Thinking About Traffic Congestion in LA

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Traffic Congestion in LA:

A Serious Threat, or Merely Annoying?

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It depends

Conventional (Planning) Wisdom: 2007

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- Traffic congestion exacts a terrible social and economic toll on society
- People are addicted to cars, especially in LA
- Expanding road capacity helps in the short-term, but not in the long run
- Redesigning cities to increase densities and mix land uses, and investing in alternative transportation modes offer the best long-term means for reducing traffic congestion

Conventional (Planning) Wisdom: 2007

- Let me challenge some of these premises

Proposition 1

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- Queues at restaurants or theater: success or failure?

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- A larger number and wider variety of social interactions and economic transactions can be consummated in large, crowded cities than elsewhere – even with congestion

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- Former New York Yankee star Yogi Berra on why he no longer patronized a popular Manhattan nightclub:

  "*The place is too crowded, nobody goes there anymore*."

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Jarkarta, Indonesia

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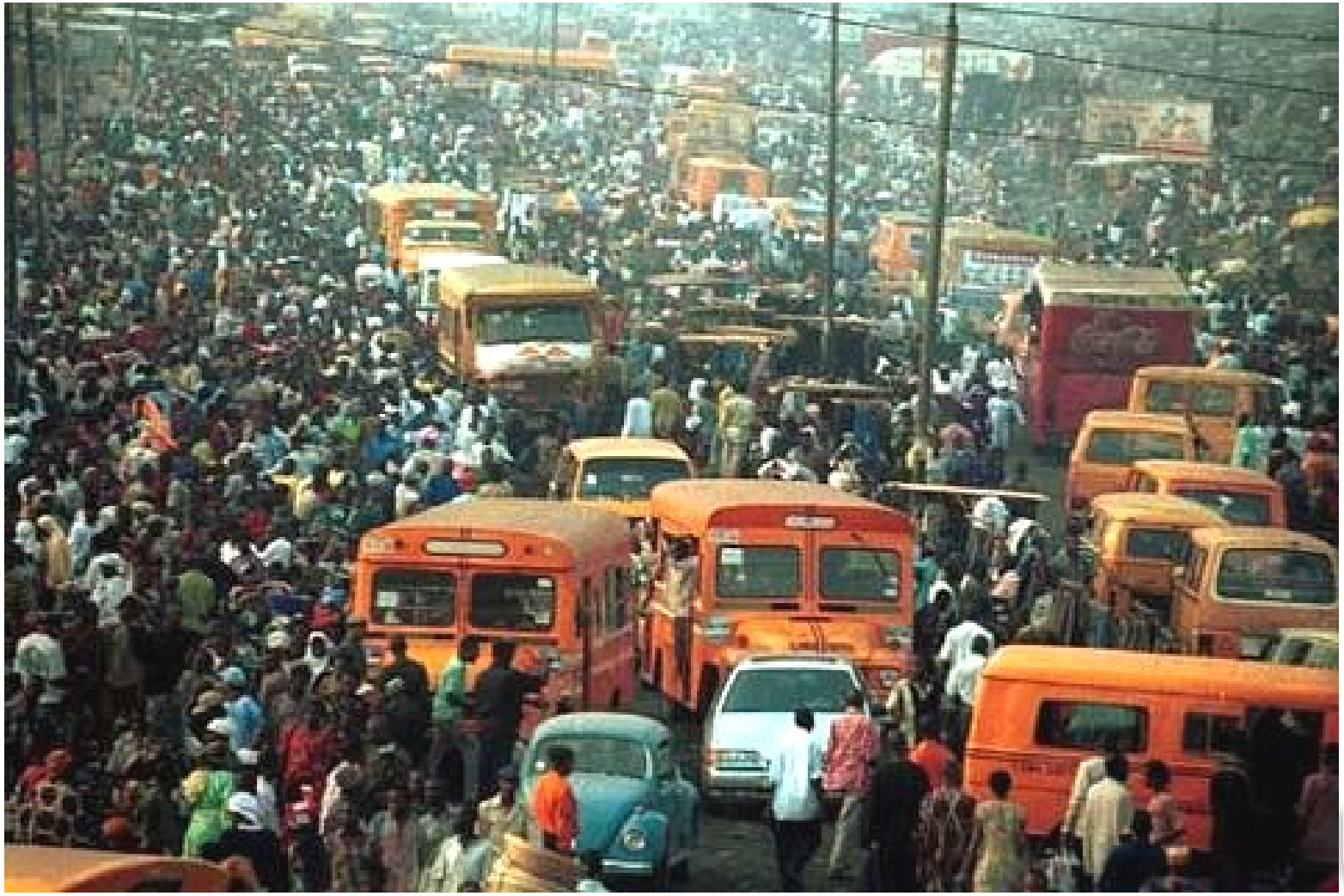
Lagos, Nigeria



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- Will (or when did) LA cross the line from annoying delays to Lagos-like debilitating congestion?

Proposition 2

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- That both flow and speed could increase without adding capacity seems preposterous.

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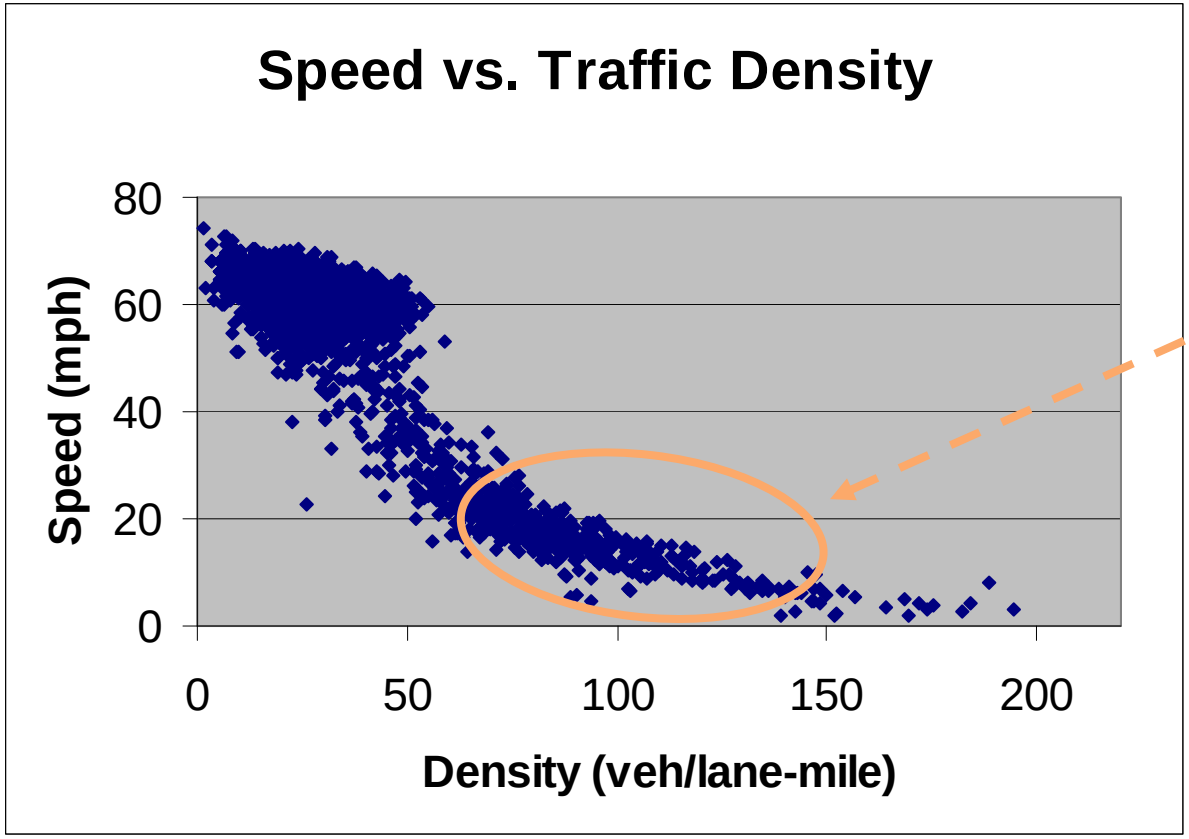
- "Non-linearity" (or "the tipping point") is hard to explain to public officials and the motoring public
- Hoses don't contract as flow increases
- That travelers can be "priced on" to facilities is counter-intuitive

The Congestion Conundrum: Traffic is recognizable, but not intuitive



Source: Kara Kockleman, University of Texas, 2003

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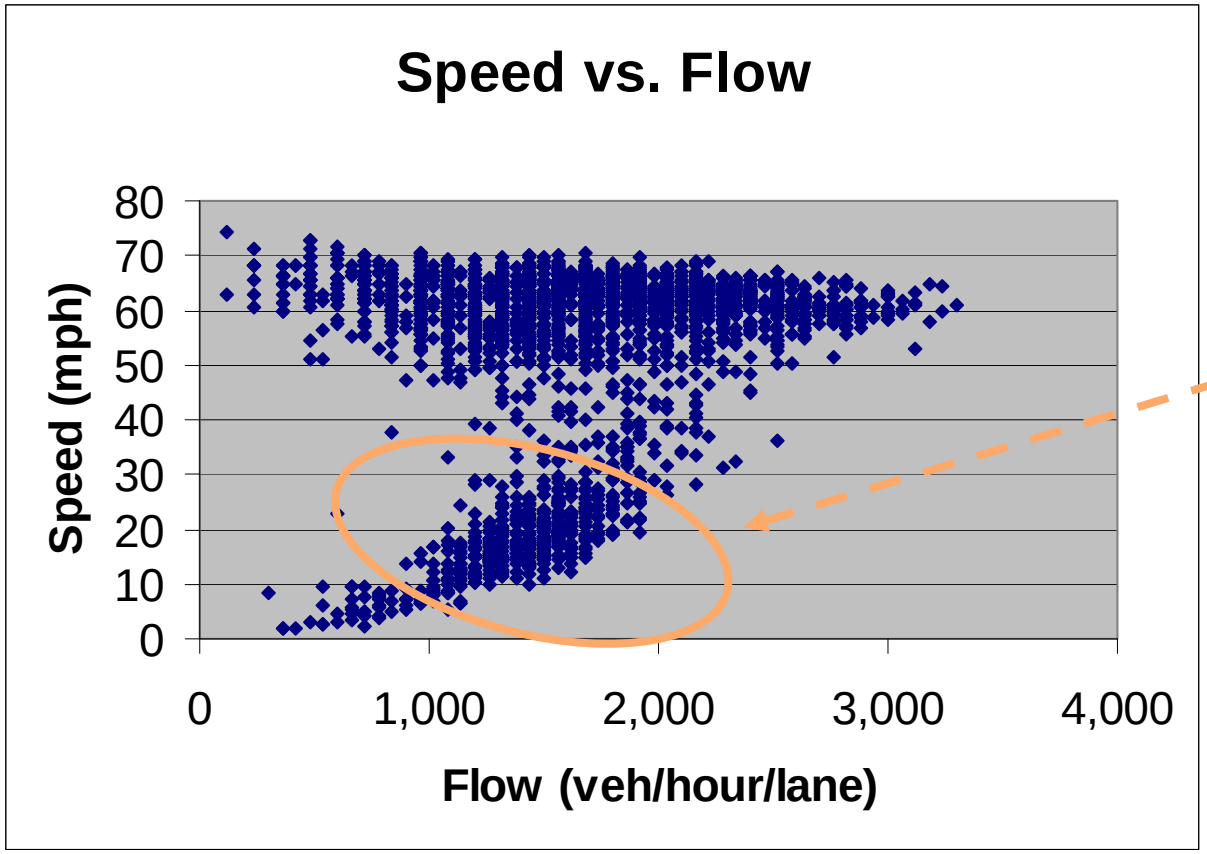

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- *Some argue*: widening roads is a waste of time and money

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- Others go further:
  - It makes things worse. More people are delayed and more emissions are produced after the expanded facility fills up again with traffic.
  - Like buying a bigger belt to address the problem of weight gain.

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- Expanding capacity can accommodate more activity (economic transactions and social interaction) even it does not eliminate congestion

Proposition 4

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- When capacity is expanded on a congested facility…
  - delay is reduced in the short term,
  - traffic speeds increase,
  - reducing the time costs of trips,
  - making travel more attractive,
  - travelers previously dissuaded from making car trips begin to do so,
  - and the facility gradually becomes congested again.
  - This, in a nutshell, is the latent-demand effect.

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- Some argue…

  Given latent/induced demand, emphasize operational improvements (such as coordinated signal timing and ramp metering) and transit-capacity expansions (like added rail transit and express bus service).

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- But such improvements are no less vulnerable to the recongesting effects of latent/induced demand.
  - If a new ramp-metering program smoothes traffic flow and reduces delay in the short-term,
  - Or if a new rail line that lures a substantial number of travelers off a parallel roadway,
  - latent/induced demand can still re-congest roads.

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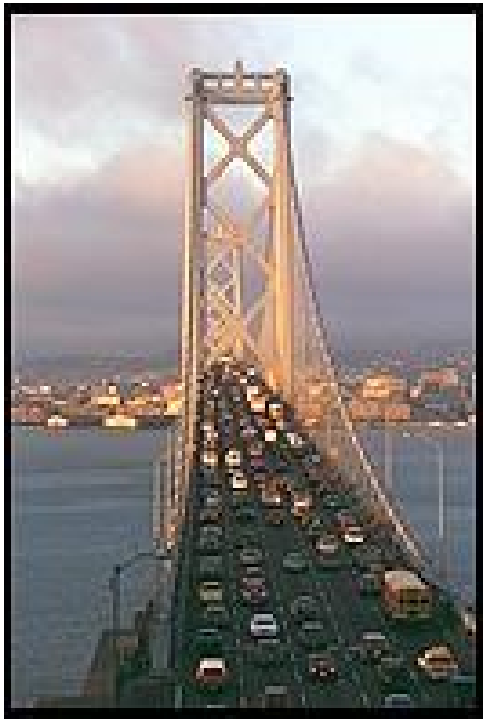
- *Example*: San Francisco-Oakland Bay Bridge when BART opened in the 1970s.



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- *Given latent/induced demand, some argue*:
  - We should focus instead on the land uses that generate and attract trips
  - Mix land uses and increase development densities into more compact, transit-oriented development

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- *Some argue*:
  - Given this, focus instead on the land uses that generate and attract trips.
  - Mix land uses and increase development densities into more compact, transit-oriented development.

- But compact development is unlikely to reduce congestion.

Proposition 5

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- Metropolitan land use patterns change very slowly, slower than changes in employment, trade, demographics, and especially technology

- Even in rapidly growing areas, new urban developments and new land uses change only a fraction of the overall urban fabric

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Changing land use patterns in an attempt to change travel behavior is a very long-term endeavor

- Significant changes to current land use arrangements would have to be maintained for decades before they could reshape overall travel origins and destinations

Proposition 6

Compact development – whether in older, central city areas, or in newer, outlying areas – increases congestion.

- Increased densities may lead to increased walking and transit use and to decreased car travel
  - but they do so largely by increasing congestion.

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- Traffic congestion decreases the attractiveness of automobile travel
  - increasing relative attractiveness of some other modes (though travelers may be worse off, overall, as a result).

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  - Transit use is highest in the oldest, largest, and most congestion cities largely because congestion and limited, expensive parking make auto travel comparatively less attractive

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  - Higher demand for transit travel, in turn, results in increased transit service, which makes transit comparatively more attractive

Population Density Versus Travel Density

Location	Population Density	Person Travel	Travel Density
	(people/acre)	*(vmt/person/day)*	*(vmt/acre/day)*
Healdsburg	5 people/acre	30 miles/person	150 miles/acre
Berkeley	30 people/acre	10 miles/person	300 miles/acre
San Francisco	250 people/acre	4 miles/person	1,000 miles/acre

Source: Wachs, 1996

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- Population density: 5,724 per square mile (***1st*** out of 69 urbanized areas)

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- Most research confirms that motorists do not pay the full costs they impose on society
- Lots of debate over how much automobile travel is under-priced

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If congestion is such a serious problem, then why so much hostility to the most promising long-term solution?

- There is general agreement that proper pricing of automobile use would:
  - reduce congestion
  - and increase the attractiveness of other modes such as public transit, bicycling, and walking

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- Central London
  - Traffic down 14%, transit use up 16%, delay down 31%

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- Public officials:
  - Toll roads and parking charges are risky and unpopular
  - Mitigate congestion with other (less effective) means
  - “Regardless of successes elsewhere, the idea wouldn’t work here”

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- Does the traveling public's frosty reception of pricing suggest that people see congestion as less of a problem than they let on?

- Or, do such attitudes simply reflect "The Congestion Conundrum" (i.e. that traffic is recognizable, but not intuitive)?

Questions? Comments?

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