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Congestion Pricing Efficiency and Equity

Michael Manville

University of California, Los Angeles

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Congestion Pricing Efficiency and Equity

Michael Manville
Department of Urban Planning
Institute of Transportation Studies
UCLA

The Importance of Prices: How We Drive



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



(Ord. 876, Sec. 6 (Exh. 4), 2012)

14.112.060 Mitigation of Traffic Impacts Required.

Any new development activity shall mitigate the development's impacts on the City's street system either by payment of an amount or as otherwise provided in Section [14.112.070](#). (Ord. 876, Sec. 6 (Exh. 4), 2012)

**City of Los Angeles
Summary of Parking Regulations**

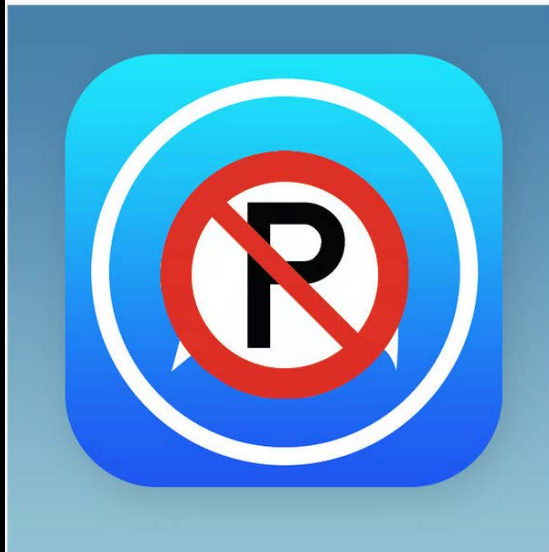
12.21A4	Use of Building (or portions of)	Commercial uses	Ratio (spaces/sq. ft.)
	1. Health or Athletic Club, Bath House, Dance Hall/Studio, Gymnasium, or similar (e.g. amusement)		1 per 100
	2. Restaurant, Café, Coffee Shop, Bar, Night Club, or similar		1 per 100
	3. Small Restaurant, Café, or Coffee Shop (1000sq. Ft. or less)		1 per 200
	4. Take-out Restaurant (no eating on the premises)		1 per 250
	5. Retail or Discount Wholesalers		1 per 250
	6. Retail Furniture, Major Appliances, or similar		1 per 500
	7. Auditoriums: Church, High School, College, Stadium, Theater, and similar assembly		1 per 35 or 1 per 5 fixed seats

Shadow Markets can Become Black Markets

SF Sends Cease-And-Desist To Apps Selling Public Parking Spots

Posted Jun 23, 2014 by [Josh Constine \(@joshconstine\)](#)

143 Share (1.1k) 134 Tweet (183)



Turns out you're not allowed to rent away public property like parking spots as if you owned

ADVERTISEMENT

WITH
INTERNET
ESSENTIALS
FROM

Haystack suspends service in Boston as city bans parking apps

BUSINESS & ECONOMY - AUGUST 20, 2014 9:13AM

Apps that let users find and then pay for public parking spots have drawn the ire of at least two U.S. cities in recent months.



SMALLBONES ON WIKIPEDIA

The Boston City Council [passed an ordinance](#) Aug. 20 that bans the selling or leasing of public ways by private companies. The measure was designed to ban services like Haystack that let users find and then pay for public parking spots.

Roads are the Infrastructure We Run out Of

The State

Sacramento May Finally Go With Flow, Get Water Meters

Legislation would make the city drop its flat rate and bill customers for what they use, as most utilities do.

May 06, 2003 | Nancy Vogel | Times Staff Writer



SACRAMENTO — In 1920, the city of Sacramento amended its charter to declare that "no water meters shall ever be attached to residential water service pipes," and ever since, water meters have been fighting words here in River City.

But the days of Sacramento's wide-open spigots may be twisting shut. The city finds itself practically alone in its fight to perpetuate the flat rates that charge people the same no matter how much water they use.

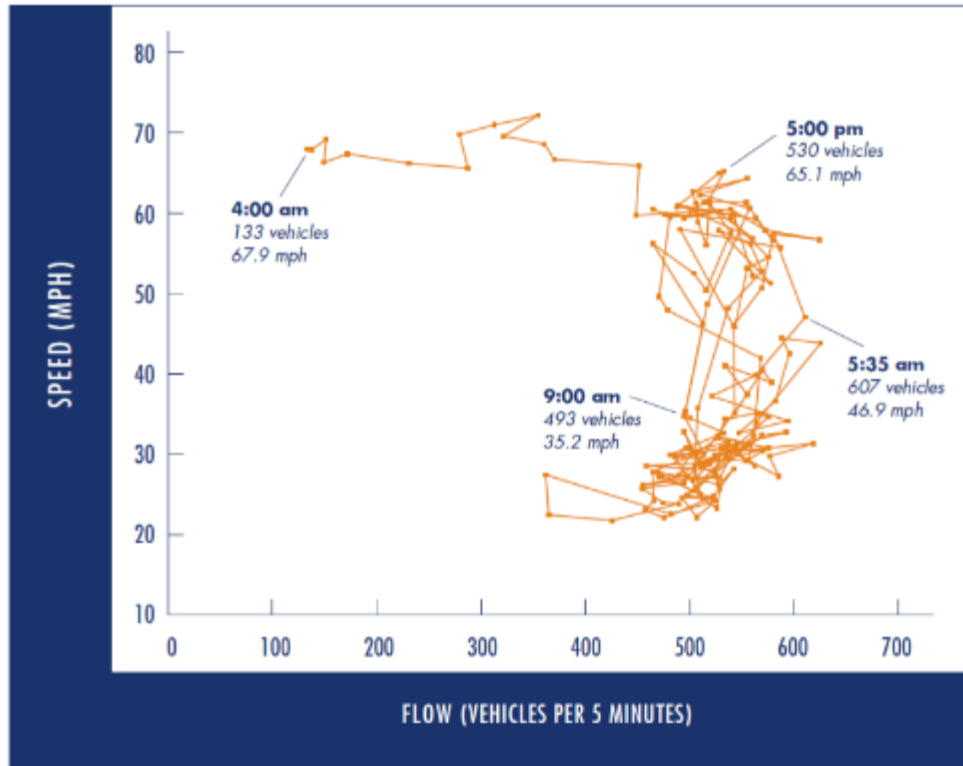
Sacramento officials say they're not philosophically opposed to water meters. And they acknowledge that residents use more water than most Californians. In nearby Davis, Stockton and Vacaville, homes are metered, and the average household uses 12,700 gallons per month, compared with at least 17,000 gallons per month in Sacramento.

McIntyre is passionate about water meters. He tried for 15 years, through conservation programs, to bring down Fresno's residential water use. But without meters, McIntyre says, there's no measuring the waste and no cost incentive to conserve. And this is probably why Fresno is among the highest urban water users in the country.

Prices Trigger More Judicious Use

- 2018:
 - *Sacramento*: 70 percent of households have meters
 - Household water use at 12,900 gallons per month
- *Fresno*: residential meters installed
 - Household water use at 200 gallons per person per day

Congestion is Non-Linear



Speed vs. flow on I-10 westbound in 5 minute intervals from 4:00 am to 6:00 pm

Small share of vehicles can tip a road into gridlock. So slowing or preventing their entry removes bottlenecks, and moves more people.

Context: Pricing and Equity

- Pricing is not a strategy to affirmatively advance equity
- Pricing is an *efficiency* strategy
- It can be done in ways that don't exacerbate equity
- It *may* advance equity along some dimensions
- It doesn't directly address the most fundamental inequities in the system
- But - it can pair well with policies that do

Two Fairness Objections

- Double-taxation: We already pay to use these roads (gas taxes, etc)
- Regressivity – burden on low-income drivers, benefit for the affluent

Do We Already Pay to Use Roads?



Tesla Model 3 with Matte Black Full Body Wrap

What About Regressivity?

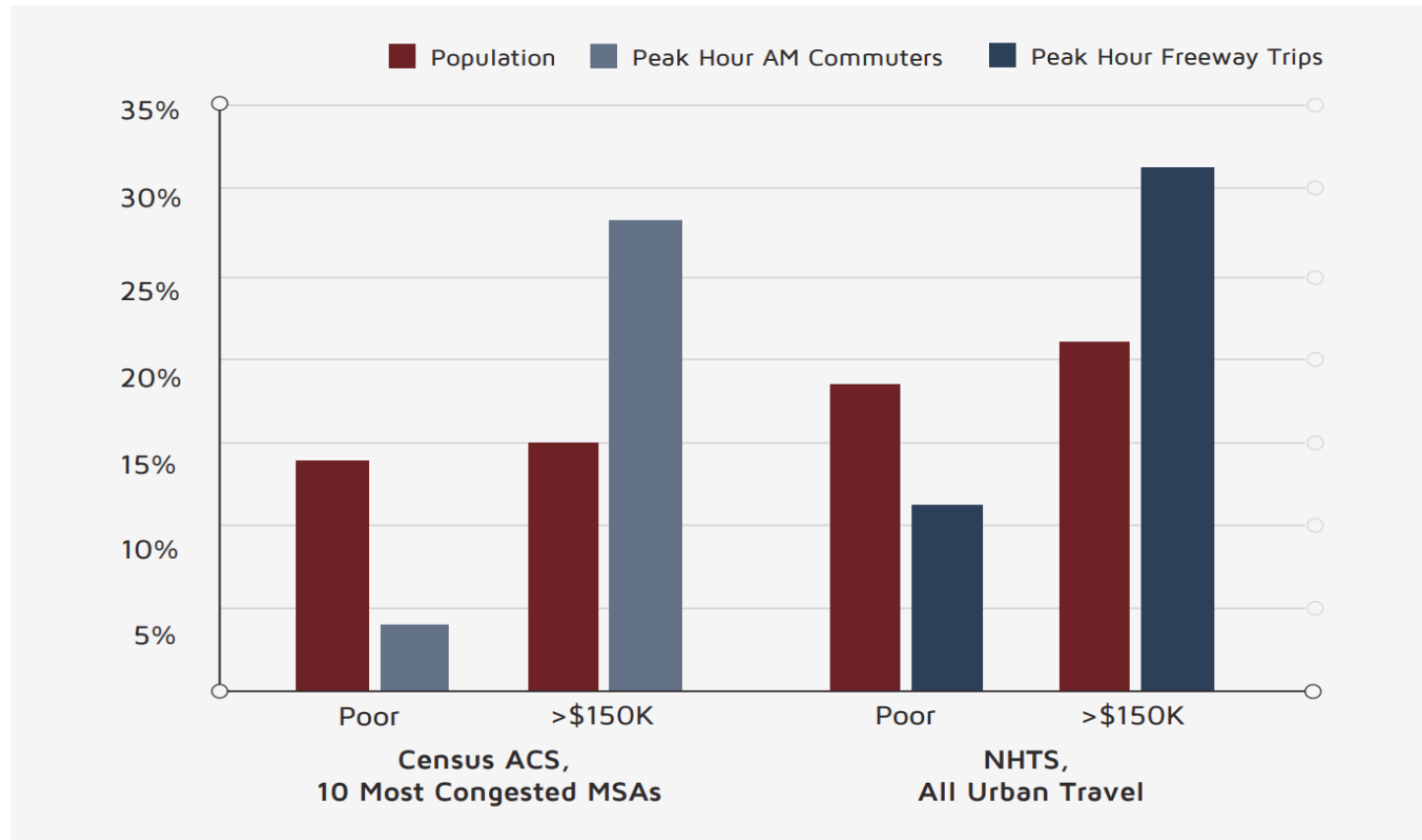
- Tolls *are* regressive
- Regressive doesn't automatically mean "unfair"
- We can mitigate the unfairness that does exist

Two Conceptions of Equity

- Ability to pay: those who have more pay more
- User Pays: People account for the full costs of their actions
- Pricing conforms to the second and violates the first
- *Free roads violate both*

Free Roads: A Subsidy Mostly for the Affluent

Figure 1. Poverty and affluence in morning peak period travel



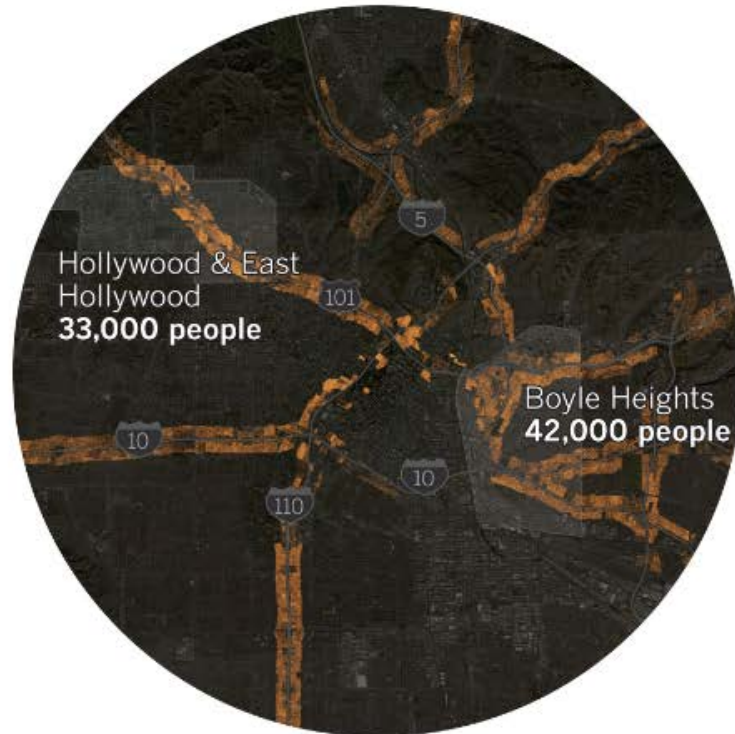


L.A. keeps building near freeways, even though living there makes people sick

Are you one of the 2.5 million Southern Californians already living in the pollution zone?

By **TONY BARBOZA AND JON SCHLEUSS**

MARCH 2, 2017, 3 A.M.



1 dot = 1 person living within 1,000 feet of a freeway in 2010

Pollution from Congestion has Serious Consequences

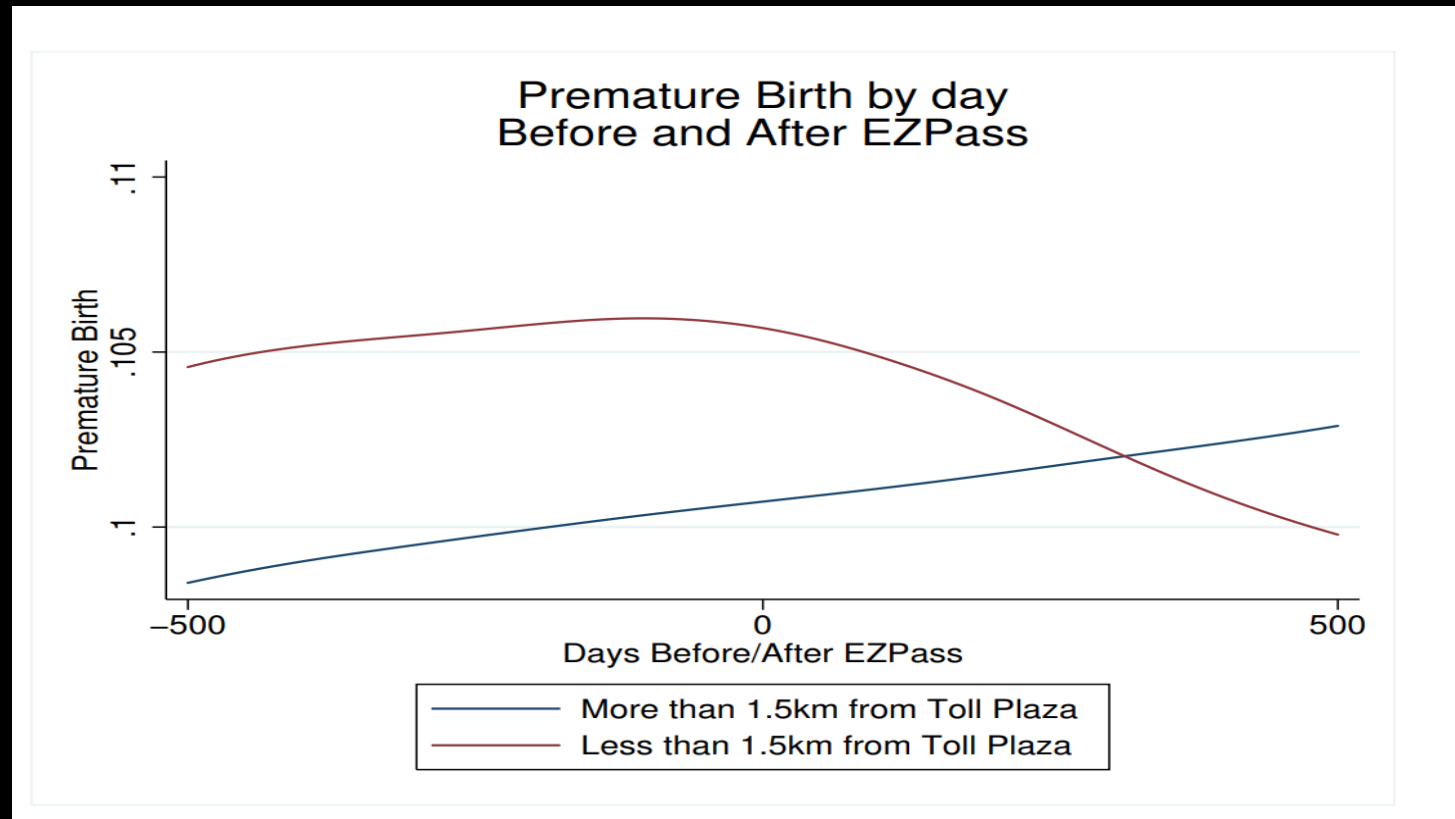


Table 3. Share of People in Poverty by Freeway Proximity.

	Urbanized Area	Freeway Dominated	Freeway Intersected	No Freeway	Difference (%)
Atlanta	0.15	0.32	0.19	0.13	146
Boston	0.10	0.22	0.08	0.11	107
Chicago	0.14	0.21	0.14	0.13	55
Houston	0.16	0.17	0.20	0.16	12
Los Angeles	0.16	0.23	0.18	0.16	43
New York	0.14	0.25	0.16	0.13	83
Philadelphia	0.13	0.18	0.12	0.13	41
San Francisco	0.12	0.14	0.12	0.11	23
Seattle	0.11	0.22	0.14	0.11	107
Washington, DC	0.08	0.11	0.08	0.08	34
Average	0.13	0.20	0.14	0.13	65

Source: American Community Survey 2008–2012.

Note: “Freeway dominated” denotes population in Census block groups whose land area is at least 75% occupied by a freeway or by a 1,000-foot buffer on either side. “Freeway intersected” denotes population in block groups that touch a freeway or its buffer in any way. “Difference” is percentage difference between the freeway-dominated group and the no freeway group. Some percentage differences appear incorrect because of rounding.

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

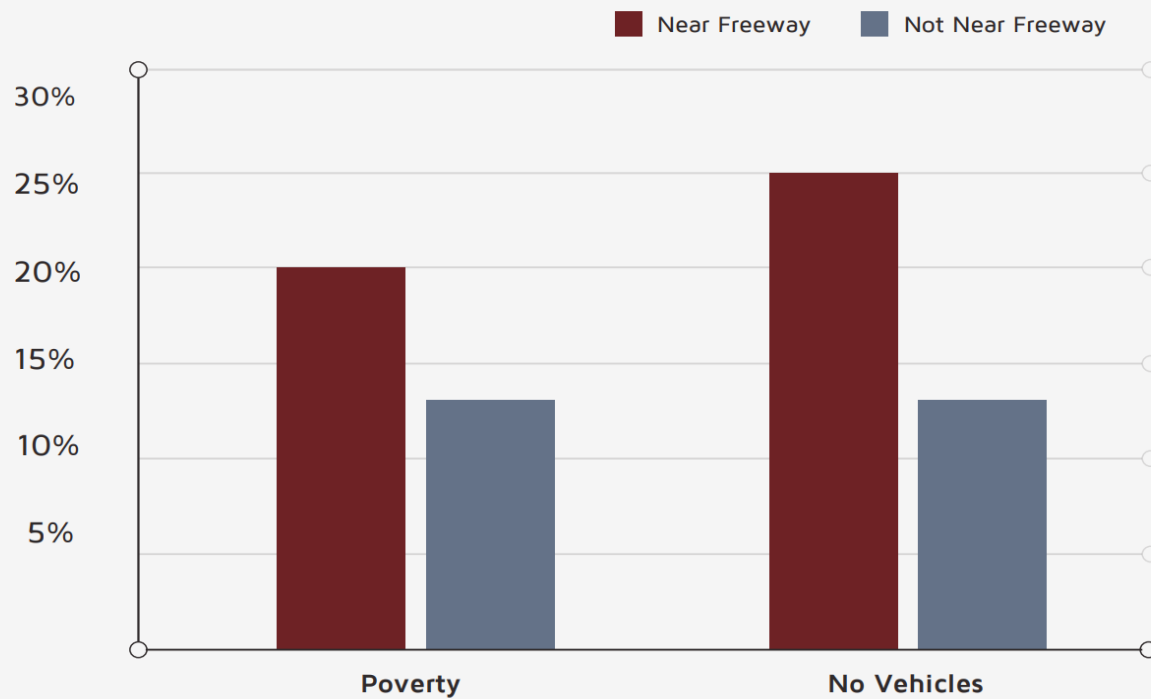


Table 4. Race and Ethnicity by Freeway Proximity.

	Percent Nonwhite					Percent Black				
	Urbanized Area	Freeway Dominated	Freeway Intersected	No Freeway	Difference (%)	Urbanized Area	Freeway Dominated	Freeway Intersected	No Freeway	Difference (%)
Atlanta	0.54	0.79	0.63	0.49	62	0.35	0.47	0.43	0.31	51
Boston	0.27	0.36	0.20	0.27	32	0.08	0.07	0.03	0.08	-16
Chicago	0.48	0.67	0.50	0.47	44	0.18	0.33	0.24	0.17	92
Houston	0.65	0.76	0.69	0.64	19	0.18	0.27	0.18	0.18	49
Los Angeles	0.71	0.86	0.78	0.69	24	0.07	0.09	0.08	0.07	32
New York	0.52	0.74	0.57	0.51	44	0.17	0.17	0.15	0.17	-1
Philadelphia	0.37	0.36	0.31	0.37	-1	0.21	0.17	0.16	0.22	-21
San Francisco	0.62	0.74	0.71	0.59	27	0.09	0.14	0.12	0.08	79
Seattle	0.34	0.41	0.41	0.32	29	0.06	0.10	0.08	0.05	87
Washington, DC	0.56	0.49	0.55	0.56	-12	0.27	0.21	0.25	0.27	-21
Average	0.51	0.62	0.53	0.49	27	0.17	0.20	0.17	0.16	33

Source: American Community Survey 2008–2012.

Note: “Freeway dominated” denotes population in Census block groups whose land area is at least 75% occupied by a freeway or a by 1,000-foot buffer on either side. “Freeway intersected” denotes population in block groups that touch a freeway or its buffer in any way. “Difference” is percentage difference between the freeway-dominated group and the no freeway group. Some percentage differences appear incorrect because of rounding.

Low-income people near freeways

- ...are less likely to *use* freeways

Table 6. Vehicle Ownership and Commute Behavior by Freeway Proximity.

	Atlanta	Boston	Chicago	Houston	Los Angeles	New York	Philadelphia	San Francisco	Seattle	Washington, DC	Average
Share of households without vehicles											
Urbanized area average	0.07	0.14	0.13	0.06	0.09	0.32	0.15	0.15	0.08	0.11	0.13
Freeway dominated	0.20	0.40	0.21	0.10	0.11	0.54	0.27	0.15	0.26	0.21	0.25
Freeway intersected	0.09	0.14	0.12	0.09	0.08	0.33	0.13	0.12	0.12	0.10	0.13
No freeway	0.05	0.14	0.13	0.06	0.09	0.31	0.15	0.16	0.07	0.12	0.13
Difference (%)	264	191	62	68	25	73	86	-3	266	84	112

It is wrong to levy regressive charges
to access essential goods

Some Regressive Charges for Essential Goods

- Transit fares
- Sales taxes for transit
- Gasoline
- (And gas taxes)
- Cars
- Water and electric meters
- Things at grocery stores



The Nature of the Unfairness

Early critics of the congestion pricing proposal have said additional fees could be a burden for low-income households that spend a significant share of their monthly income on transportation.

“What’s prohibitively expensive for someone of limited means is a drop in the bucket for the affluent,” Eric Preven, who serves on the Studio City Neighborhood Council, said during Thursday’s meeting.

Should we Give the Money to Transit?

Metro CEO supports congestion pricing, free fares on public transit

Could tolls on drivers cut down on traffic?

By **Elijah Chiland** | Dec 6, 2018, 12:54pm PST

“We think that with congestion pricing done right, we can be the only city in the world to offer free transit service in time for the 2028 Olympics,” Metro CEO Phil Washington said.

The Nature of the Unfairness

- **Low-income drivers** with few obvious alternatives to using busy roads and busy times
- Giving money to transit *doesn't solve this problem*
- Might be a *good idea*
- Might be *progressive*
- Not the same as remedying *specific harm*

We Have Ways to Solve This



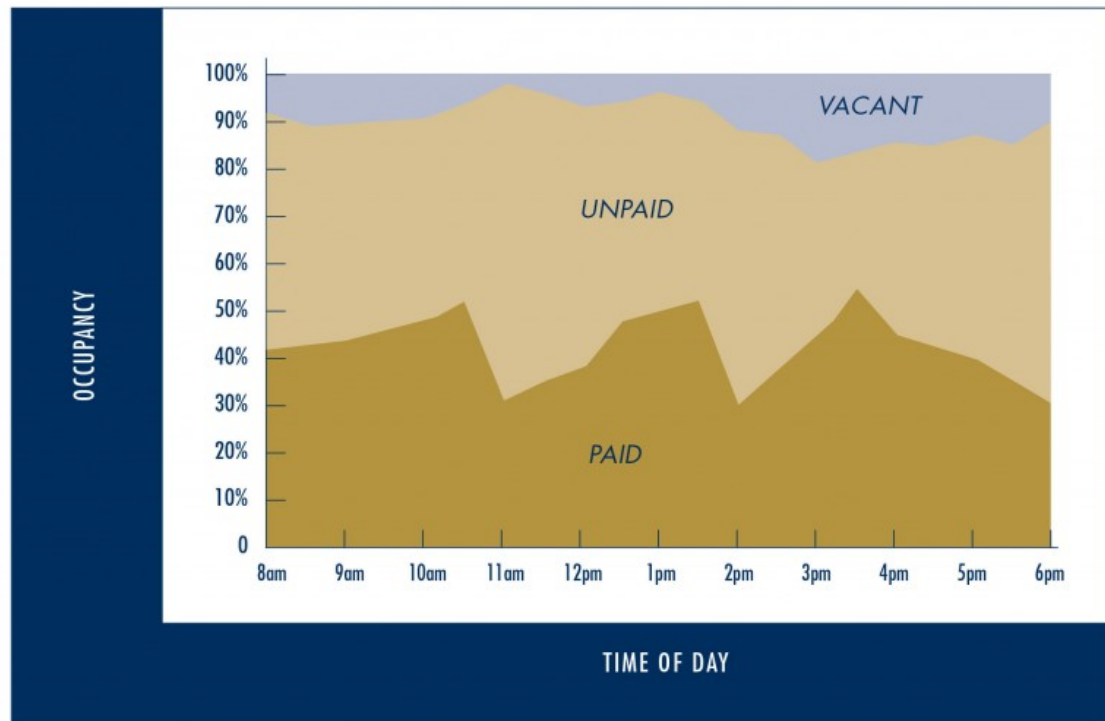
Market Design and Redistribution with Priced Roads

- Right now no market exists, so opportunity to design one from scratch means agencies can be proactive about fairness considerations
- Approaches:
 - Exemptions
 - Gradualism
 - Redistribution

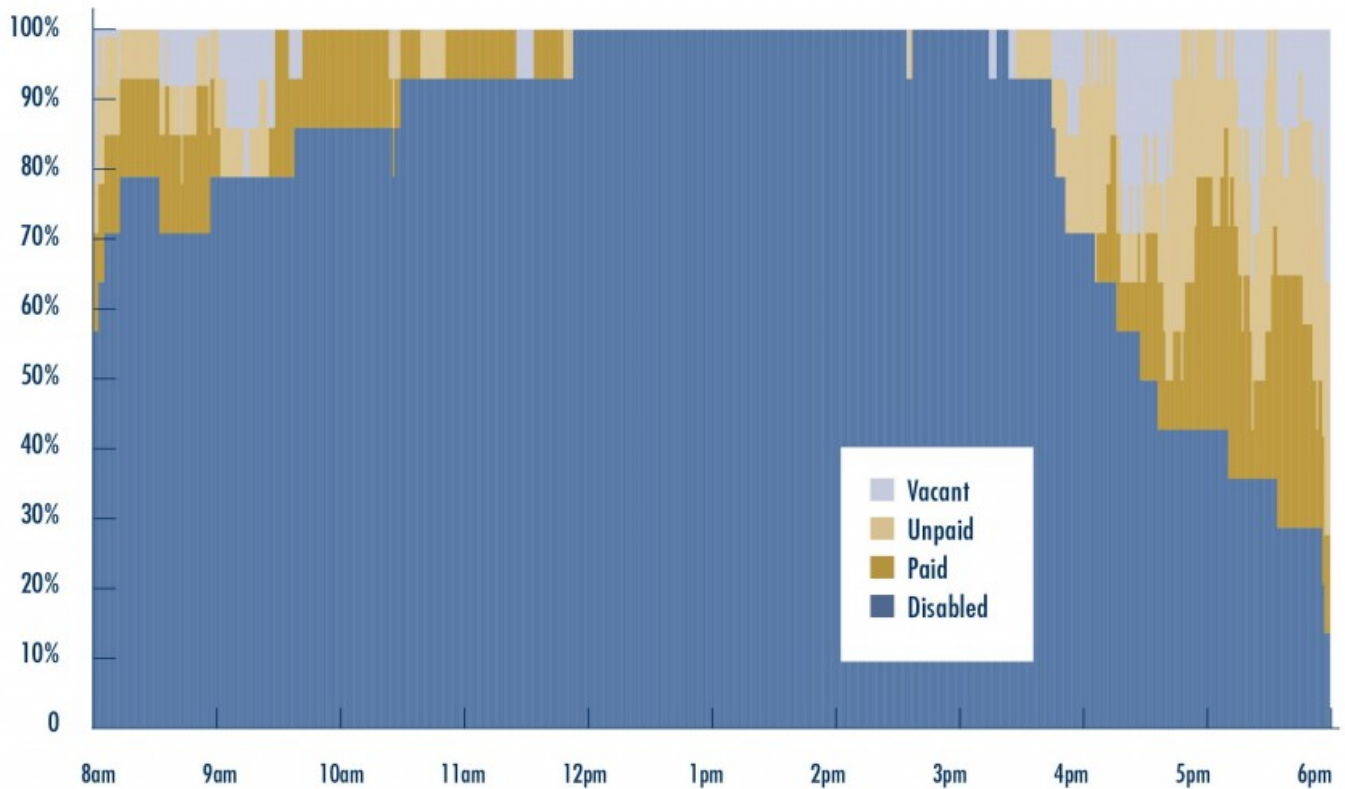
Exemptions come back to haunt you

FIGURE 1

Parking Occupancy and Payment, Hollywood Boulevard 2009 (\$1/Hour)



OCCUPANCY



TIME OF DAY

FIGURE 4
Occupancy Rates on Flower Street

Gradualism



592

Redistribution

- The economic ideal: lump sum payments to all people below a certain income level
- More feasible: transponders pre-loaded with money for income-qualifying people
- Other options: EITC-style rebates, discounted rates

A counterfactual

- Suppose all freeways today were congestion-priced
 - Much less congestion and pollution
 - More transit ridership
 - Revenue used to help low-income people, and pay for public projects
- Someone proposes making the roads free
- Would this be fair?

Status Quo Bias

- More congestion
- More pollution
- No revenue to compensate for the harm
- Would we support a proposal to abolish electric and water meters?

Thank you

mmanvill@ucla.edu

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