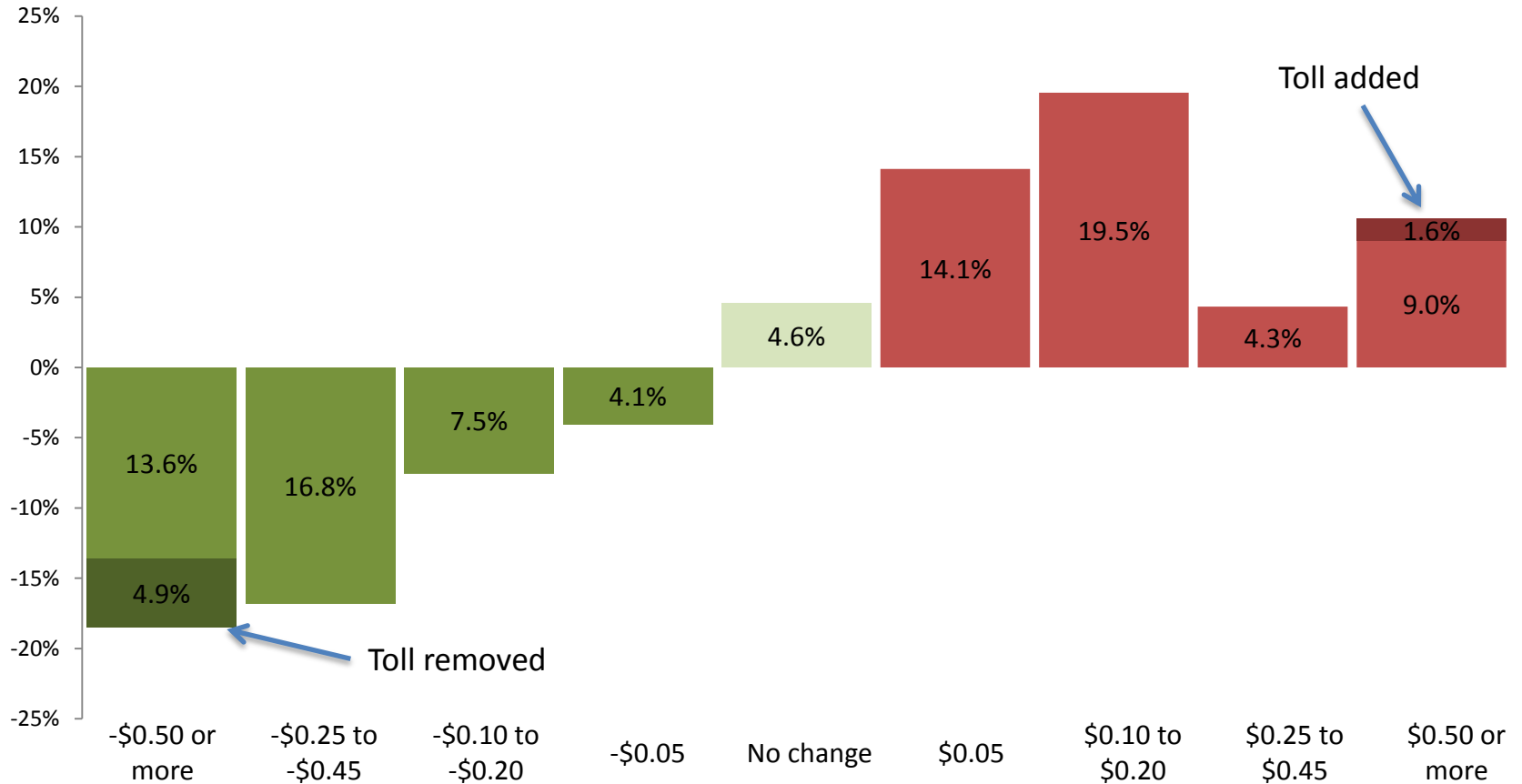
## How will proposed rates affect specific trips?



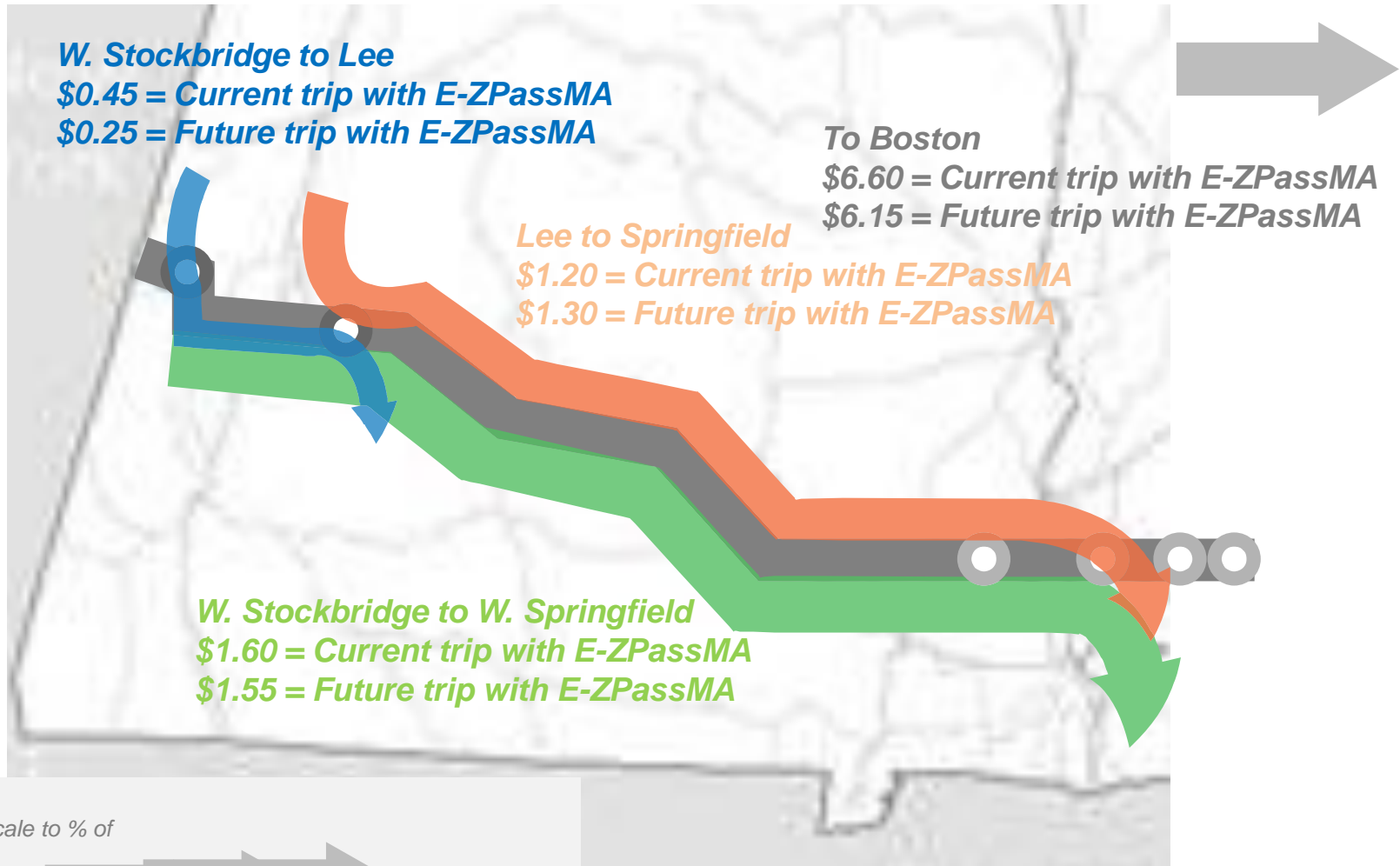
- Individual drivers may see their tolls decrease, stay the same or increase for a given trip from point to point within the Turnpike since tolls will be charged and collected at gantries that vary from current toll locations. This change in the location of toll collections required MassDOT to set the rates that will be charged at each gantry.
  
- The data presented on the next slide illustrates how the cost of trips under the proposed E-ZPassMA rates will compare with current trip costs:
  - The cost of 46.9% of trips will decrease
  - The cost of 4.6% of trips will remain the same
  - The cost of 14.1% of trips will increase by 5 cents
  - The cost of 5% of trips will increase by 10 cents
  
- MassDOT has also developed a set of regional maps to demonstrate how the cost of commonly made trips in different regions will be affected by the proposed rates



**Under the proposed rates, the majority (51.5%) of E-ZPass MA trips will either see a decrease or stay the same**



# Berkshire region trips



Arrow relative scale to % of regional entries

20% of entries

# Springfield Metro region trips

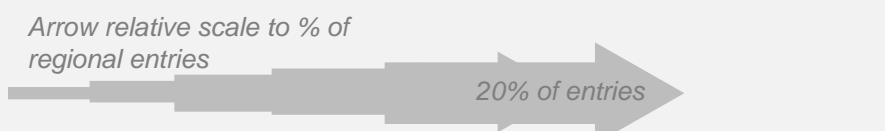
*To New York*  
**\$2.15 = Current trip with E-ZPassMA**  
**\$2.00 = Future trip with E-ZPassMA**

*To Boston*  
**\$4.90 = Current trip with E-ZPassMA**  
**\$4.90 = Future trip with E-ZPassMA**

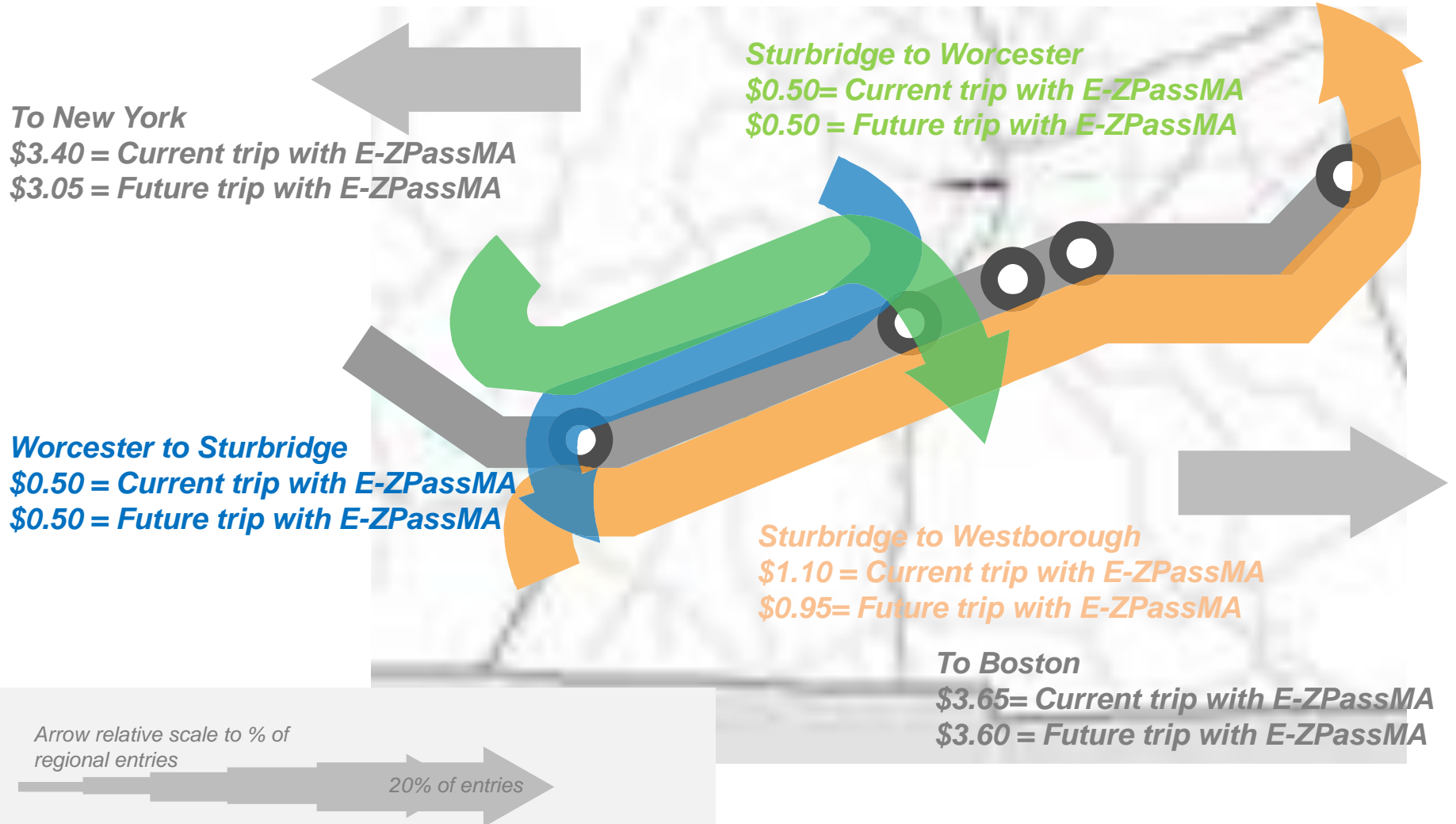
*Westfield to W. Springfield*  
**\$0.25 = Current trip with E-ZPassMA**  
**\$0.30 = Future trip with E-ZPassMA**

*W. Springfield to Westfield*  
**\$0.25 = Current trip with E-ZPassMA**  
**\$0.30 = Future trip with E-ZPassMA**

*Palmer to Springfield*  
**\$0.45 = Current trip with E-ZPassMA**  
**\$0.45 = Future trip with E-ZPassMA**



# Worcester Metro region trips



# Metro West region trips

**To New York**  
 \$4.20 = Current trip with E-ZPassMA  
 \$4.00 = Future trip with E-ZPassMA

**Westborough to Weston**  
 \$0.70 = Current trip with E-ZPassMA  
 \$0.95 = Future trip with E-ZPassMA

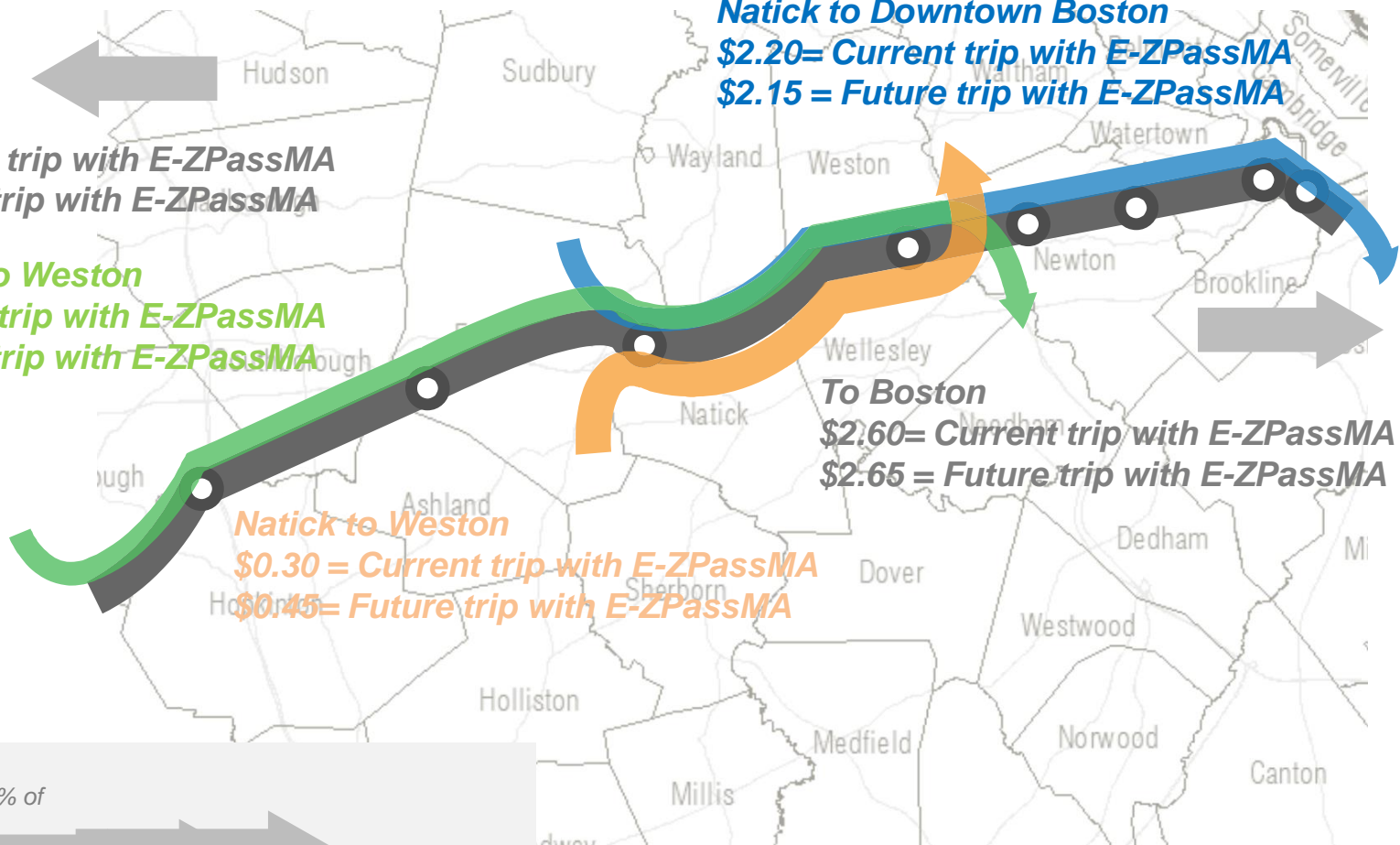
**Natick to Downtown Boston**  
 \$2.20 = Current trip with E-ZPassMA  
 \$2.15 = Future trip with E-ZPassMA

**Natick to Weston**  
 \$0.30 = Current trip with E-ZPassMA  
 \$0.45 = Future trip with E-ZPassMA

**To Boston**  
 \$2.60 = Current trip with E-ZPassMA  
 \$2.65 = Future trip with E-ZPassMA

Arrow relative scale to % of regional entries

20% of entries

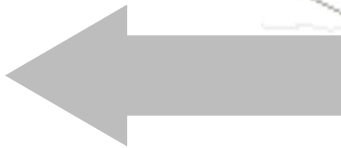


# 128 and Newton trips

To New York

\$5.60 = Current trip with E-ZPassMA

\$4.65 = Future trip with E-ZPassMA



Weston to Downtown Boston  
 \$2.00 = Current trip with E-ZPassMA  
 \$1.70 = Future trip with E-ZPassMA

Weston to Natick

\$0.30 = Current trip with E-ZPassMA

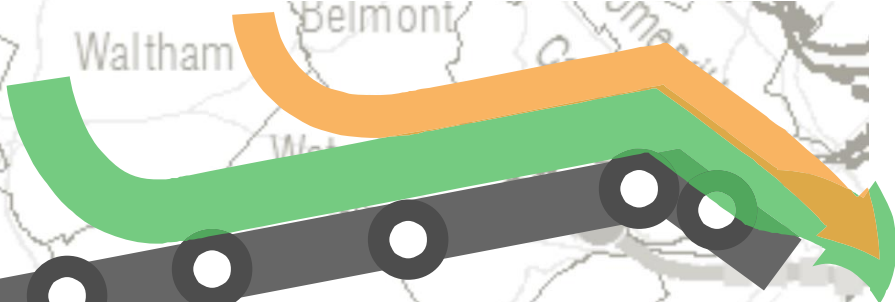
\$0.45 = Future trip with E-ZPassMA



Newton Corner to Downtown Boston

\$1.00 = Current trip with E-ZPassMA

\$1.50 = Future trip with E-ZPassMA



To Boston

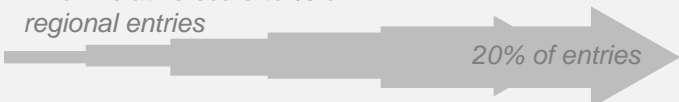
\$2.20 = Current trip with E-ZPassMA

\$1.70 = Future trip with E-ZPassMA



Arrow relative scale to % of regional entries

20% of entries





# Boston Metro region trips

**To New York**  
 \$6.60 = Current trip with E-ZPassMA  
 \$6.15 = Future trip with E-ZPassMA

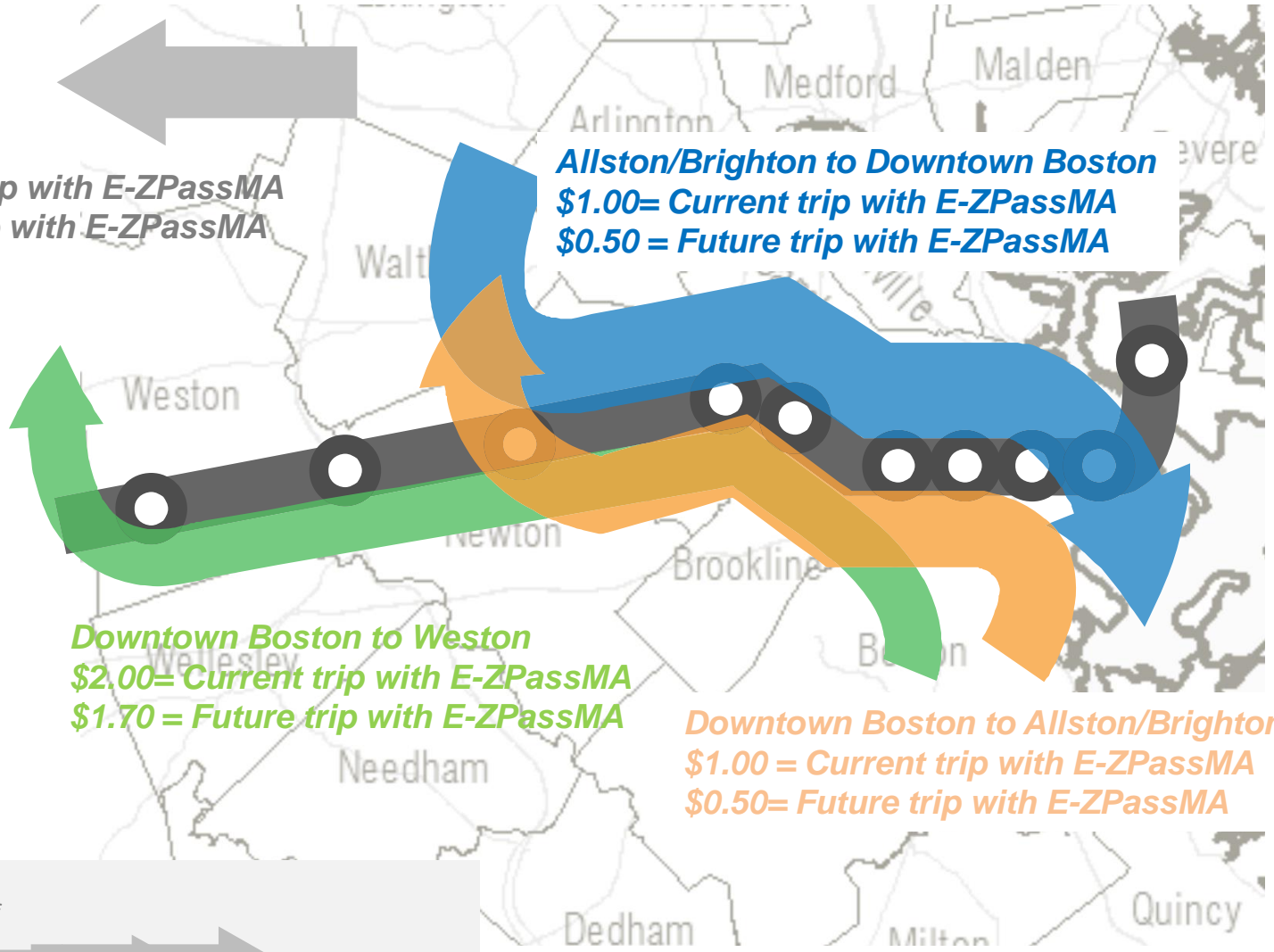
**Allston/Brighton to Downtown Boston**  
 \$1.00 = Current trip with E-ZPassMA  
 \$0.50 = Future trip with E-ZPassMA

**Downtown Boston to Weston**  
 \$2.00 = Current trip with E-ZPassMA  
 \$1.70 = Future trip with E-ZPassMA

**Downtown Boston to Allston/Brighton**  
 \$1.00 = Current trip with E-ZPassMA  
 \$0.50 = Future trip with E-ZPassMA

Arrow relative scale to % of regional entries

20% of entries



## Setting Pay By Plate Fees and “Leakage”

- Leakage is the difference between all potential revenue and what is actually collected
- When tolls are collected either by E-ZPass transponder or cash, almost all potential revenue is collected and there is very little leakage.
- The introduction of Pay By Plate introduces more leakage; to keep total revenue constant, leakage must be accounted for when Pay By Plate fees are set.
- Leakage can come from a variety of sources: non-payment, unreadable images, or incorrect addresses. Non-payment is by far the largest source of leakage.
- It is important to emphasize that not all leakage is lost revenue – it represents a snapshot in time for what has not been collected.
  - For example, leakage is calculated based on revenue received after the first bill is mailed. But MassDOT will mail 4 bills before putting a hold on at the RMV; revenue collected on the 2nd, 3rd or 4th mailing reduces the leakage percentage.



## Pay by Plate Leakage



- MassDOT's recommended Pay By Plate rates assume a conservative estimate for leakage, so that actual revenue collected from Pay By Plate customers is equal to what we would collect if they all paid.
- During the Tobin Bridge pilot "leakage" was approximately **21%** of PBP revenue (and only 4% of total revenue) but a higher leakage number was assumed on other tolled facilities (26-38%) since they are likely to attract more out-of-state Pay By Plate customers.
- Based on data collected from the Tobin Bridge, and assumptions made about the other tolled facilities, a "waterfall analysis" to estimate leakage shows that on average 35% of potential Pay By Plate revenue will go uncollected. Assuming 85% E-ZPass market share, this would represent 5% of total possible revenue.
- The analysis assumes that
  - 5- 7% of images are non-usable/unreadable
  - 1.5-2.5% of RMV records are incorrect
  - 7.5% of addresses are invalid or do not reach the addressee
  - 50-60% of bill recipients do not pay the first bill

# Strategies to Minimize Leakage



1. Violation reciprocity with other states
  - Currently Massachusetts has reciprocity with Maine and New Hampshire
  - MassDOT will be issuing letters to Connecticut, Rhode Island, and New York (states with the greatest numbers of drivers using the Turnpike) in the next week seeking to establish reciprocity agreements
  
2. Increasing E-ZPass market share
  - MassDOT is engaged in a marketing campaign to reach or exceed its goal of 85% E-ZPass market share by Go-Live
  
3. Simplifying Pay By Plate payment process
  - As part of AET, a new website is being developed to simplify the payment process
  - Based on lessons learned on the Tobin Bridge, MassDOT has already improved the envelopes and notices it mails to Pay By Plate customers
  
- Massachusetts residents who do not pay their toll will eventually have a hold on their vehicle registration renewal.

## Setting Pay by Plate fees and costs



- In addition to leakage, there are direct costs MassDOT incurs to bill Pay By Plate customers that are far greater than the cost to bill E-ZPass customers.
- Pay By Plate rates and fees are not meant to be punitive, but to cover the additional cost of processing the transaction and mailing invoices. There are costs incurred for each time a PBP customer passes under a gantry, and a cost for sending a bill at the end of the month.
- The proposed fee option was developed by studying the **additional** cost of processing Pay By Plate transactions vs. E-ZPass transactions
- In order to recover these additional costs, Pay By Plate customers will pay a higher rate at each gantry (equivalent to the per transaction cost MassDOT incurs), and a billing fee (equivalent to the cost of mailing a bill at the end of the month).
- The estimated cost for each PBP transaction is \$0.37, plus \$0.58 for mailing each bill, as demonstrated on the next slide

# Pay by Plate vs. E-ZPass Cost Analysis



Per Gantry Transaction Cost (ie: each time a driver passes under a gantry)	Per Transaction cost for Pay By Plate (cost varies by facility)	Average Per Transaction cost for Pay By Plate (avg <sup>8</sup> )	Per Transaction cost for E-ZPass	Average Per Transaction cost for E-ZPass (avg <sup>8</sup> )
Image Processing <sup>1</sup>	\$0.05-\$0.06	\$0.06	--	
Account Maintenance Fee <sup>2</sup>	--	--	\$0.03-\$0.06	\$0.03
Banking and Credit Card Fees <sup>3</sup>	\$0.01-\$0.05	\$0.02	\$0.01	\$0.01
Invoicing Processing Fee <sup>4</sup>	\$0.09-\$0.21	\$0.11	--	--
Out of State DMV Lookup Fee	\$0.01 - \$0.03	\$0.02		
Other Fees incurred to collect toll <sup>9</sup>	\$0.02- \$0.03	\$0.03	\$0.03-\$0.04	\$0.04
<b>Total Cost Per Gantry Transaction before leakage <sup>5</sup></b>	<b>\$0.22 - \$0.36</b>	<b>\$0.24</b>	<b>\$0.07-\$0.10</b>	<b>\$0.08</b>
<b>Total Cost Per Transaction including leakage</b>	<b>\$0.34-\$0.53<sup>6</sup></b>	<b>\$0.37</b>	--	<b>\$0.08</b>
<b>Cost to Issue Mail First Bill</b>	<b>Pay By Plate</b>		<b>E-ZPass</b>	
Postage Cost	\$0.58 <sup>7</sup>		\$0.00	

<sup>1</sup>Based on TransCore contract

<sup>2</sup>Based on TransCore contract

<sup>3</sup>2.1% credit card fee

<sup>4</sup>Based on TransCore contract

<sup>5</sup>Assumes average of 35% "leakage" across all toll facilities

<sup>6</sup>Based on postage cost of \$0.55 plus 5% contingency

<sup>7</sup>Jacobs assumed a higher leakage than experience on Tobin (35% vs. 24%), using the Tobin leakage number the Cost Per Transaction would be \$0.3 vs. \$0.37

<sup>8</sup>Weighted by # of PBP transactions per facility to derive average cost per transaction across all facilities

<sup>9</sup>Includes walk in centers, equipment maintenance, etc

## Recovering Pay by Plate Costs



- MassDOT is recommending a rate differential at each gantry plus a fee on the monthly invoice in order to recover Pay By Plate processing costs.
  - The proposed rates include a \$0.30 rate differential at each gantry so E-ZPass and PBP pay different rates at each location
  - In addition, MassDOT will assess a \$0.60 processing fee to cover the cost of mailing bills
- MassDOT believes this method is the fairest and most transparent way to assess the fee, since it allows customers to be charged per transaction for costs that are incurred per transaction and per invoice for costs that are incurred per invoice.

# Putting It All Together: Proposed Rate Schedule



Not Drawn to Scale

## Proposed Toll Rate Schedule

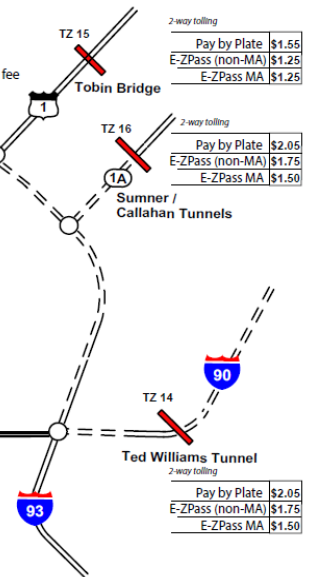
Proposed Rate At Each Toll Zone

Pay by Plate	\$0.60	\$1.40	\$0.65	\$0.80	\$0.90	\$0.90	\$0.75	\$0.60	\$0.60	\$0.60	\$0.70	\$1.55	\$1.30	+\$0.60 billing fee
E-ZPass (non-MA)	\$0.30	\$1.10	\$0.35	\$0.50	\$0.60	\$0.60	\$0.45	\$0.30	\$0.30	\$0.30	\$0.40	\$1.25	\$1.00	
E-ZPass MA	\$0.25	\$1.00	\$0.30	\$0.45	\$0.55	\$0.50	\$0.45	\$0.25	\$0.25	\$0.45	\$0.20	\$1.00	\$0.50	



Cost Incurred at each interchange for 2-axle E-ZPassMA New York to Boston Full Length Trip

	\$0.45	\$1.40	\$1.60	\$1.65	\$1.75	\$1.90	\$2.15	\$2.70	\$3.15	\$3.25	\$3.40	\$3.80	\$4.00	\$4.20	\$4.70	\$5.60	\$5.60	\$5.60	\$6.60
	\$0.25	\$1.25	\$1.55	\$1.55	\$1.55	\$2.00	\$2.55	\$3.05	\$3.05	\$3.05	\$3.50	\$3.75	\$4.00	\$4.45	\$4.65	\$5.65	\$5.65	\$5.65	\$6.15



# Cost and Revenue Projections

- Earlier projections that AET would save \$50M annually in operating costs did not include initial capital costs, and also assumed regular toll increases which we are not pursuing, and did not account for offsetting increases in operating expenses.
- AET will reduce toll collection operating costs modestly, by approximately \$5M annually (see next slide)
- Operating cost savings are projected to rise slightly in the first year of the program and future efforts to reduce leakage may increase net revenue; MassDOT will reassess gantry fees periodically to ensure that the overall program remains revenue neutral
- Substantial capital costs have been incurred to build the AET system and will be incurred to demolish the toll plazas
  - AET System Buildout--\$130M
  - Toll Demolition Contracts– total construction cost of \$132.8M



# Operating Cost Estimates



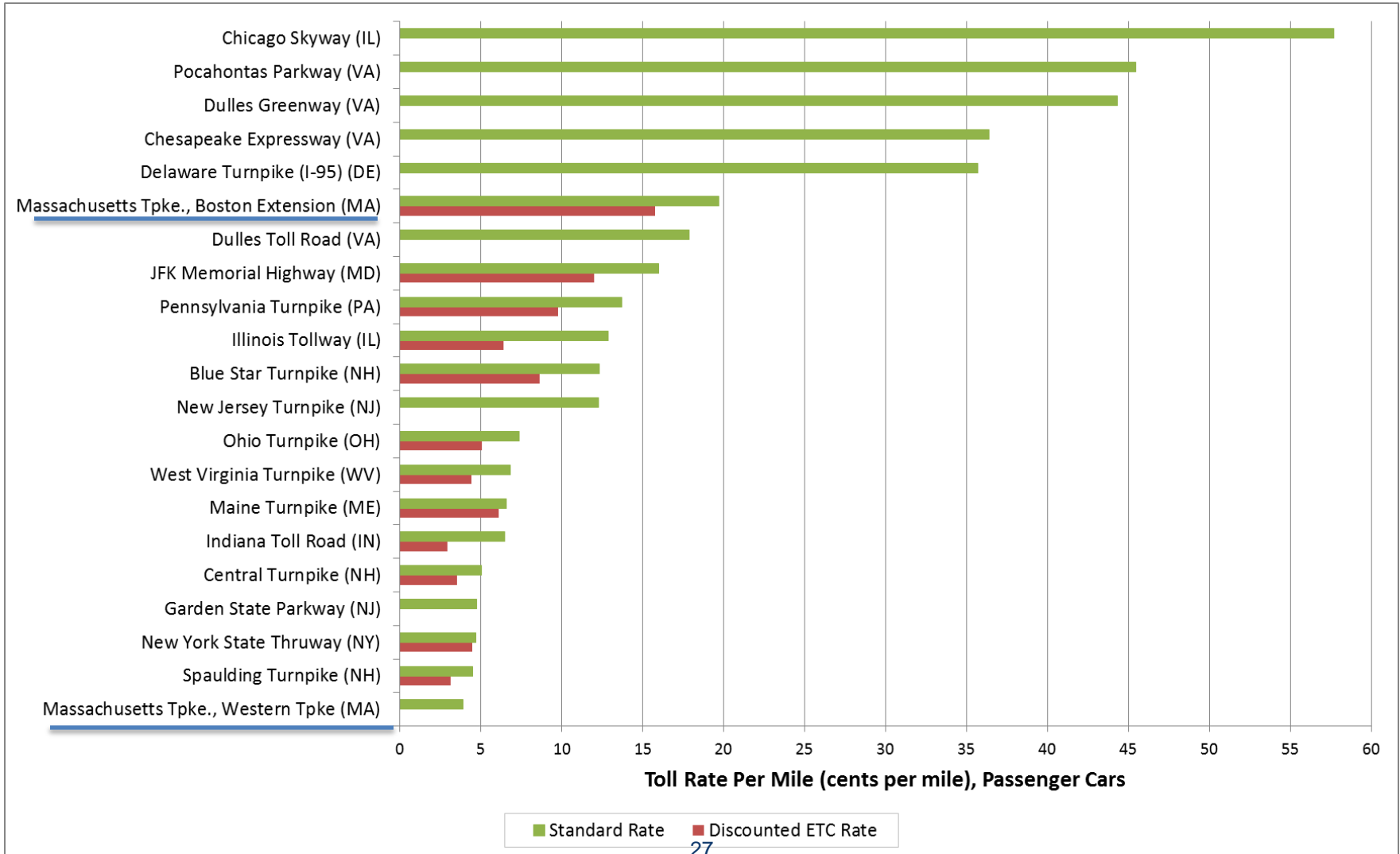
Operational Cost Categories	Current System	AET System
Salary of Toll Collectors + Fringe Rate	\$38.14M	\$0
TransCore Back office Processing Costs	\$18.92M	\$27.8M
Banking Fees (Credit Card Fees)	\$5.83M	\$7.7M
RMV Lookup up Fees	\$0.068M	\$2.1M
Postage Fees	\$1.01M	\$18.7M
MassDOT Customer Service Center Costs	\$2.62M	\$3.6M
Utility Costs and Equipment Maintenance Costs	\$1.1M	\$2.7M
<b>Estimated Annual Operational Cost</b>	<b>\$67.69M</b>	<b>\$62.6M</b>

# Appendix Information

# Finding: MassDOT has one of the lowest per mile costs in the country



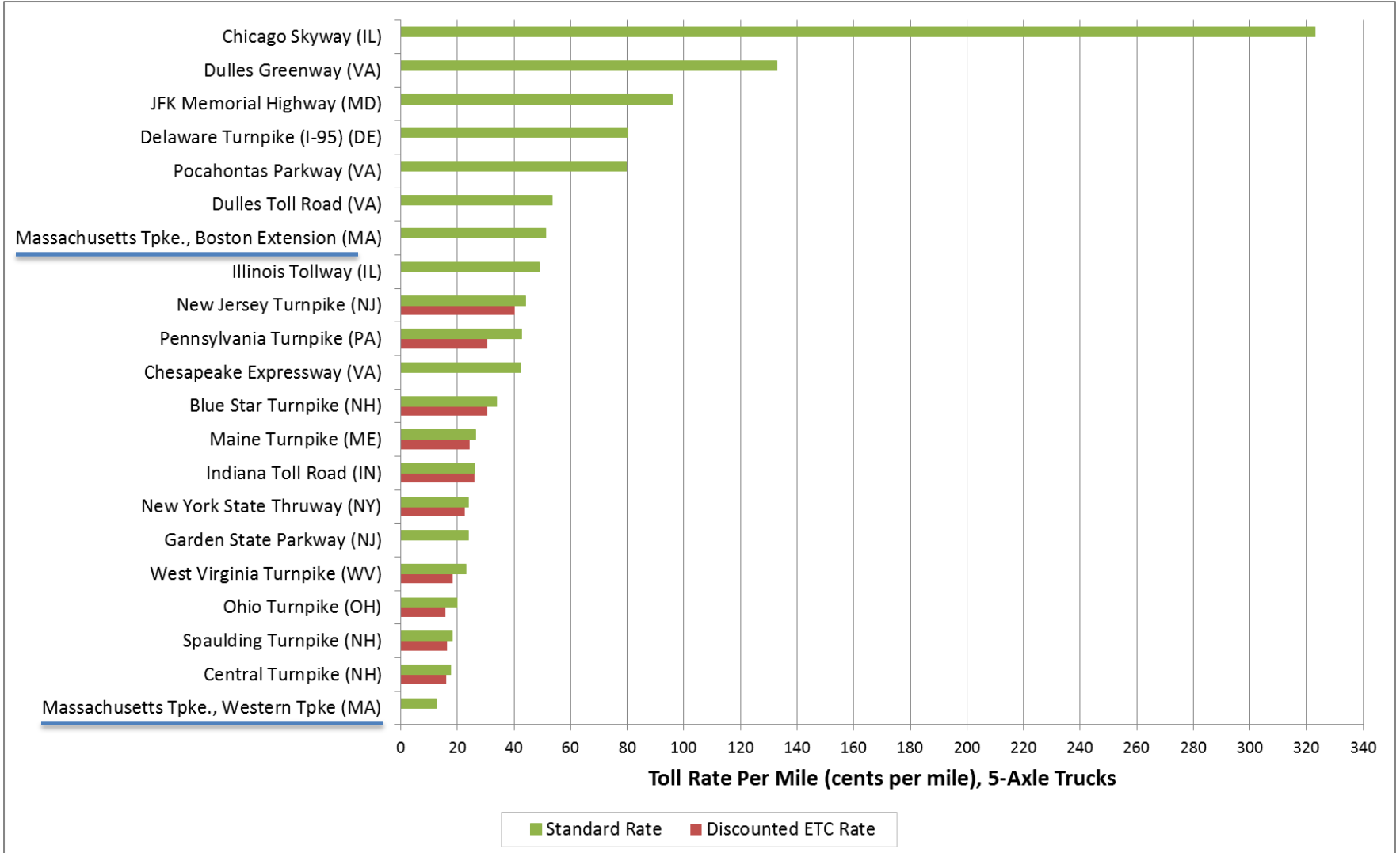
## Cost per Mile Comparison (Passenger Vehicles)



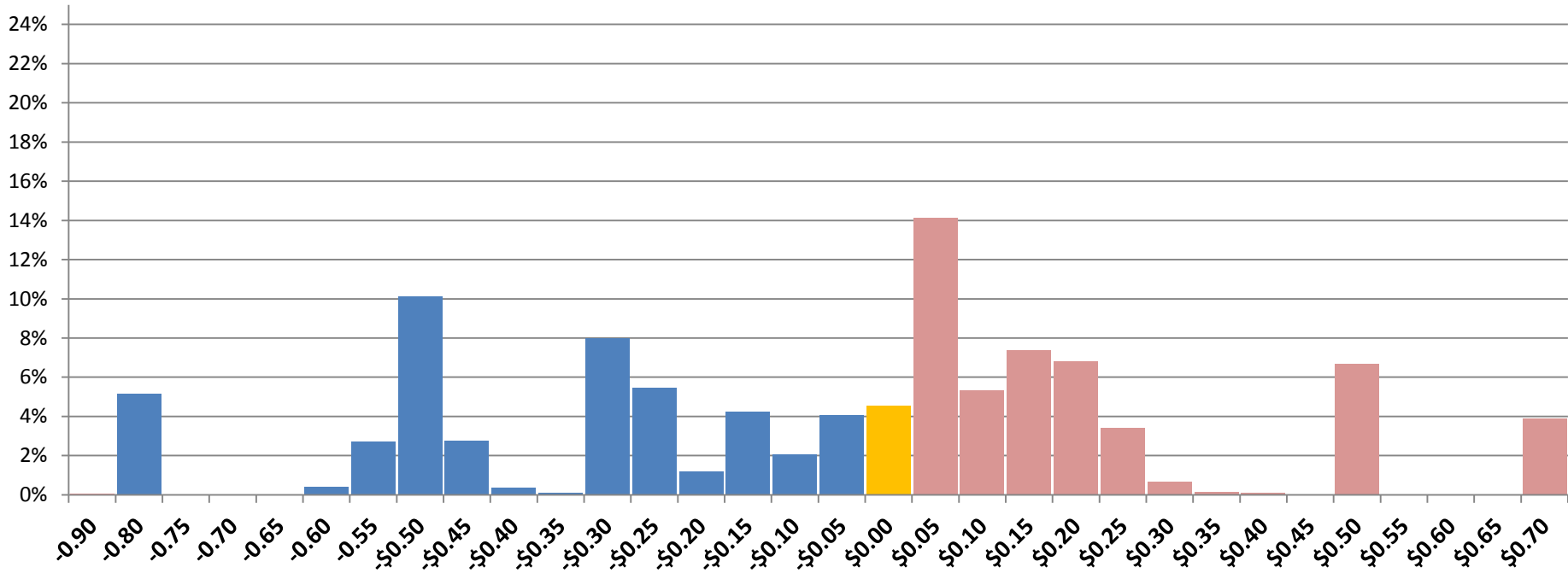
# Finding: MassDOT has one of the lowest per mile costs in the country



## Cost per Mile Comparison (5+ Axle Trucks)



# Distribution of changes in trip costs with proposed E-ZPassMA Gantry Rates



Blue = Decreased trip costs  
 Yellow = Same trip costs  
 Red = Increased trip costs

## Revenue Impacts of AET on Tobin Bridge



- Tobin Bridge was converted to All Electronic Tolling in July 2014. Now a full calendar year of data is available to study how the conversion impacted revenue. These are “lessons learned” that are transferable to other tolled facilities in the Commonwealth.
  - E-ZPass usage rate increased from around 65% to 85%
  - Gross revenue increased slightly from pre-AET to post-AET. Some of this can be attributed to increased traffic volumes and high late fees that were in effect for a period of time

## Tobin Bridge “Leakage”



- In CY 2015, approximately \$1.24M was not collected from Pay By Plate users, out of \$5.9M of possible PBP revenue. This represents 21% of potential PBP revenue and 4% of total revenue collected (31.7M).
- Non-payment accounts for close to 98% of leakage. Other sources like bad images from the system or incorrect RMV records account for 2.0%.
- Currently there are 185,750 accounts that are unpaid:
  - The majority (64%) of unpaid accounts are from Massachusetts drivers
  - Top 5 non-paying states border Massachusetts-- ME, NH, RI, CT and NY
- We assume larger leakage numbers for the turnpike due to the increased number of out of state drivers.

## Resident Discount Program



- Annual Resident Programs Requirements:
  - Private 2-axle 4-tire vehicle
  - Current RMV registration in qualifying zip code
  - MA driver's license
  - Proof of residency
  - Annual re-qualification at an E-ZPass Center
  
- Tobin Bridge
  - Qualified Charlestown and Chelsea residents pay discounted rate of \$0.30\*
  
- Sumner and Ted Williams Tunnels
  - Qualified East Boston, South Boston and North End residents pay discounted rate of \$0.40\*

\*Discounted Bridge and Tunnel rates required by MGL Chapter 6C § 13b



# Current Fine Structure on Tobin Bridge



Invoice or Notice Time Period	Form of Notice	Balance Due
1-30 Days	Initial Invoice	Toll Due
31-60 Days	Past Due Invoice	Previous Balance Plus \$1.00 for each overdue toll transaction
61-90 Days	Notice of Non-Payment	Previous Balance Plus \$1.00 for each overdue toll payment
91-120 Days	Notice of Liability	Previous Balance Plus \$1.00 for each overdue toll payment; Plus a \$20.00 RMV Fee

## Pay By Plate Fee in Other States



Golden Gate Bridge	\$1.00	NWP	\$0.40 per gantry
MdTA crossings	\$2-3	E-470	\$0.30-\$0.70 per gantry
Henry Hudson Bridge	\$2.96	Florida Turnpike	Approx 25%
SR 520 Bridge	\$2.00	Tampa-Hillsborough	\$0.25-\$1.03 (per gantry)
Tacoma Narrows Br	\$2.00	Miami Dade Expressway	\$0.30-\$0.70 per gantry
Elizabeth River Tun	\$2.50	Triangle Expy	Approx 50%
South Norfolk	\$2.75	PA Turnpike	\$1.75
TxDOT	33%	CTRMA	\$0.13-\$0.48 per gantry
NTTA	\$0.24-\$0.83 per gantry	TCA (CA)	\$1.00 per gantry

### Toll Crossings single point transaction

- Currently the Pay By Plate fee on the Tobin Bridge is \$0.50 (20%). This is one of the lowest in the country.

## Differentials for Users of E-ZPassMA Transponders



- Currently at Weston and Allston, E-ZPass MA drivers receive a discount (\$1.00 vs. \$1.25 for a total discount of \$2.00 vs. \$2.50).
- A 50% discount was enacted in 2002 when toll rates increased from \$0.50 to \$1.00 at Weston and Allston/Brighton. Legislation requires that “[the] 50 per cent discount shall be applied to all toll increases implemented after the effective date of this act.”
- Under the existing toll structure, users of E-ZPassMA on the Western Turnpike do not receive such a discount.
- MassDOT’s proposed rates assume that we apply a similar discount program for E-ZPassMA users, compared to out of state E-ZPass, at each gantry on the Western Turnpike.