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Pricing the Roads: An Overview

Michael Manville, UCLA ITS

Overview

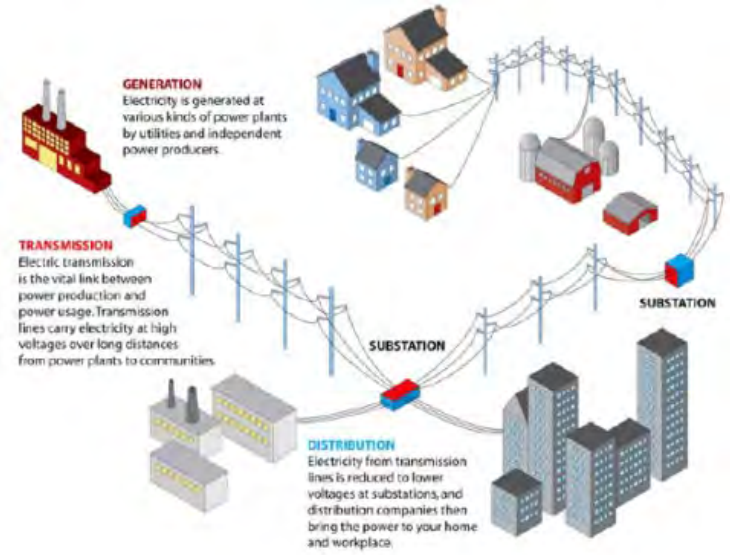
1. A Road Pricing Primer
2. Congestion Pricing
3. Common Concerns: Privacy and Fairness

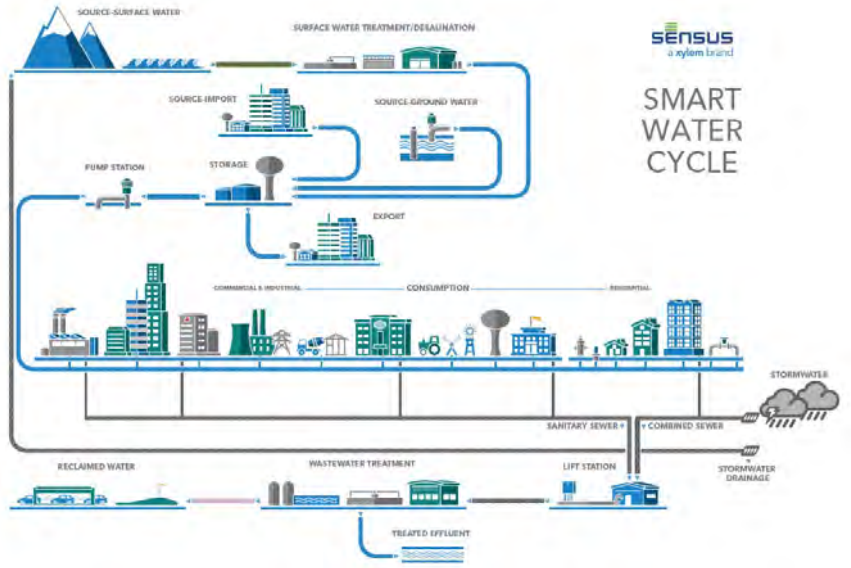
A Road Pricing Primer

Roads (and curbs) are Unique

…in being *unpriced network infrastructure*

This absence of pricing results in both lost revenue and lower performance





Varieties of Road Pricing

Road Pricing

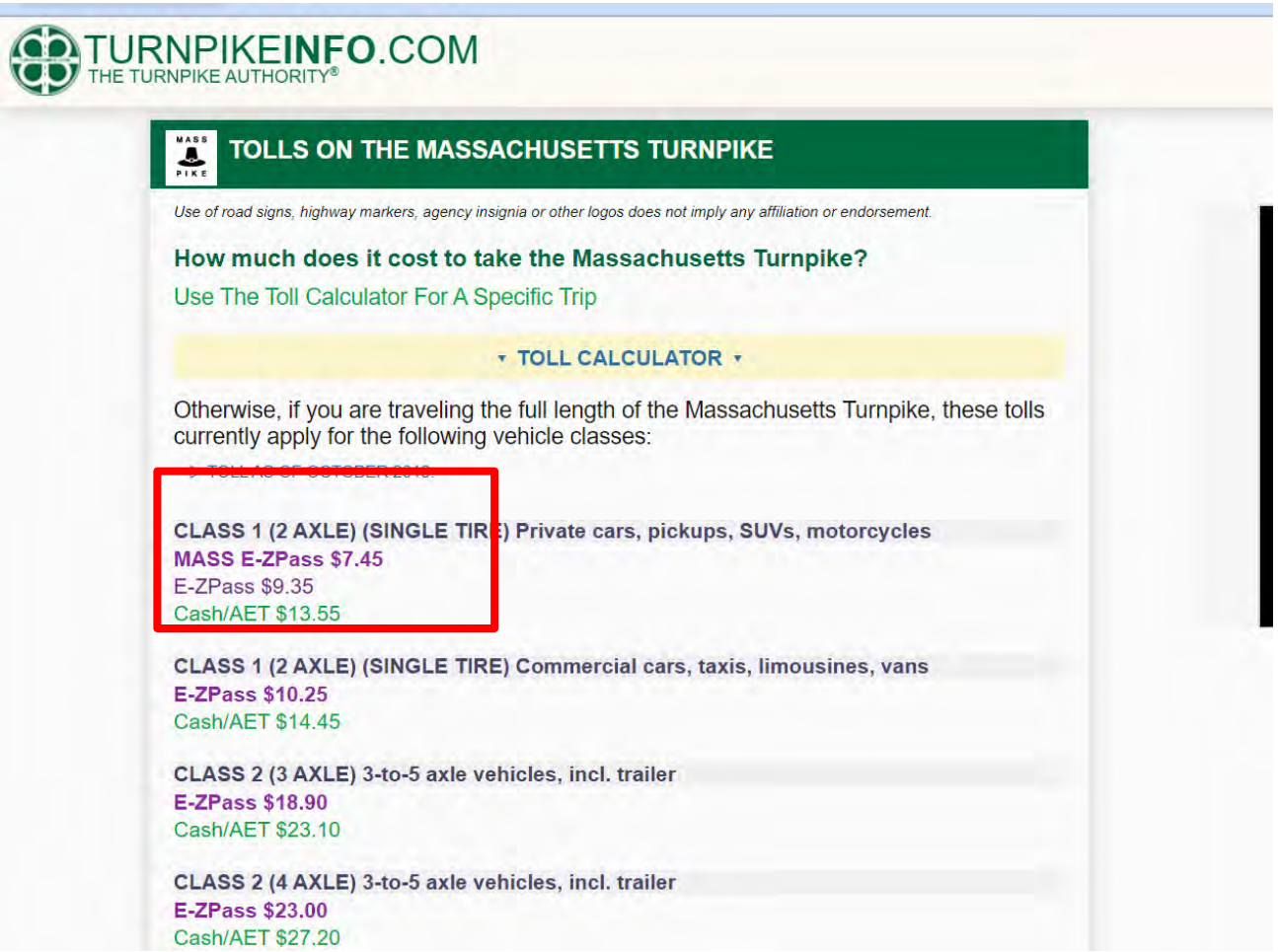
- What it sounds like – any program that charges a direct fee to *use* a road (i.e., Road User Charge or RUC)

  -*Not* the gas tax

- Simplest version is per mile fee
- *Any* charge will have some combination of two results: i) increased revenue or ii) changed behavior
- RUCs are usually discussed as revenue instruments

Congestion Pricing

- A road price where priority is changing behavior
- Raises revenue, but revenue is not the goal
- Congestion charges are usually *dynamic* (i.e., rise and fall with demand to use the road)
- Pollution and crash risk may also rise with congestion, so a congestion charge can proxy as a charge on those externalities as well



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THE TURNPIKE AUTHORITY®

TOLLS ON THE MASSACHUSETTS TURNPIKE

Use of road signs, highway markers, agency insignia or other logos does not imply any affiliation or endorsement.

How much does it cost to take the Massachusetts Turnpike?

Use The Toll Calculator For A Specific Trip

▾ TOLL CALCULATOR ▾

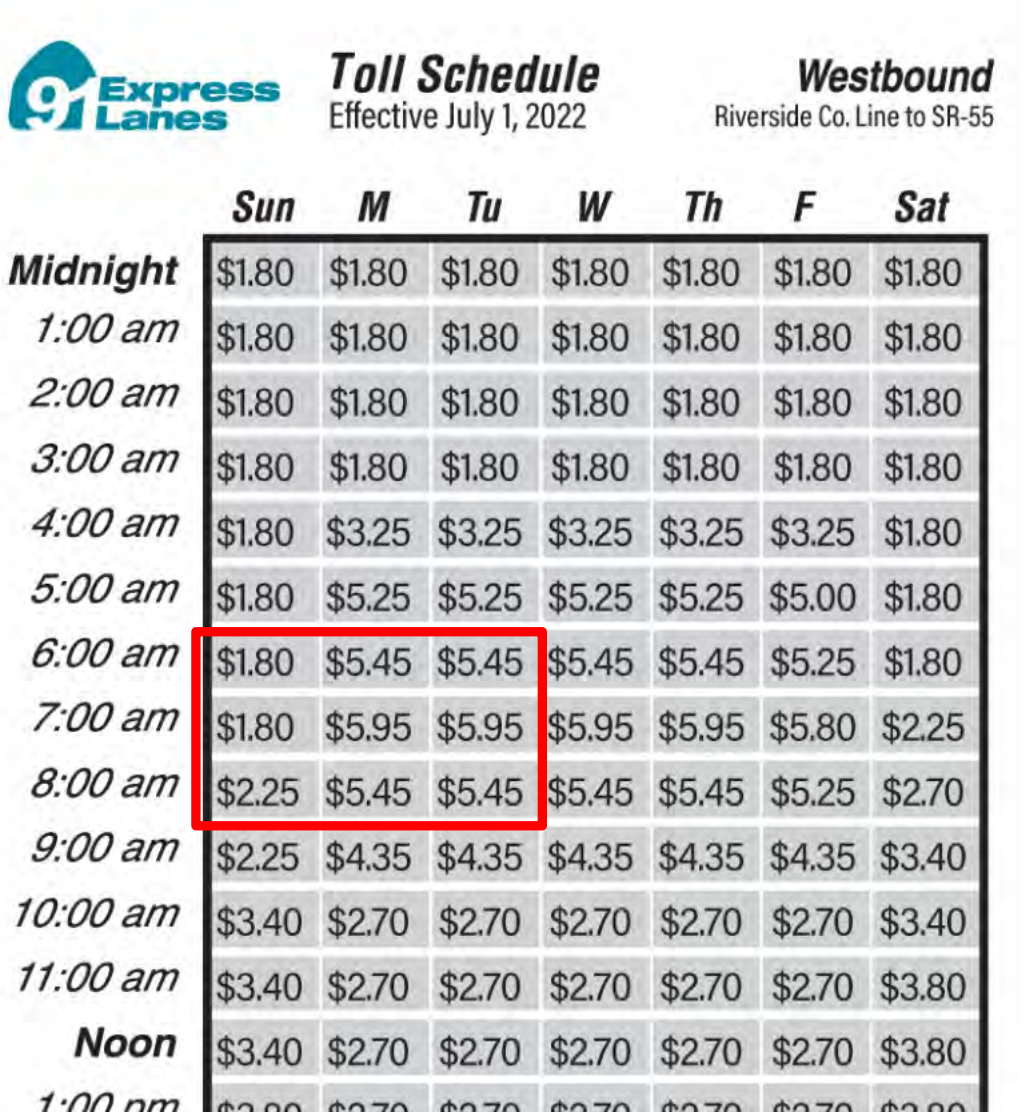
Otherwise, if you are traveling the full length of the Massachusetts Turnpike, these tolls currently apply for the following vehicle classes:

CLASS 1 (2 AXLE) (SINGLE TIRE) Private cars, pickups, SUVs, motorcycles
MASS E-ZPass $7.45
E-ZPass $9.35
Cash/AET $13.55

CLASS 1 (2 AXLE) (SINGLE TIRE) Commercial cars, taxis, limousines, vans
E-ZPass $10.25
Cash/AET $14.45

CLASS 2 (3 AXLE) 3-to-5 axle vehicles, incl. trailer
E-ZPass $18.90
Cash/AET $23.10

CLASS 2 (4 AXLE) 3-to-5 axle vehicles, incl. trailer
E-ZPass $23.00
Cash/AET $27.20



91 Express Lanes

Toll Schedule
Effective July 1, 2022

Westbound
Riverside Co. Line to SR-55

	Sun	M	Tu	W	Th	F	Sat
Midnight	$1.80	$1.80	$1.80	$1.80	$1.80	$1.80	$1.80
1:00 am	$1.80	$1.80	$1.80	$1.80	$1.80	$1.80	$1.80
2:00 am	$1.80	$1.80	$1.80	$1.80	$1.80	$1.80	$1.80
3:00 am	$1.80	$1.80	$1.80	$1.80	$1.80	$1.80	$1.80
4:00 am	$1.80	$3.25	$3.25	$3.25	$3.25	$3.25	$1.80
5:00 am	$1.80	$5.25	$5.25	$5.25	$5.25	$5.00	$1.80
6:00 am	$1.80	$5.45	$5.45	$5.45	$5.45	$5.25	$1.80
7:00 am	$1.80	$5.95	$5.95	$5.95	$5.95	$5.80	$2.25
8:00 am	$2.25	$5.45	$5.45	$5.45	$5.45	$5.25	$2.70
9:00 am	$2.25	$4.35	$4.35	$4.35	$4.35	$4.35	$3.40
10:00 am	$3.40	$2.70	$2.70	$2.70	$2.70	$2.70	$3.40
11:00 am	$3.40	$2.70	$2.70	$2.70	$2.70	$2.70	$3.80
Noon	$3.40	$2.70	$2.70	$2.70	$2.70	$2.70	$3.80
1:00 pm							

The Rate and Structure of a Charge Depend on What You Want the Charge to Do

- *Raise revenue:* charge every vehicle a low price that they barely notice
- *Change Behavior:* Target particular types of vehicles or driving (e.g., in congestion) with an extremely noticeable price

E-ZTAX: TAX SALIENCE AND TAX RATES*

AMY FINKELSTEIN

This paper examines whether the salience of a tax system affects equilibrium tax rates. I analyze how tolls change after toll facilities adopt electronic toll collection (ETC); drivers are substantially less aware of tolls paid electronically. I estimate that, in steady state, tolls are 20 to 40 percent higher than they would have been without ETC. Consistent with a salience-based explanation for this toll increase, I find that under ETC, driving becomes less elastic with respect to the toll and toll setting becomes less sensitive to the electoral calendar. Alternative explanations appear unlikely to be able to explain the findings.

Congestion Charging

Mispriced Raods are Mismanaged Roads

Governments should try to align price and value

Median home price: **$1.4 million**

Average commercial rent: **$72/sq ft**

Price to drive across: **zero**

Price to park on residential street: **zero**

Median home price: **$197,000**

Average commercial rent: **$12/sq ft**

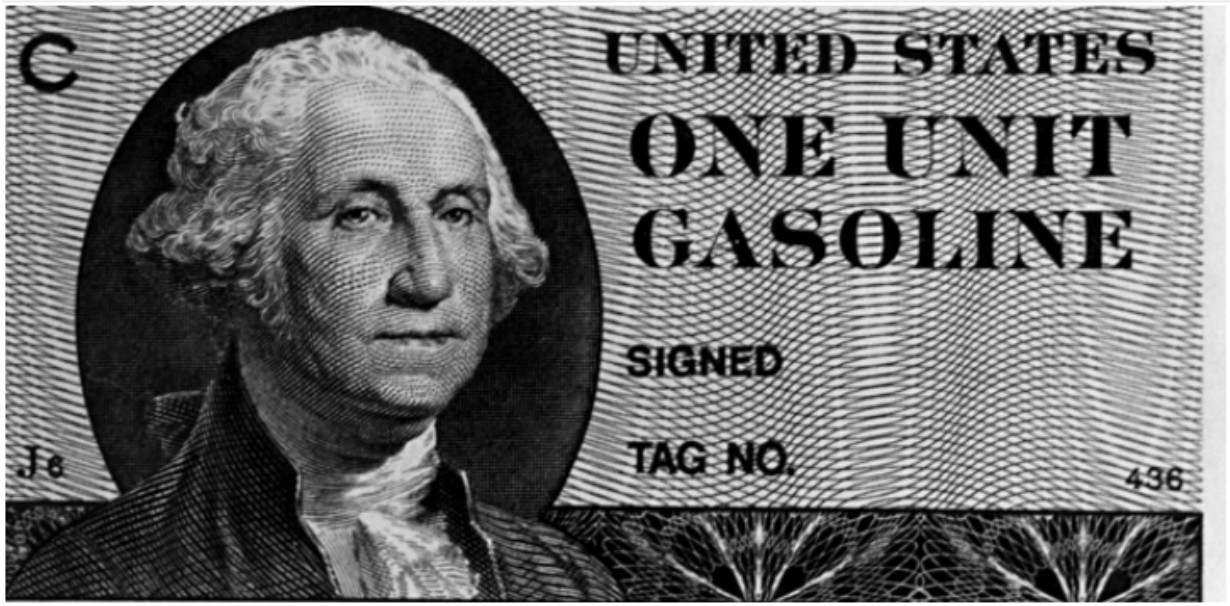
Price to drive across: **zero**

Price to park on residential street: **zero**

Price Controls Have Four Consequences

- ***Shortages*** – You run out of the good
- ***High Search Costs*** – People expend extra energy to find the good
- ***Misallocation*** – The good is consumed both by people who value it a lot and people who don't
- ***Shadow Markets*** – the cost of the good ends up in the cost of other goods


PUMPS
CLOSED


UNITED STATES
ONE UNIT
GASOLINE
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Common Concerns

Privacy Concerns

Why is my phone listening to me?

Your phone is listening to you so it can hear your voice commands and assist you through assistant apps and personalized ads. For example, when you ask Google Assistant or Siri to find something, this information is used for targeted ads. It's no different from typing something into Google Search. If you're looking for car dealerships in your city, related ads will start chasing you across the internet. In a way, a virtual assistant is just another search engine.

How to test if your phone is spying on you

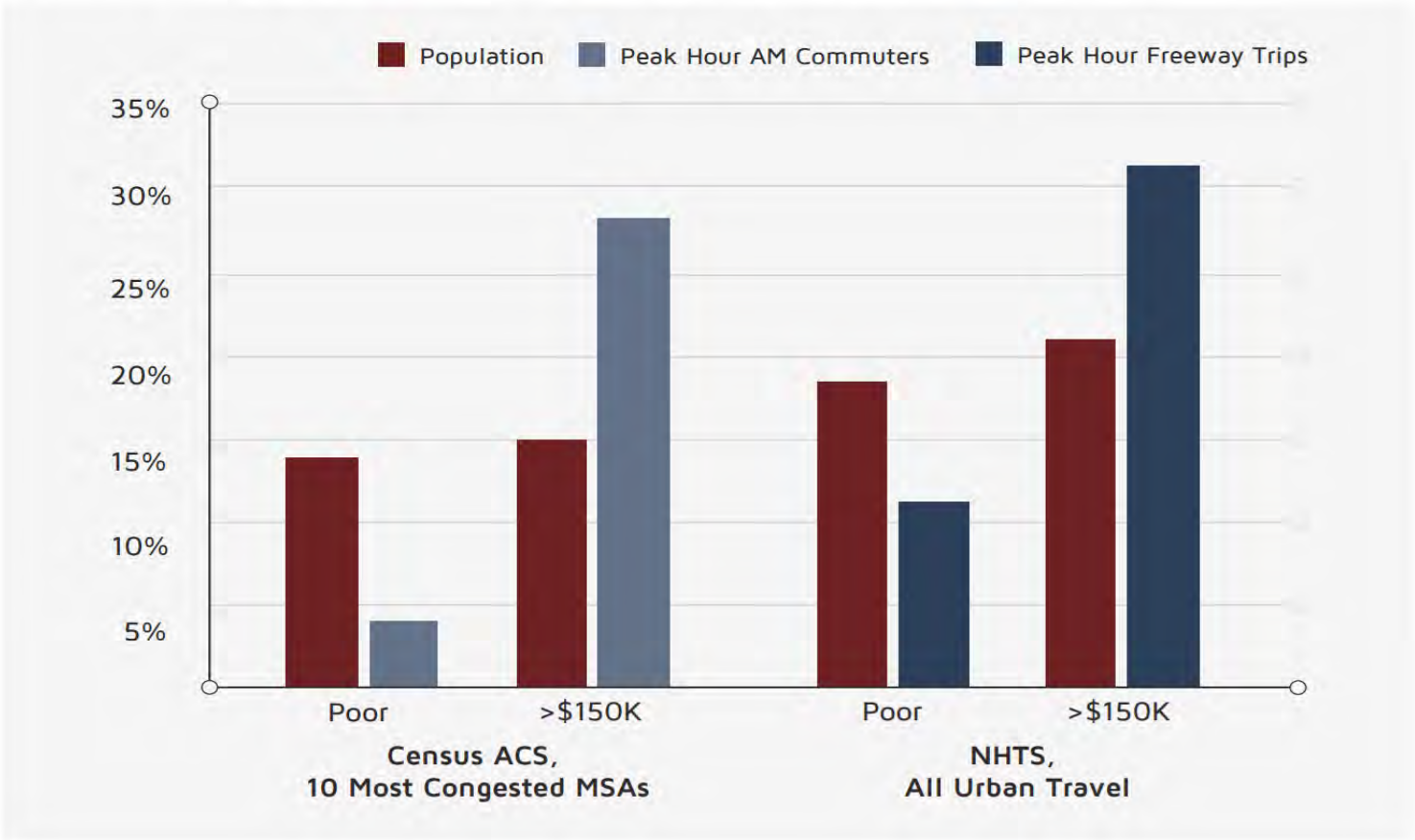
It is easy to test if your phone is spying on you — simply select an unrelated topic and talk about it a few times within earshot of your phone. You can follow these steps to find out if your phone has been

Is pricing fair?

- Road charges are regressive
- However, *lots* of charges are regressive – regressivity isn't automatically unfair
- Status quo is also unfair
- Big question is whether we can alleviate the burden pricing places on low-income people

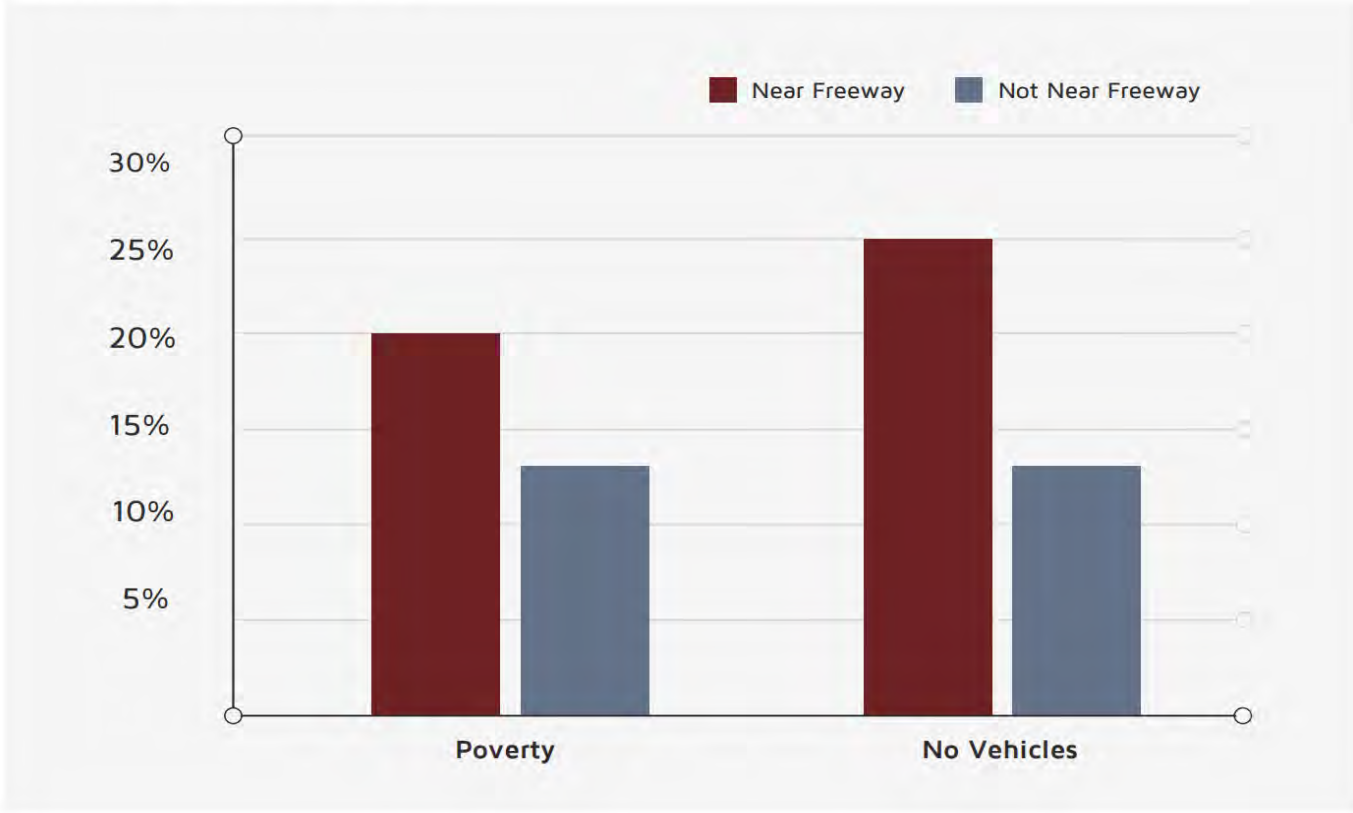
Free Roads: A Subsidy for the Affluent

Figure 1. Poverty and affluence in morning peak period travel

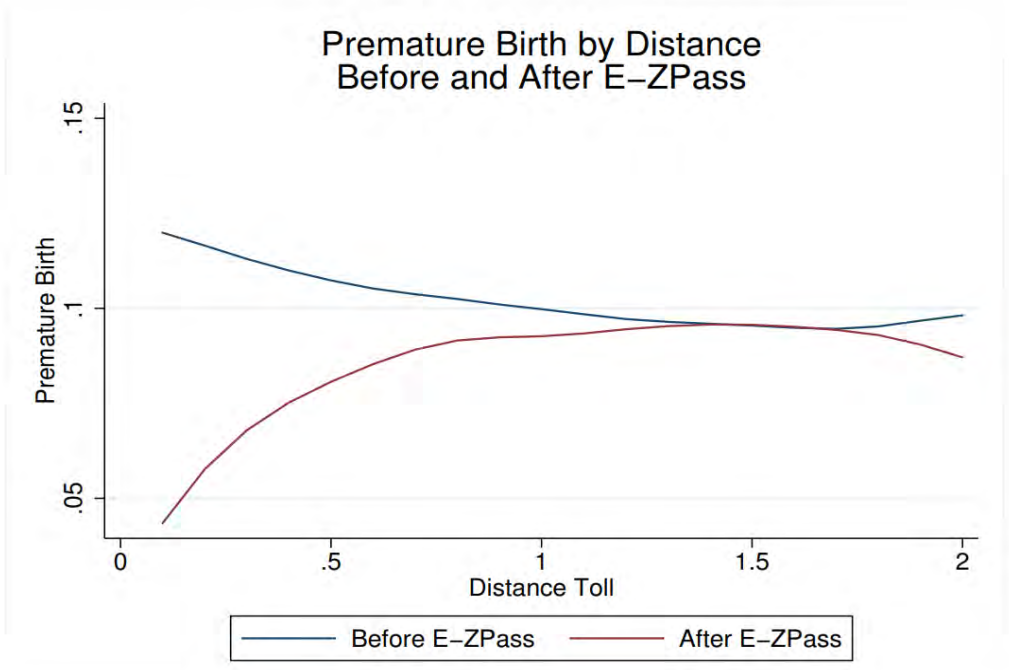


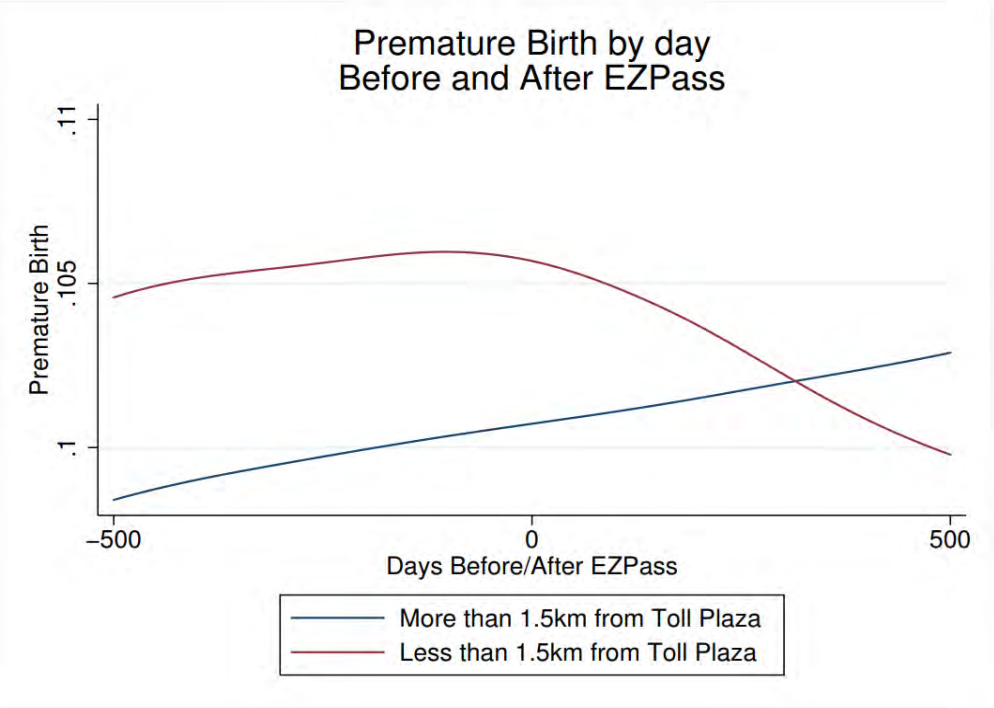
Free Roads: A Penalty for the Urban Poor

Figure 2. Poverty status and vehicle ownership by freeway adjacency, 10 most congested U.S. urban areas



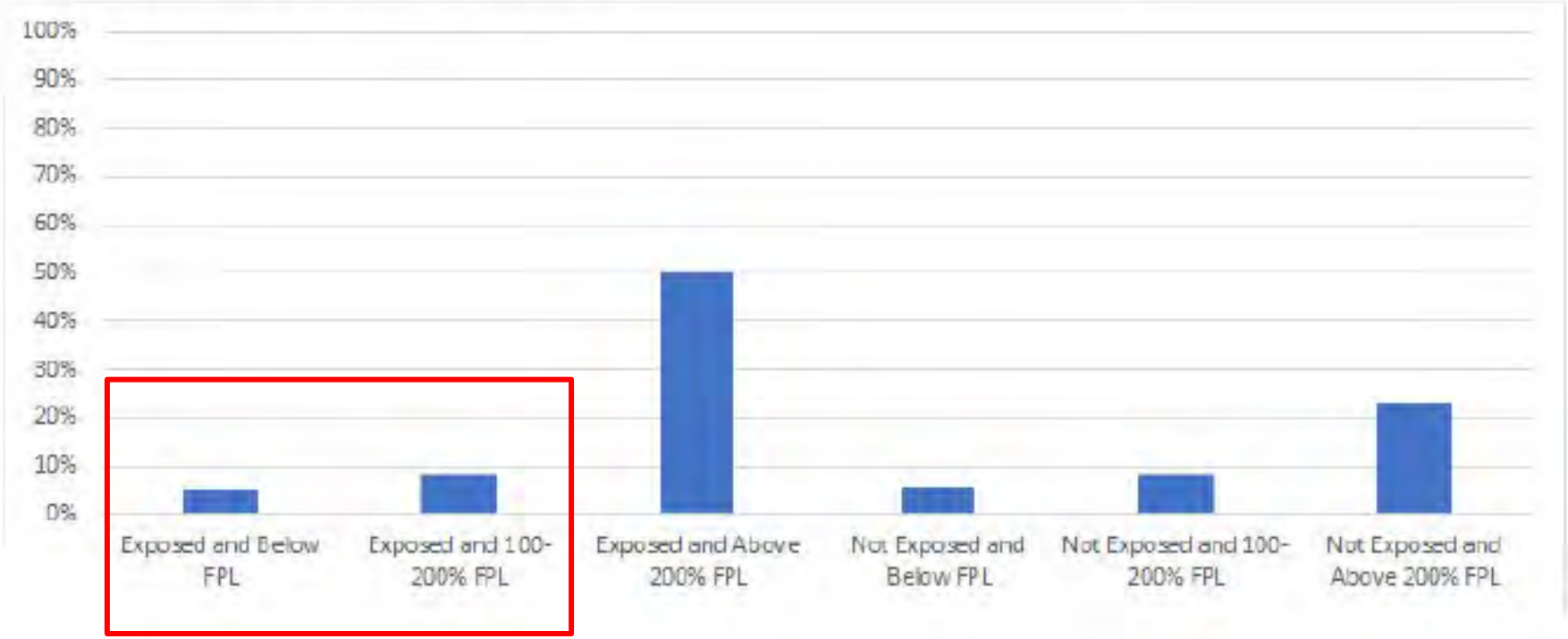
Less Congestion has Public Health Benefits





If all freeways in major California metros were priced, about 13% of households would be low-income and likely pay tolls

Figure 2. Income and Pricing Exposure



Pricing exposure = household is likely to pay a toll
FPL: Federal Poverty Level

This Problem Can Be Managed

- *Not* through investments in transit or pedestrian infrastructure or bike lanes
- The potential harm falls on people who *still need to drive*
- Best approach is toll assistance, financed by tolls themselves (similar to utility aid, or food stamps)
- Exemptions and discounts are very hard to manage, and not advisable

Gradualism: Pricing Needn't Happen All at Once

A Counterfactual

- Suppose we already had pricing: how would we react to a proposal for taking it away?
- Roads would be free, but…
- More congestion
- More pollution
- Less revenue, including revenue to help people harmed by the pollution
- Or think of it this way: how would we react to a proposal to abolish electric or water meters?

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