TDM: Looking back, Moving forward

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My career began in TDM

...NESDAY, APRIL 4, 1990

SENATORS APPROVE CLEAN AIR MEASURE BY A VOTE OF 89-11

COMPROMISE WITH BUSH

Action in House Is Awaited—Bill Would Control Acid Rain, Toxins and Smog

Mandatory Employer-Based Trip Reduction
What Happened?

JENNIFER DILL

Transportation Research Record: Journal of the Transportation Research Board, 1618, 103-110; 1998

During the 1980s and 1990s, California witnessed the widespread adoption and rejection of a policy known as mandatory employer-based trip reduction (EBTR). Mandatory EBTR was implemented largely through city and county ordinances and air district rules. EBTR rules and ordinances required employers to implement programs to reduce the number of employees driving vehicles to their worksite. The programs were adopted to reduce traffic congestion, pollutant emissions, or both. However, opposition to mandatory programs from the business community led to their prohibition in California in 1995. The purpose of this paper is to examine the history of mandatory EBTR and to help answer the broad question, What happened? The research found that key factors in the demise of mandatory EBTR included issues of problem definition, goal

World War II, when citizens were urged to carpool to save gasoline and rubber. In the 1970s, efforts were institutionalized through federal requirements for transportation system management (TSM) at the regional level, the establishment of regional ridesharing or carpool agencies, and the federal Clean Air Act's list of transportation control measures (TCMs).

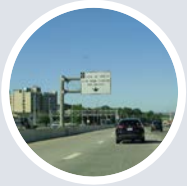
In the following decade, traffic congestion emerged as a leading public concern, with many suburban areas facing pressure for development of large new office parks (*1*). Many cities started to require TSM and transportation demand management (TDM) measures as a

What we were doing in the ‘80s & early ‘90s

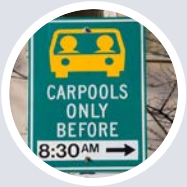
…aside from big hair and shoulder pads

Employer-based trip reduction regulations, employee commute surveys, TMAs

Carpool matching, Vanpools



HOV lanes



Guaranteed Ride Home, preferential parking, on-site transit pass sales, transit subsidies, marketing, events, bike parking, showers, parking cash out

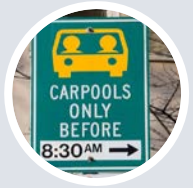
Compressed work weeks, telecommuting

What we've added

Employer-based trip reduction regulations, employee commute surveys, TMAs
Non-worksite programs

Carpool matching, vanpools
Ridehailing/TNCs (?)

HOV lanes, striped bike lanes
HOT lanes, toll lanes, red bus lanes, BRT, new types of bike infrastructure



Guaranteed Ride Home, preferential parking, on-site transit pass sales, transit subsidies, marketing, events, bike parking, showers, parking cash out
Bikeshare, Universal Basic Mobility

Compressed work weeks, telecommuting

We need to have a bigger impact

Challenge:
Defining the problem

Opportunity:
Health and well-being

Problems

- Half of adults and over three-quarters of high school students nationally do not get enough physical activity
- Even an extra 10 minutes a day could have significant impacts
- Psychological well-being and “epidemic of loneliness”

How active transportation helps

- Physical benefits of active transportation are clear. For example, a recent study estimated that if adults (age 40+) were at least moderately active for an additional 10 minutes per day, we could avert nearly 7 percent of annual deaths.
- Many studies have found that walking and bicycling, particularly for commuting, are associated with lower stress and greater well-being compared to driving

https://www.cts.umn.edu/research/featured/futureofmobility/Dill

Opportunity:
Addressing inequities

Universal Basic Mobility programs being tested in several cities, including Portland (Transportation Wallet), Los Angeles, Oakland, Pittsburgh, and more.

FTA will be funding demonstration programs

Mobility, Access & Transportation Insecurity: Creating Links to Opportunity Research and Demonstration Program

What's New

- On February 8, 2023, FTA announced the selection of the University of Minnesota-Center for Transportation Studies as the program lead for the Mobility, Access & Transportation Insecurity: Creating Links to Opportunity Research and Demonstration program, following the notice of funding opportunity published August 9, 2022. More information about the MATI program, including information for communities considering applying to be a demonstration site, will follow soon.

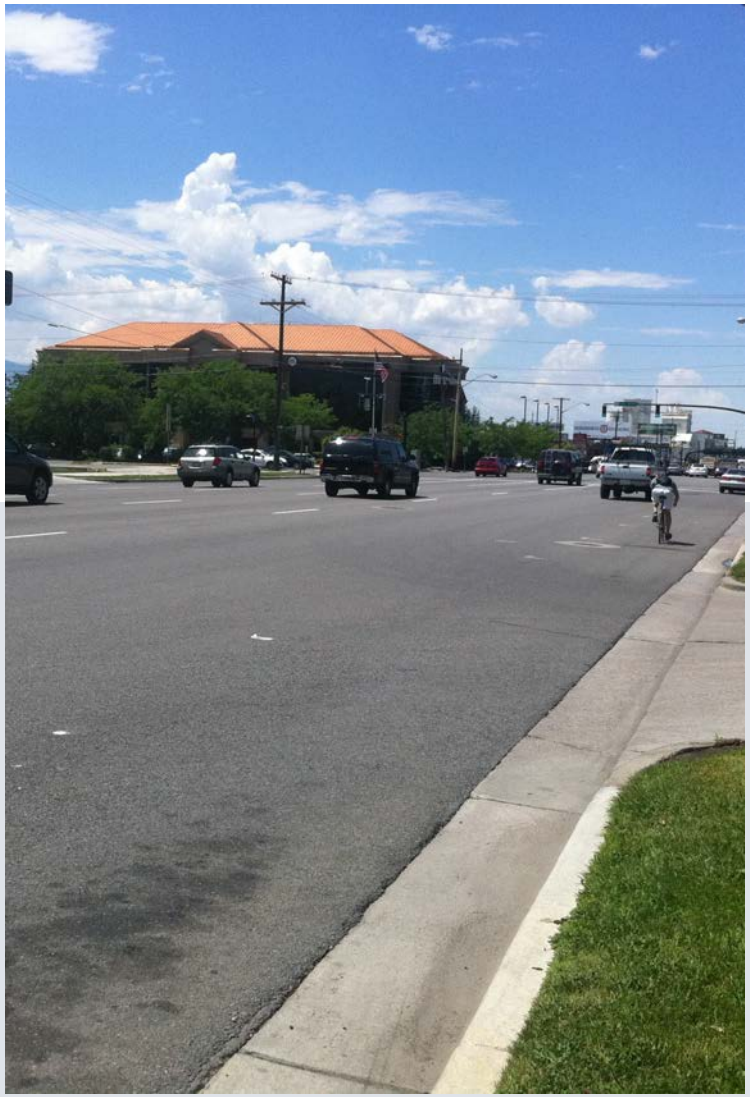
Connecting to other challenges

Transportation finance

Labor

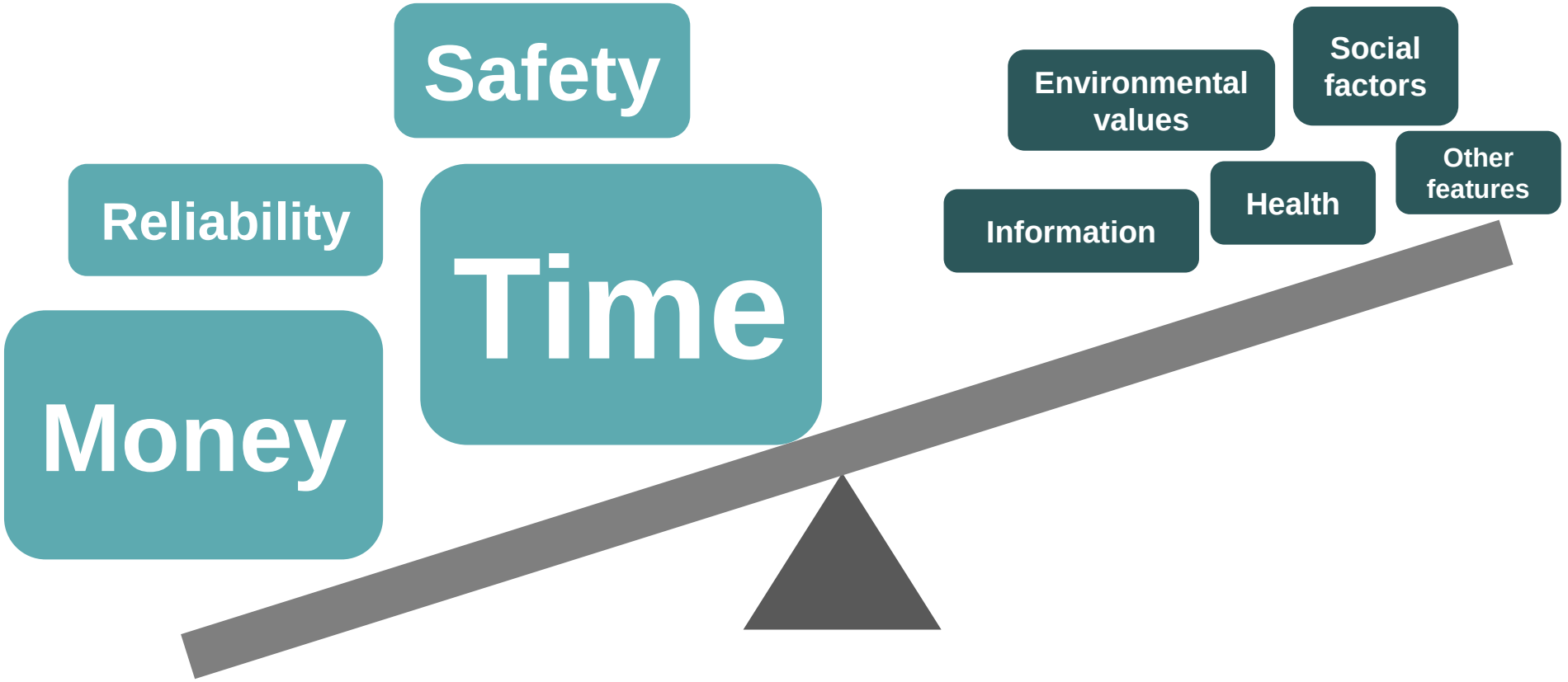
Housing

Economic development



Challenge:

We haven't been tackling the most important factors



What influences mode choice?

Time: Most people do not have overly long commutes

60% of all workers got to work in under 30 minutes in 2019
In the 50 largest metro areas 53% did so (1-year ACS estimates)
Only 9 metro areas where less than half of workers spend 30+ minutes commuting (including Seattle-Tacoma-Bellevue)

Among people driving to work in 2022, 74% take 30 minutes or less (2022 NHTS).

Time: Most people do not have overly long commutes

Except transit commuters

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Only 9 metro areas where less than half of workers spend 30+ minutes commuting (including Seattle-Tacoma-Bellevue)

Among people driving to work in 2022, 74% take 30 minutes or less (2022 NHTS).
Only 29% of transit commuters got to work in 30 minutes or less.

30 minutes driving

50 minutes transit, bike, pool, etc.

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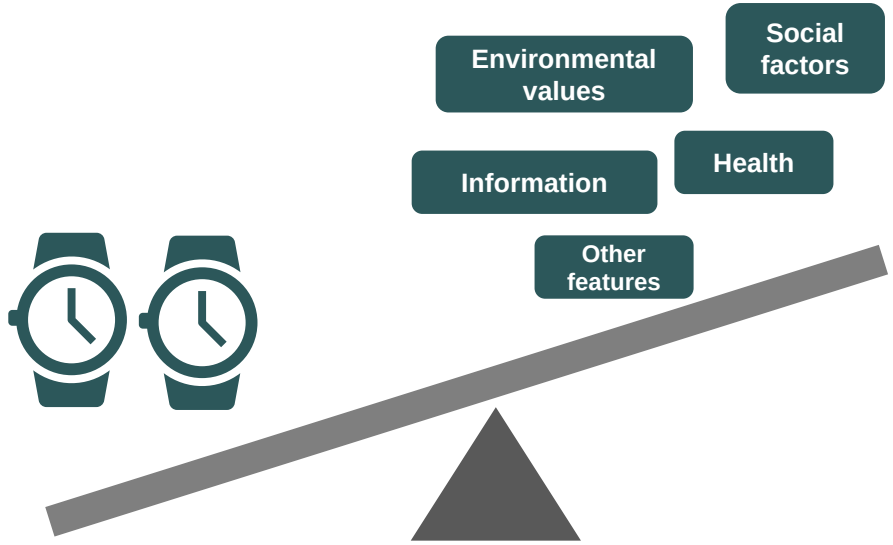


30 minutes driving

50 minutes transit, bike, pool, etc.

Time to drive alone

Time to take transit, bike, walk, pool

Opportunity: Transit priority

Red lanes

- Philadelphia: buses were 4-15% faster (City of Philadelphia *Evaluation Report*, August 2023)
- San Francisco: ratio of transit travel time to traffic travel time decreased (SFMTA, 2017)
- Portland: Reductions ranged from 0:40 to 1:29 (min:sec), but perceived as much greater by riders (Bertelson, TREC Seminar, May 20, 2022)

Other treatments

- Transit signal priority
- Stop design
- Network redesign
- Bus Rapid Transit

Opportunity:
Transit-oriented Development

20 years of surveys of TOD residents in the Portland region

- Residents commute by transit at higher rates than city residents overall
- Vehicle ownership rates are lower, even considering smaller household sizes
- 14% said they got rid of a vehicle after moving to the TOD because of the characteristics of the neighborhood
- 44% say they drive a lot less now compared to where they had lived before
- Few residents use transit for non-commute trips, except in TOD closer to downtown
- They are walking and biking to non-work destinations in their neighborhood

Opportunity: e-bikes

Why?

- Attractive to wider audience
- Overcomes barriers to bicycling
- Electric assist bikes provide health benefits
- ~half of owners use daily
- ~1/3 rides for commuting, 20% errands
- 2/3 would have driven instead
- 225 kg CO_2 reduced per year per owner

How?

- Purchase incentives (new statewide program in WA!)
  - *Many with preference for people with lower-incomes*
- Loan/library programs
- Information and marketing

https://trec.pdx.edu/e-bike-research

Opportunity: Slow down cars

Why?

- Higher speeds increase likelihood of severe or fatal injury
- Higher speeds reduce likelihood of using active transportation

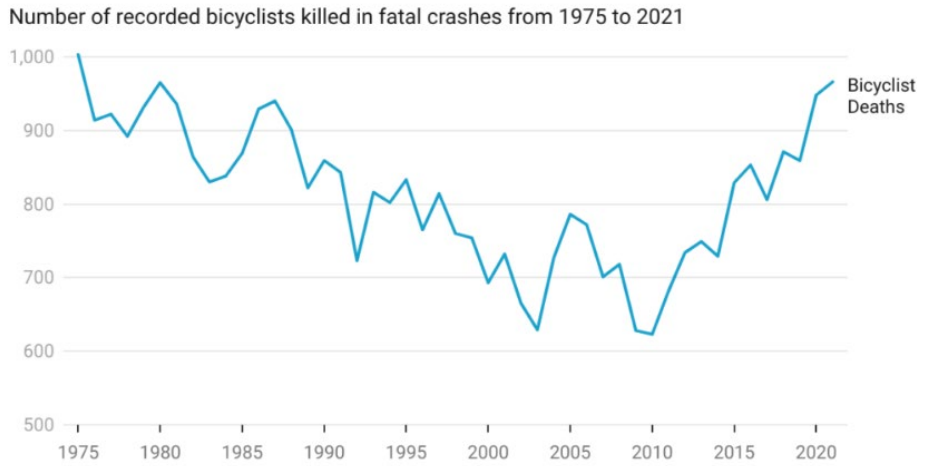
How?

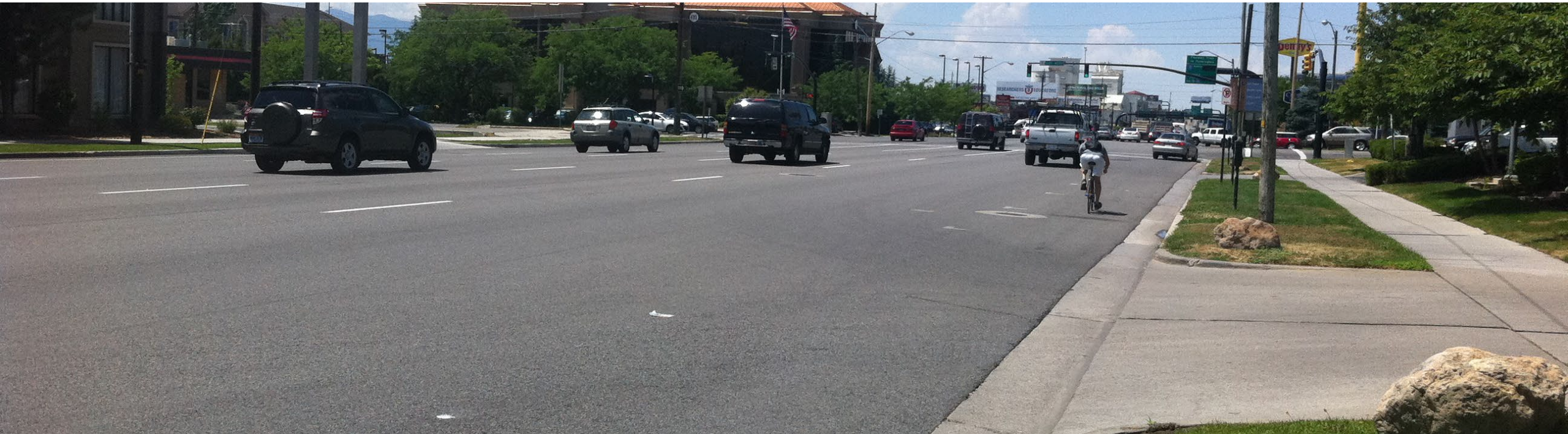
- Lower speed limits
- Better design, traffic calming, enforcement
- Don’t expand roadway capacity (induced demand)

Likelihood of severe or fatal injury for pedestrians struck by drivers traveling at these speeds.[1]

Graphic:https://www.cambridgema.gov/StreetsAndTransportation/PoliciesOrdinancesAndPlans/VisionZero/SpeedLimitsInCambridge;
Source: Tefft, Brian C. Impact Speed and a Pedestrian’s Risk of Severe Injury or Death, AAA Foundation for Traffic Safety, Washington DC, September, 2011

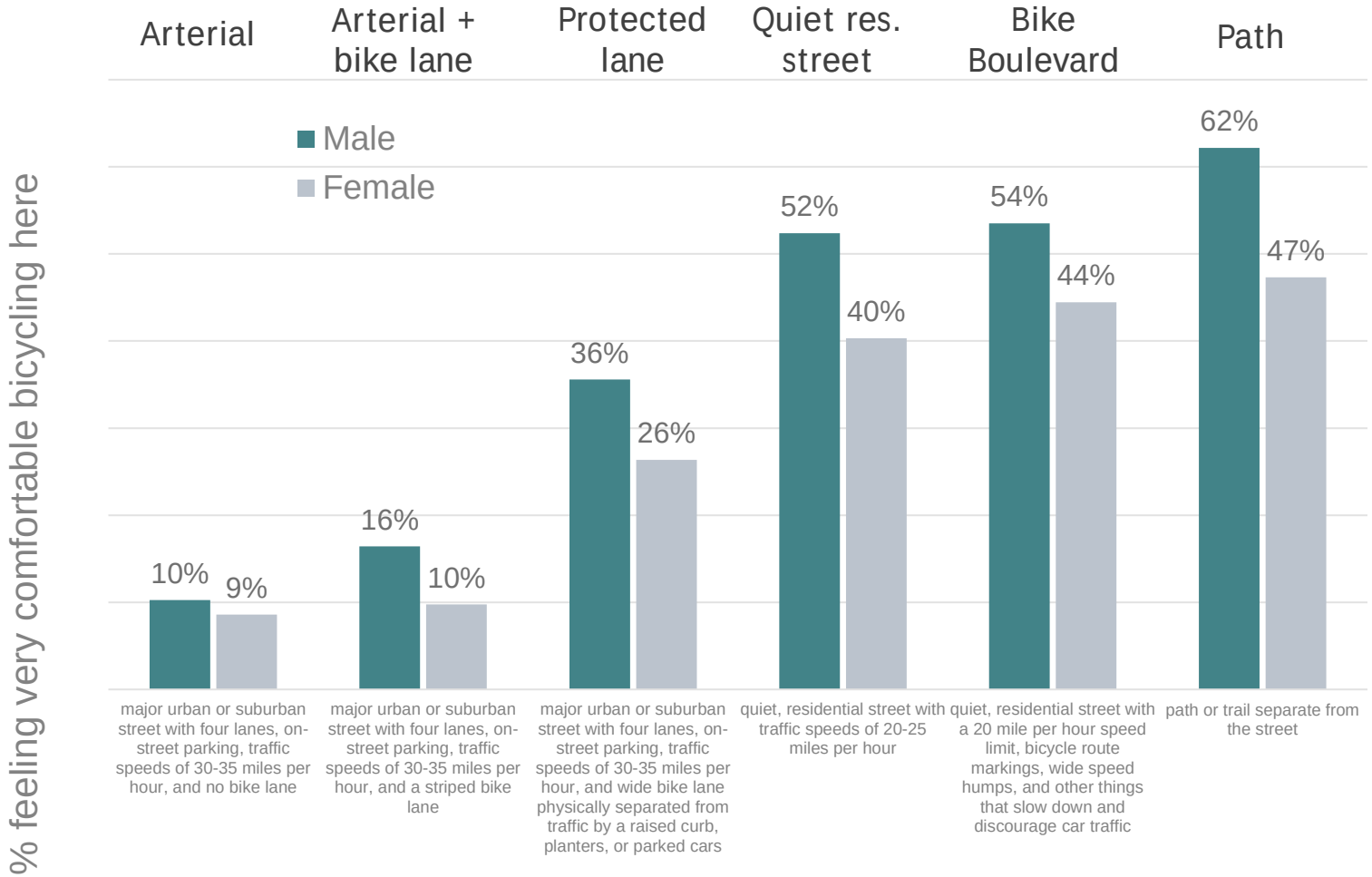
Safety: Most people do not feel safe biking





Opportunity:
More comfortable infrastructure

- Bicycle boulevards (aka neighborhood greenways)
- Separated/Protected bike lanes and intersections
- Bike boxes
- Bike signals



Opportunity:
More comfortable infrastructure

Source: NAR®-PSU Transportation & Community Priorities Survey, 2015

Money:
Gas prices have had limited impact

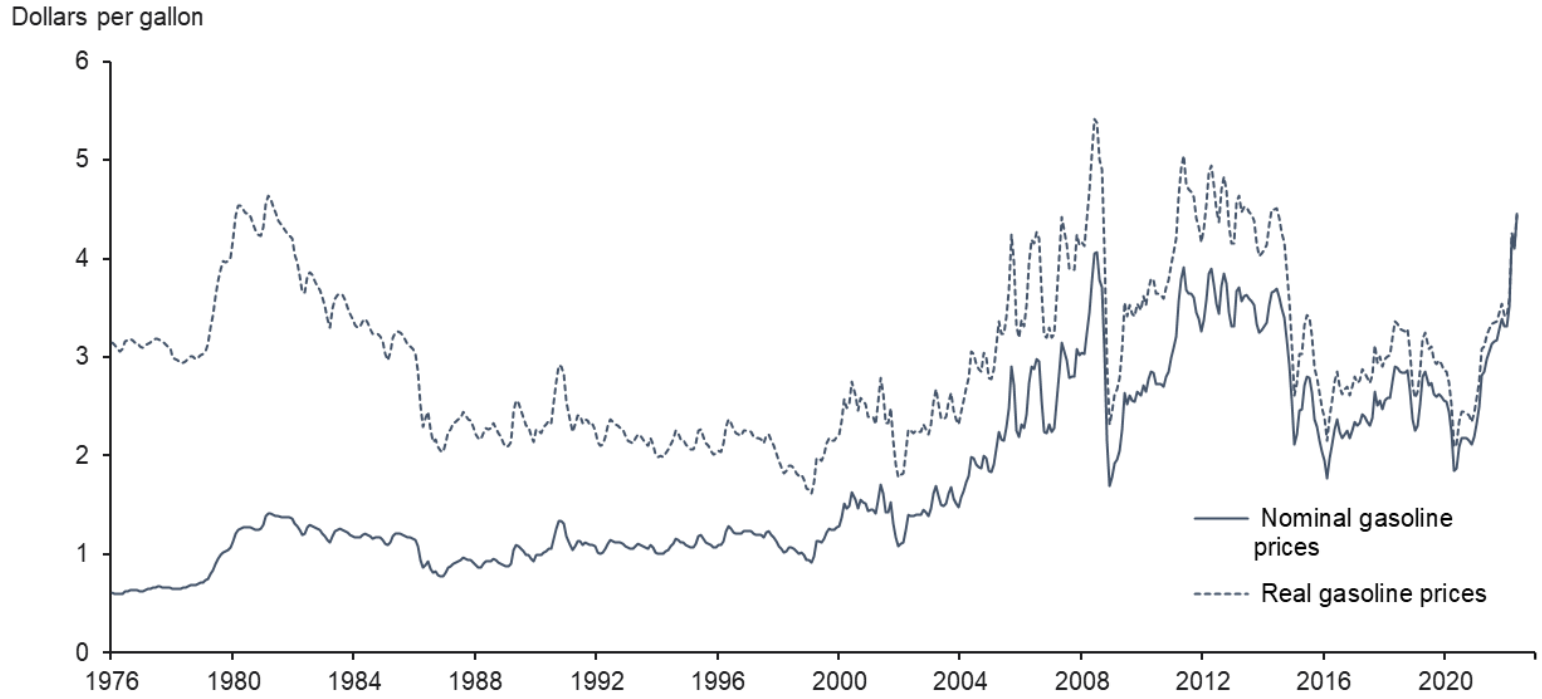
https://www.dallasfed.org/research/economics/2022/0621

Fuel has low price elasticity of demand

“U.S. fuel consumption bending, not breaking

Still, U.S. fuel consumption has shown resilience. There has been no abrupt drop at today’s elevated prices.”

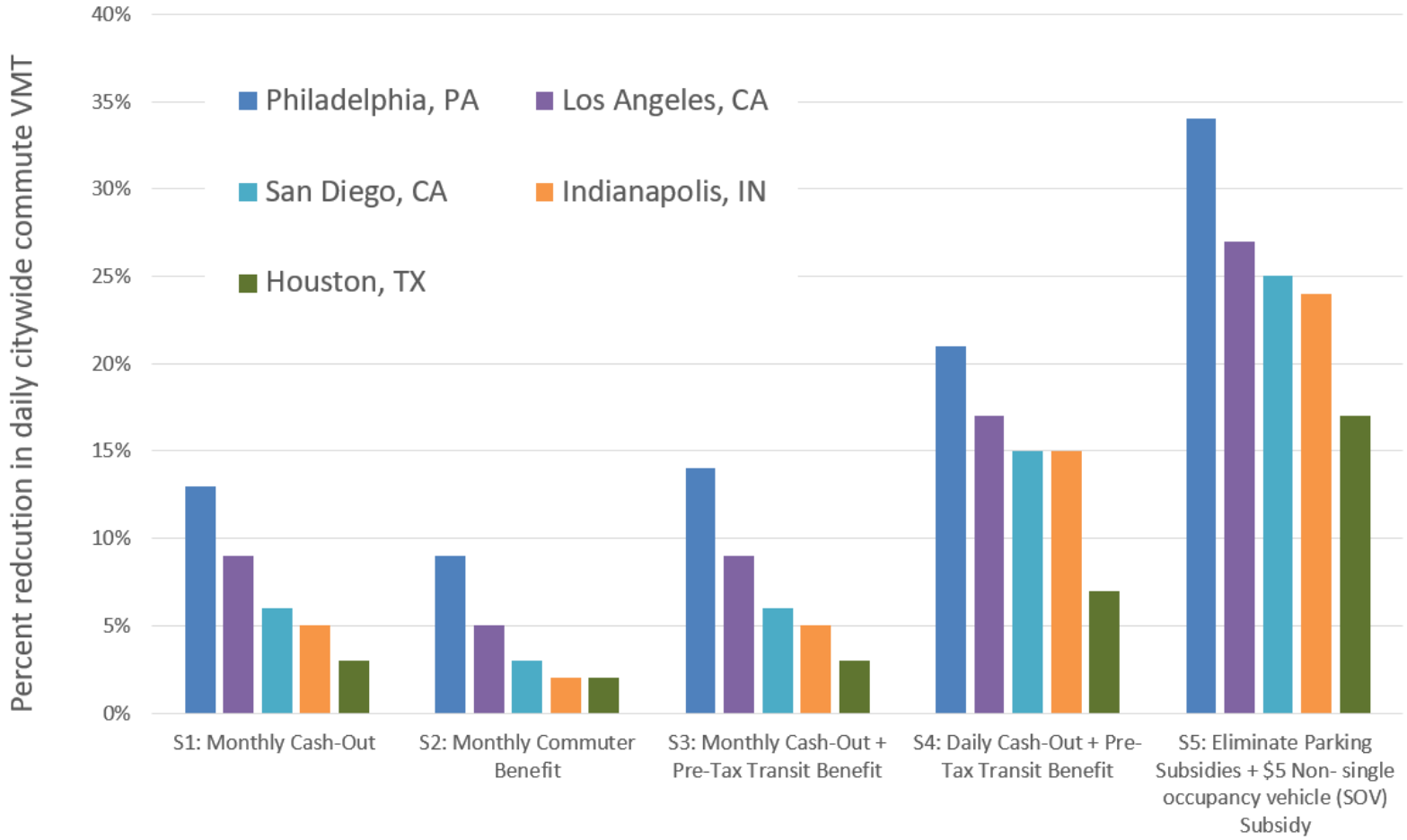
Chart 1
Gasoline Prices Remain Below Record Levels in Real Terms



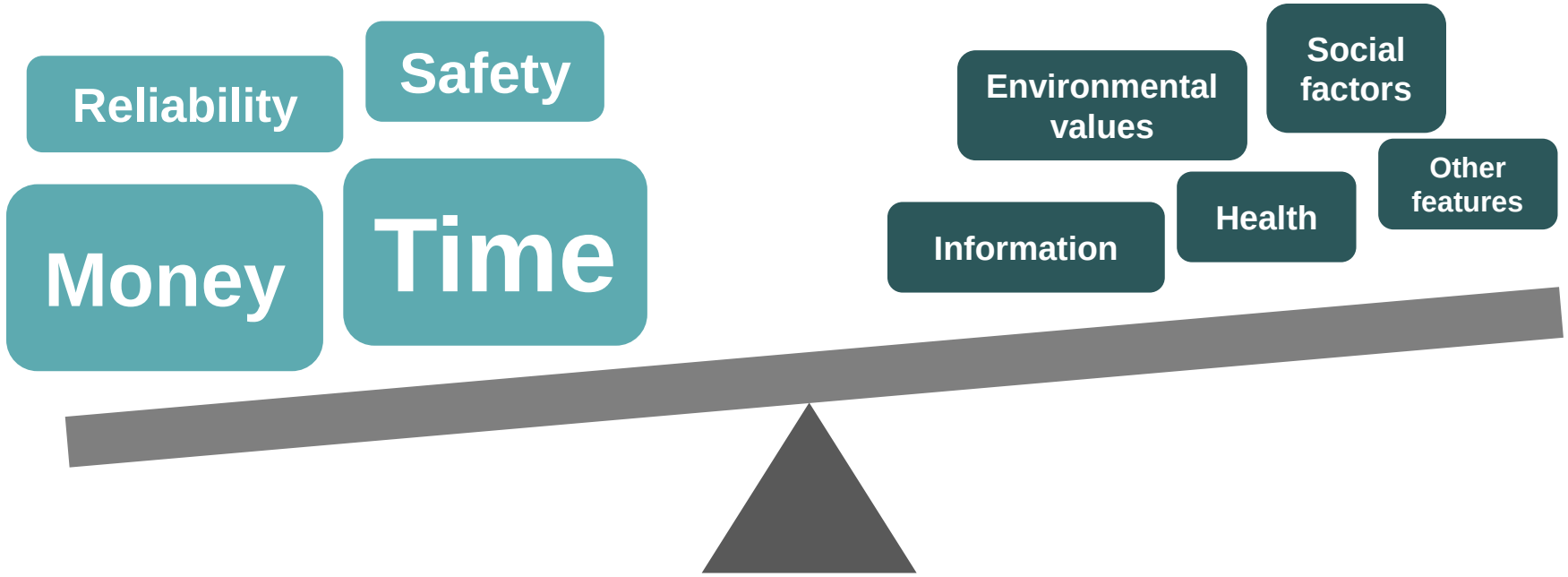
NOTES: Prices are monthly national averages for regular-grade gasoline. Real (inflation-adjusted) prices are calculated with June 2022 Consumer Price Index data.
SOURCES: Energy Information Administration; Bureau of Labor Statistics.

Opportunity: Parking cash out

- Monthly parking cash-out more effective than a monthly transit/vanpool benefit
- Daily cash-out is more effective than monthly



An Assessment of the Expected Impacts of City-Level Parking Cash-Out and Commuter Benefits Ordinances, FHWA-HOP-23-023, March 28, 2023
Note: results for NYC, Chicago, Washington DC, and Boston not displayed



Now we can leverage additional TDM tools more effectively

Additional opportunities

Reducing car ownership

Children (school and other travel)

Applying psychological theory to better target TDM programs

Thank you!

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