



The High Cost of Free Parking

DONALD SHOUP

Presented to Salt Lake
County October 4th 2018





Parking in Silicon Valley



Ample free parking increases the demand for driving.

San José's minimum parking requirements



Sandy, Utah



Murray, Utah



Murray's minimum parking requirements





Parking Standards

Edited by
Michael Davidson and Fay Dolnick

APA

American Planning Association

PAS

Planning Advisory Service
Report Number 510/511

Survey of parking requirements for 660 land uses

a

abattoir (*see* slaughterhouse)
accessory dwelling unit
administrative office (*see* office uses)
adult use
adult use, adult arcade
adult use, adult cabaret
adult use, adult motion picture theater
adult use, adult theater
adult use, book store
adult use, entertainment facility
adult use, massage parlor (*see also* massage establishment)
adult use, sex novelty shop
advertising agency (*see also* office use)
agricultural use, unless otherwise specified (*see also* farm uses)
agricultural processing plant (*see also* industrial uses)
agricultural-related industry (*see also* agricultural use, unless otherwise specified)
agricultural sales and service use (*see also* farm supply store; feed store)
aircraft charter service
airport (*see also* airport terminal)
airport hangar
airport, local/private use
airport terminal (*see also* airport; transportation terminal)
ambulance service
amphitheater (*see also* stadium)
amusement enterprise (*see also* recreation facility uses)
amusement enterprise, indoor
amusement enterprise, outdoor
amusement park
amusement park, children's
amusement park, water
ancillary use (*see* accessory use)
animal boarding facility
animal breeder establishment
animal grooming salon
animal hospital
animal sales establishment (*see* pet shop)
animal shelter
animal training facility
antique shop (*see also* second-hand store)
apartment (*see* dwelling, apartment uses)
apartment hotel (*see* extended-stay hotel)
apparel store (*see* clothing store)
appliance and equipment repair establishment (*see also* equipment uses)

ALL USES

appliance sales establishment
aquaculture use
aquarium
arboretum (*see also* botanical gardens; community garden)
arcade, amusement (*see also* amusement enterprise uses)
archery range (*see also* rifle range; shooting range)
arena (*see* stadium)
armory
art gallery (*see also* cultural uses)
art school (*see* educational facilities, school for the arts)
art supplies store
artisan workshop (*see also* live-work studio)
artist studio (*see also* artisan workshop; live-work studio)
asphalt manufacturing facility (*see also* industrial use, heavy)
assembly hall (*see also* auditorium; civic center)
assisted living (*see* elderly housing, assisted living)
asylum (*see* mental health facility)
athletic field (*see also* ball field; grandstands; recreation facility uses)
auction, automobile
auction house
auditorium (*see also* assembly hall; civic center)
automated teller machine (ATM)
automated teller machine (ATM), exterior, on bank property
automobile convenience store (*see* gas station, mini-mart)
automobile dealership (*see also* motor vehicle sales establishment)
automobile graveyard (*see* automobile salvage yard; junk yard)
automobile impound facility (*see also* towing service)
automobile laundry (*see* car wash uses)
automobile maintenance, quick service establishment (*see also* automobile repair service establishment)
automobile mall (*see* automobile dealership uses)
automobile parts store
automobile rental establishment (*see also* motor vehicle rental establishment)
automobile repair service establishment (*see also* gas station; motor vehicle repair service establishment; tire store and

service establishment)
automobile salvage yard (*see also* junk yard)
automobile service station (*see also* gas station)

b

bait shop (*see also* retail use, unless otherwise specified)
bakery
bakery, wholesale
ball field (*see also* athletic field; grandstands; recreation facility uses)
ballroom (*see also* banquet hall; dance hall)
bank (*see also* accessory banking; automated teller machine (ATM); credit union)
bank, drive-thru only (*see also* drive-thru use, unless otherwise specified)
bank with drive-thru (*see also* drive-thru use, unless otherwise specified)
bank, without drive-thru
banquet hall (*see also* ballroom; dining room; meeting hall)
bar (*see also* beer garden; bottle club; brew pub; night club)
barber shop (*see also* beauty shop; personal services establishment)
baseball field (*see* ballfield)
basketball court
batch plant (*see* concrete production plant)
bathhouse (*see also* health spa; sauna bath)
batting cage facility
beach, commercial
beach, community
beauty shop (*see also* barber shop; personal services establishment)
beauty school (*see also* educational facility; trade school)
bed and breakfast home
bed and breakfast inn (*see also* tourist home)
beer garden (*see also* outdoor seating area)
bicycle rental and repair shop
bicycle repair shop
bicycle sales shop
billiard hall (*see* pool hall)
big box retail establishment (*see also* department store; shopping center uses)
bingo hall
blood donor center
blueprinting shop (*see also* copy shop; printing and publishing facility)
boarding house (*see also* lodging house; rooming house)

a

abattoir (see *slaughterhouse*)**accessory dwelling unit**

- 1 additional space, on the same zone lot (*Greensboro, N.C., pop. 223,891*)
- ✓ • 1 per attached accessory dwelling unit, in addition to other required spaces (*Washoe County, Nev., pop. 339,486*)
- 1 per bedroom (*Reno, Nev., pop. 180,480*)
- 1 space (*Encinitas, Calif., pop. 58,014*)
- 1 space per unit (*Palo Alto, Calif., pop. 58,598*)
- 2 spaces per unit; such space must have convenient access to a street (*Smithfield, Va., pop. 6,324*)



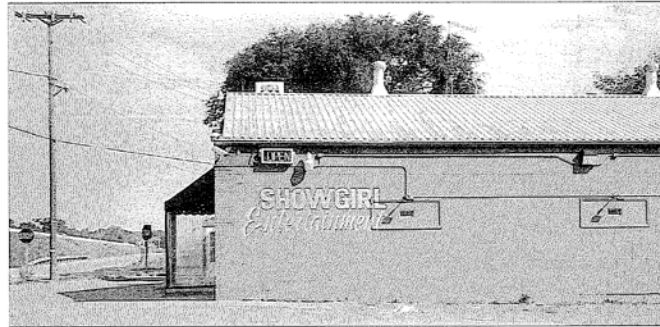
Bicycle Parking Standard: 0.5 per 1,000; 1 per 20 seats (*Tigard, Ore., pop. 41,223*)

adult use adult arcade

- 1 parking space shall be provided for every 2 occupants per the allowable occupant load as established by the city's building official or fire marshal, whichever standard is greater. In addition, 1 parking space shall be provided for each employee or independent contractor on the maximum shift. (*Santa Clarita, Calif., pop. 151,088*)

adult use, adult cabaret

- 1 parking space shall be provided for every 2 occupants per the allowable occupant load as established by the city's building official or fire marshal, whichever standard is greater. In addition, 1 parking space shall be provided for each employee or independent contractor on the maximum shift. (*Santa Clarita, Calif., pop. 151,088*)
- 1 space per 25 square feet of gross floor area (*Garden Grove, Calif., pop. 165,196*)



adult use

administrative office (see *office uses*)**adult use**

- 0.3 per seat, plus 3.3 per 1,000 square feet of gross floor area (*Tampa, Fla., pop. 303,447*)
- 1 per 60 square feet (*Henderson, Nev., 175,381*)
- 10 per 1,000 square feet (*Hickory, N.C., pop. 37,222*)
- 12 per 1,000 square feet (*St. Mary's County, Md., pop. 86,211*)
- Minimum: 1 per 500 square feet above first 2,400 square feet
- Maximum: 1 per 150 square feet (*Pittsburgh, Pa., pop. 334,563*)
- Minimum: 1 per 250 square feet of gross floor area
- Maximum: 1 per 200 square feet of gross floor area (*Glenville, N.Y., pop. 28,183*)

- 1 per 200 square feet (*Fort Wayne, Ind., pop. 205,727*)
- 10 per 1,000 square feet, but not less than 15 (*Clark County, Nev., pop. 1,375,365*)

adult use, adult motion picture theater

- 1 off-street parking space for each 10 seats or equivalent (*San Bruno, Calif., pop. 40,165*)
- 1 parking space shall be provided for every 2 occupants per the allowable occupant load as established by the city's building official or fire marshal, whichever standard is greater. In addition, 1 parking space shall be provided for each employee or independent contractor on the maximum shift. (*Santa Clarita, Calif., pop. 151,088*)
- 1 space for each 8 fixed seats or 1 space for each 100 square feet of spectator assembly area not containing fixed seats (*Seattle, Wash., pop. 563,374*)

A parking requirement sampler

Barber shop	2 spaces per barber
Beauty shop	3 spaces per beautician
Nunnery	1 space per 10 nuns
Rectory	3 spaces per 4 clergymen
Sex novelty shop	3 spaces per 1,000 square feet
Gas station	1.5 spaces per fuel nozzle
Swimming pool	1 space per 2,500 gallons
Mausoleum	10 spaces per maximum number of interments in a one-hour period

Planners who set minimum parking requirements:

Don't know how much the required parking spaces cost.

Don't know how much the parking requirements increase the cost of housing and everything else.

Don't know how the parking requirements affect urban design.

Don't know how the parking requirements affect congestion.

Don't know how the parking requirements affect air pollution.

Don't know how the parking requirements affect fuel consumption and CO₂ emissions.

Have no training in how to set a parking requirement.

Are politicizing what should be business decisions.

Are governmentalizing what should be market choices.

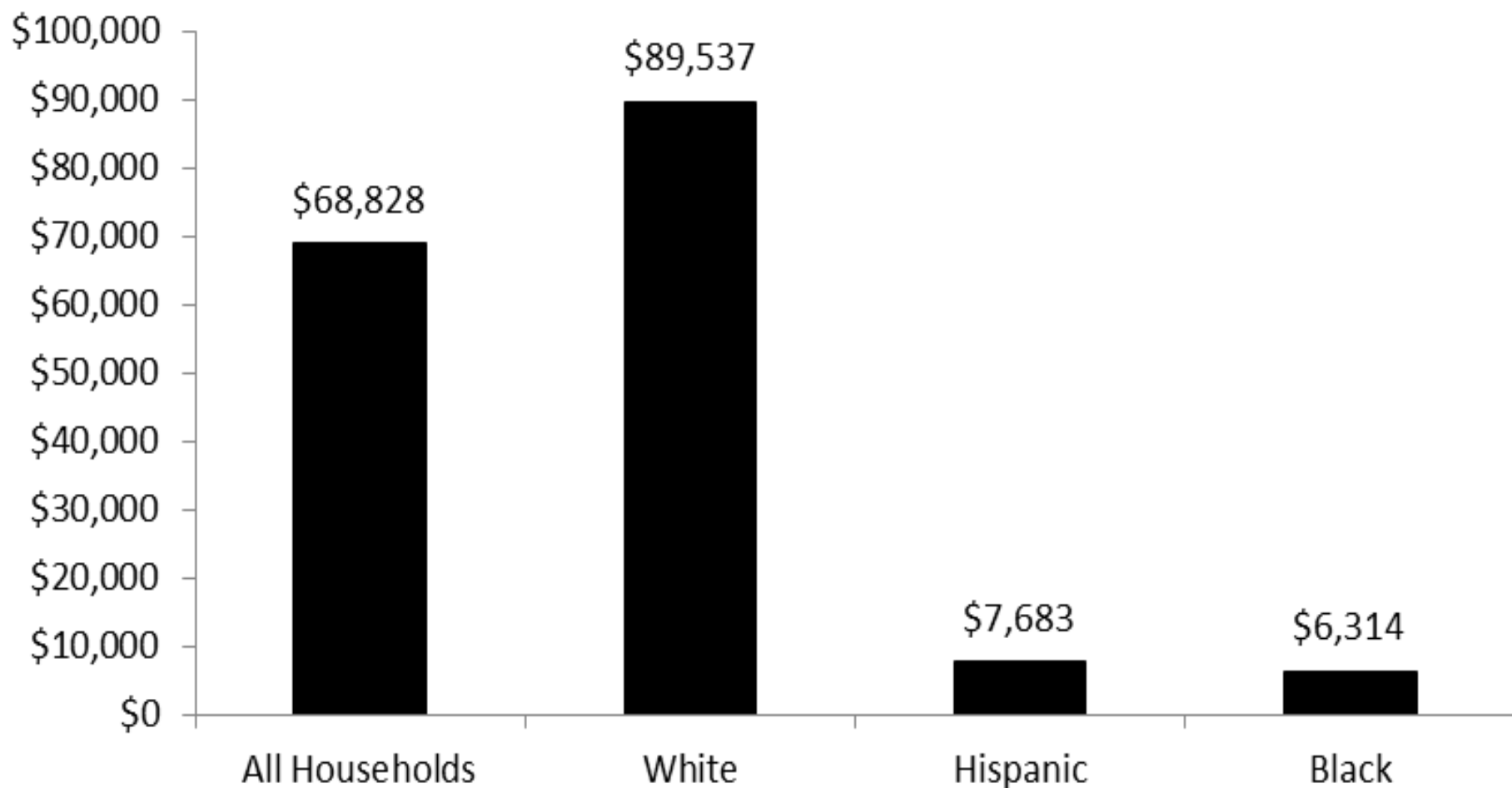
Table 1. The Construction Cost of a Parking Space

City	Construction Cost per Square Foot		Construction Cost per Space	
	Underground	Aboveground	Underground	Aboveground
	\$/sq ft	\$/sq ft	\$/space	\$/space
	(1)	(2)	(3)=(1)x330	(4)=(2)x330
Boston	\$95	\$75	\$31,000	\$25,000
Chicago	\$110	\$88	\$36,000	\$29,000
Denver	\$78	\$55	\$26,000	\$18,000
Honolulu	\$145	\$75	\$48,000	\$25,000
Las Vegas	\$105	\$68	\$35,000	\$22,000
Los Angeles	\$108	\$83	\$35,000	\$27,000
New York	\$105	\$85	\$35,000	\$28,000
Phoenix	\$80	\$53	\$26,000	\$17,000
Portland	\$105	\$78	\$35,000	\$26,000
San Francisco	\$115	\$88	\$38,000	\$29,000
Seattle	\$105	\$75	\$35,000	\$25,000
Washington, DC	\$88	\$68	\$29,000	\$22,000
Average	\$103	\$74	\$34,000	\$24,000

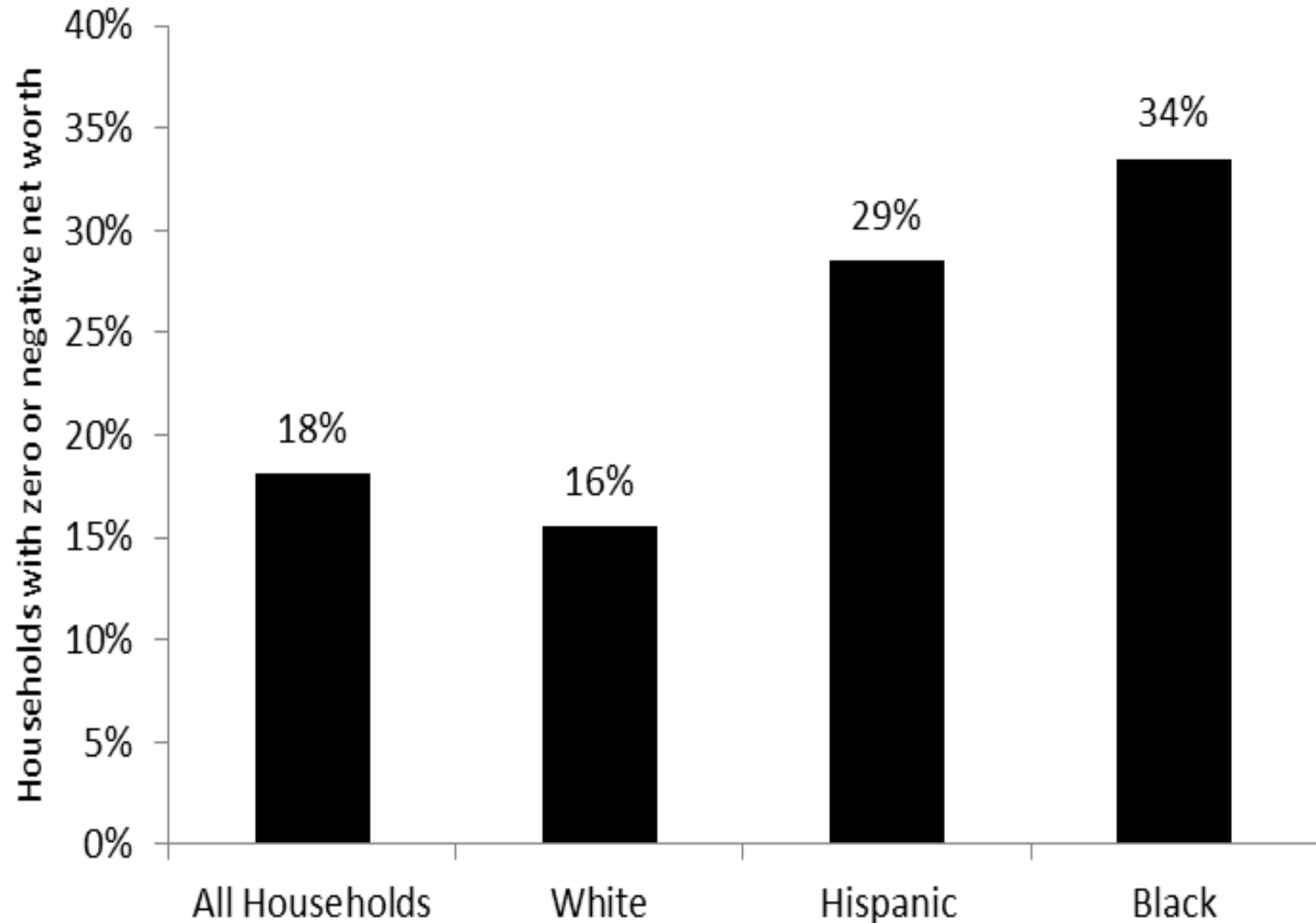
Source: Rider Levett Bucknall, Quarterly Construction Cost Report, Fourth Quarter 2012

One structured parking space costs more than the entire net worth of many families.

Median Net Worth of US Households, 2011



Percentage of US households with zero or negative net worth



Parking versus Housing

The United States has at least 1,300 square feet of parking space per car.

The United States has about 720 square feet of housing space per person.

Cars have more space for parking than humans have for housing.

Most parking is free for cars, and most housing is expensive for people.

We have a surplus of cars and a shortage of housing, with bad consequences.

Free parking encourages us to buy cars, consume energy, congest traffic, and pollute the air.

Expensive housing burdens everyone and makes some people homeless.

We have our priorities for parking and housing the wrong way around.

Cities should stop requiring off-street parking.

Can cities remove parking requirements?





LANE

PAVE LANE

PAVE LANE









ONE WAY

Grand



9th St

ONE WAY

ONE WAY

01/01/2011



The solution is in the site.



Effects of removing parking requirements and building job-adjacent housing on former parking lots

Create jobs

Increase the housing supply

Reduce time spent commuting

Reduce spending on cars and fuel

Reduce traffic congestion and air pollution

Increase the demand for smart parking technology

Slow climate change

Three Reforms in Parking Policy

1. Charge the right price for curb parking.
The lowest price that will leave one or two vacant spaces on each block—performance-based pricing
2. Establish Parking Benefit Districts to spend the meter revenue in the neighborhoods that generate it.
Revenue return will make performance-based prices for curb parking politically popular.
3. Reduce or remove off-street parking requirements. Do not require additional parking when a building's use changes.
Freedom from parking requirements will allow higher density and new uses for old buildings.

1. Demand-based Parking Prices

Demand-based prices adjust over time to maintain a few vacant spaces.

The goal is to keep about 85 percent of the parking spaces occupied all the time.

The lowest price a city can charge and still leave one or two open spaces on every block.

If one curb space are open on each side of each block, everyone will see that convenient parking is available everywhere.

The only thing worse than paying for parking is having no parking.

Before SFpark



Block A - Central Business District Location - 0 Open Spots



Block B - Nearby Location - 3 Open Spots

After SFpark



Block A - Central Business District Location - 1 Open Spot



Block B - Nearby Location - 2 Open Spots

Three Reforms in Parking Policy

1. Charge the right price for curb parking.
The lowest price that will leave one or two vacant spaces on each block—performance-based pricing
2. Establish Parking Benefit Districts to spend the meter revenue in the neighborhoods that generate it.
Revenue return will make performance-based prices for curb parking politically popular.
3. Reduce or remove off-street parking requirements. Do not require additional parking when a building's use changes.
Freedom from parking requirements will allow higher density and new uses for old buildings.

1. Demand-based Parking Prices

Demand-based prices adjust over time to maintain a few vacant spaces.

The goal is to keep about 85 percent of the parking spaces occupied all the time.

The lowest price a city can charge and still leave one or two open spaces on every block.

If one curb space are open on each side of each block, everyone will see that convenient parking is available everywhere.

The only thing worse than paying for parking is having no parking.

Before SFpark



Block A - Central Business District Location - 0 Open Spots



Block B - Nearby Location - 3 Open Spots

After SFpark

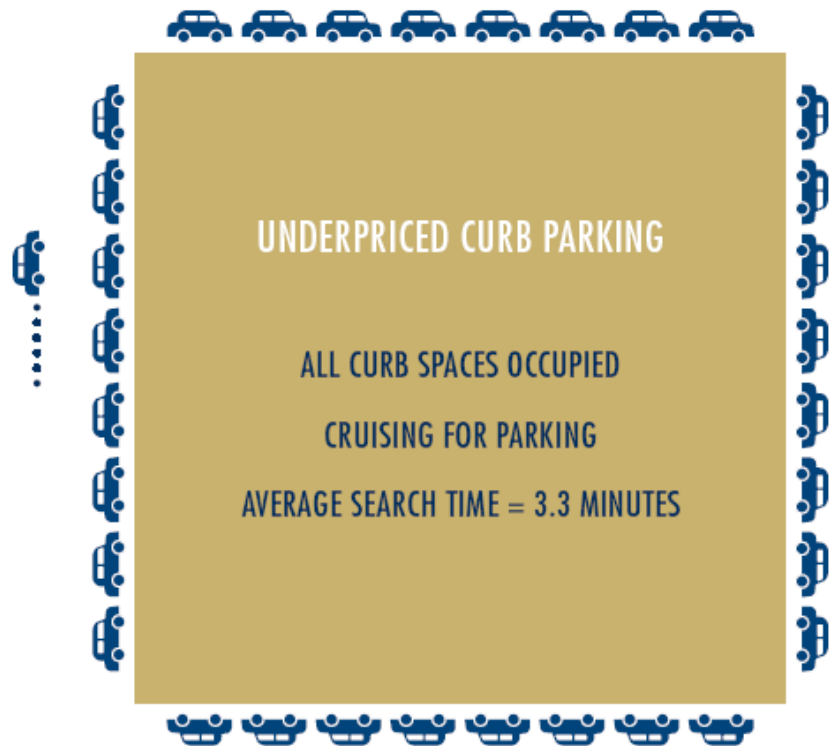


Block A - Central Business District Location - 1 Open Spot



Block B - Nearby Location - 2 Open Spots





SFpark:

Putting Theory Into Practice

Post-launch implementation summary and lessons learned



Average meter prices *declined* with SFpark

After the 10th rate change in April 2013, only 9 blocks had reached the \$6 per hour cap, and 179 had fallen to the \$0.25 per hour minimum.

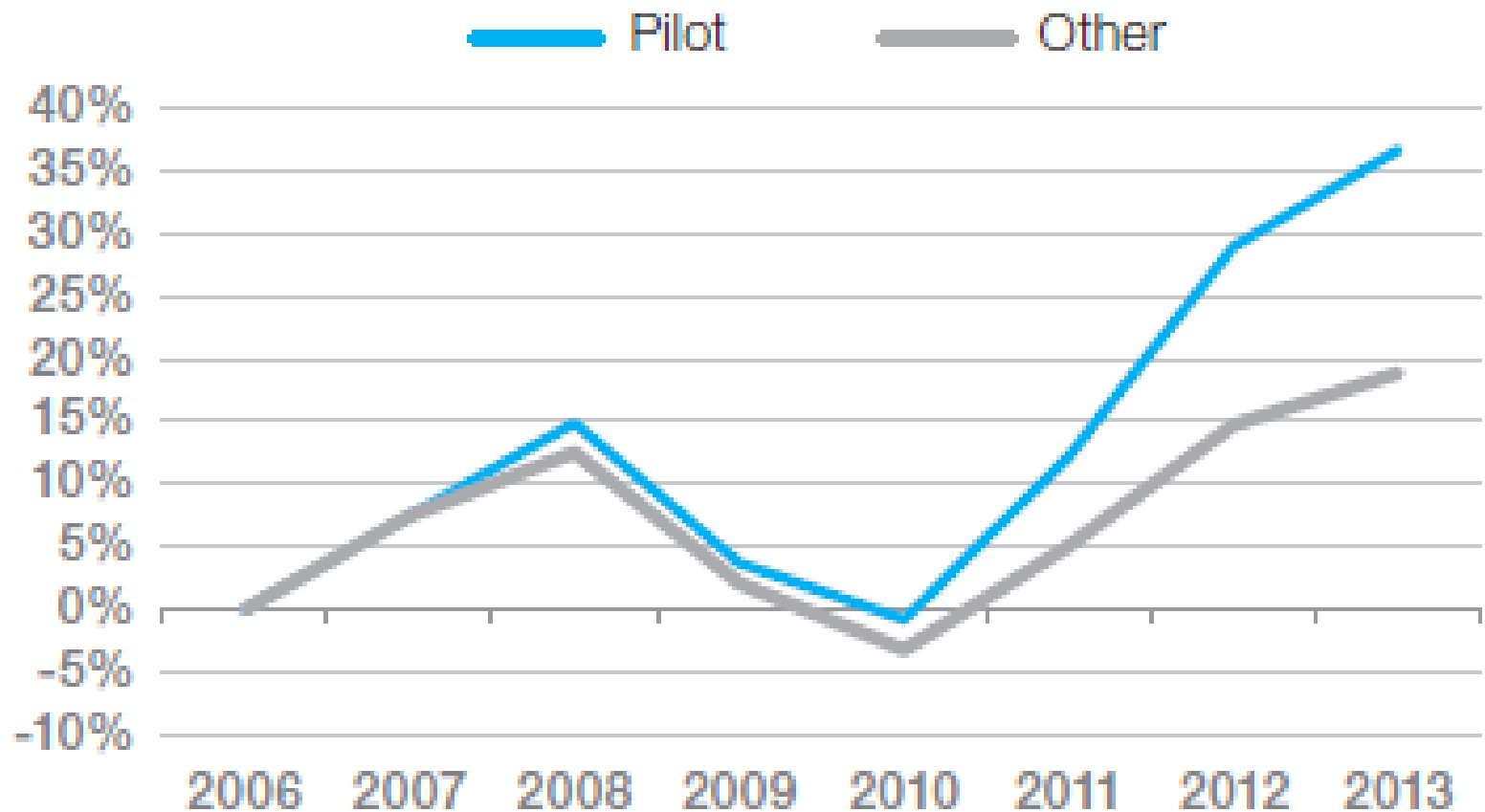
Many blocks had been overpriced in the morning.

Parking should be free if many spaces remain empty at the zero price.

Performance pricing leads to higher prices only if prices are so low that no spaces are open.

Change in sales tax revenue, FY2006–2013

Food product, general retail and miscellaneous;
chain stores excluded







PAY · BY · SPACE

PAY BY:
CREDIT CARD

CASH
EXACT BILLS REQUIRED \$1, \$5 ONLY

REMEMBER
NO IN AND OUT PRIVILEGES
NOT TRANSFERABLE
PAY STATION TICKETS ARE ONLY VALID
IN DESIGNATED PAY STATION AREAS
MUST DISPLAY PAY STATION PASS ON
DASHBOARD AT ALL TIMES
VIOLATORS ARE SUBJECT TO CITATION
21113A CVC

INSTRUCTIONS
1 2 3 4



MAINTENANCE HOTLINE
WEEKDAY: 301-204-PAKE (7275)
AFTER 5PM & WEEKENDS: 301-452-3066
PAY STATION UNIT #57-1
YOU ARE PARKED IN
Charles E. Young Dr. East
Pay Station Area
www.transportation.unle.edu



Stall: 05769

Press Number on Keypad to Select Options:

- 1) 2 Hours \$7.00
- 2) 1 Hr 30 Min \$5.00
- 3) 1 Hour \$3.00
- 4) 40 Minutes \$2.00
- 5) 20 Minutes \$1.00





























The right price

Should the price be higher?

Should the price be lower?

The Goldilocks principle of parking prices.

“I know it when I see it.”

Information wants to be free.

Parking wants to be paid for.

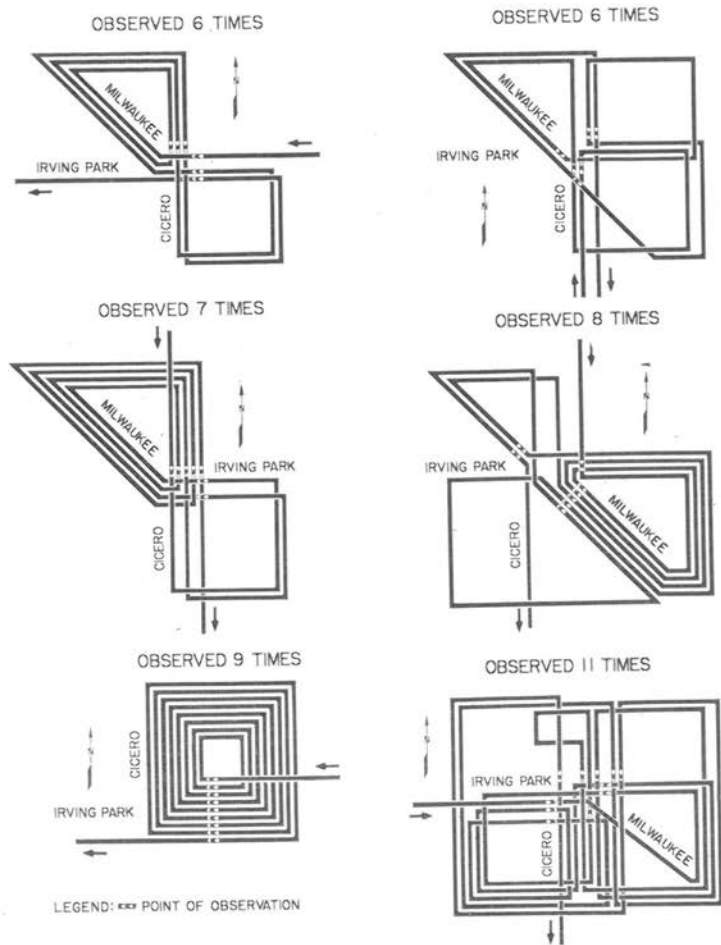
Cruising for Parking

TABLE 11-5
CRUISING FOR PARKING

Year	City	Share of traffic cruising (percent)	Average search time (minutes)
1927	Detroit	19%	
1927	Detroit	34%	
1934	Washington		8.0
1962	New Haven	17%	
1965	London		6.1
1966	London		3.5
1966	London		3.6
1977	Freiburg	74%	6.0
1984	Jerusalem		9.0
1985	Cambridge	30%	11.5
1993	Cape Town		12.2
1993	New York	8%	7.9
1993	New York		10.2
1993	New York		13.9
1997	San Francisco		6.5
2001	Sydney		6.5
2005	Los Angeles	68%	3.3
2007	New York	28%	
2007	New York	45%	
2008	New York		3.8
2011	Barcelona	18%	
Average		34%	7.5

ROUTES OF CERTAIN CRUISING VEHICLES IN THE VICINITY OF
CICERO, MILWAUKEE, AND IRVING PARK CONSTRUCTED FROM
OBSERVATIONS MADE ON THE SIX APPROACHES TO THE
INTERSECTION OF THESE STREETS

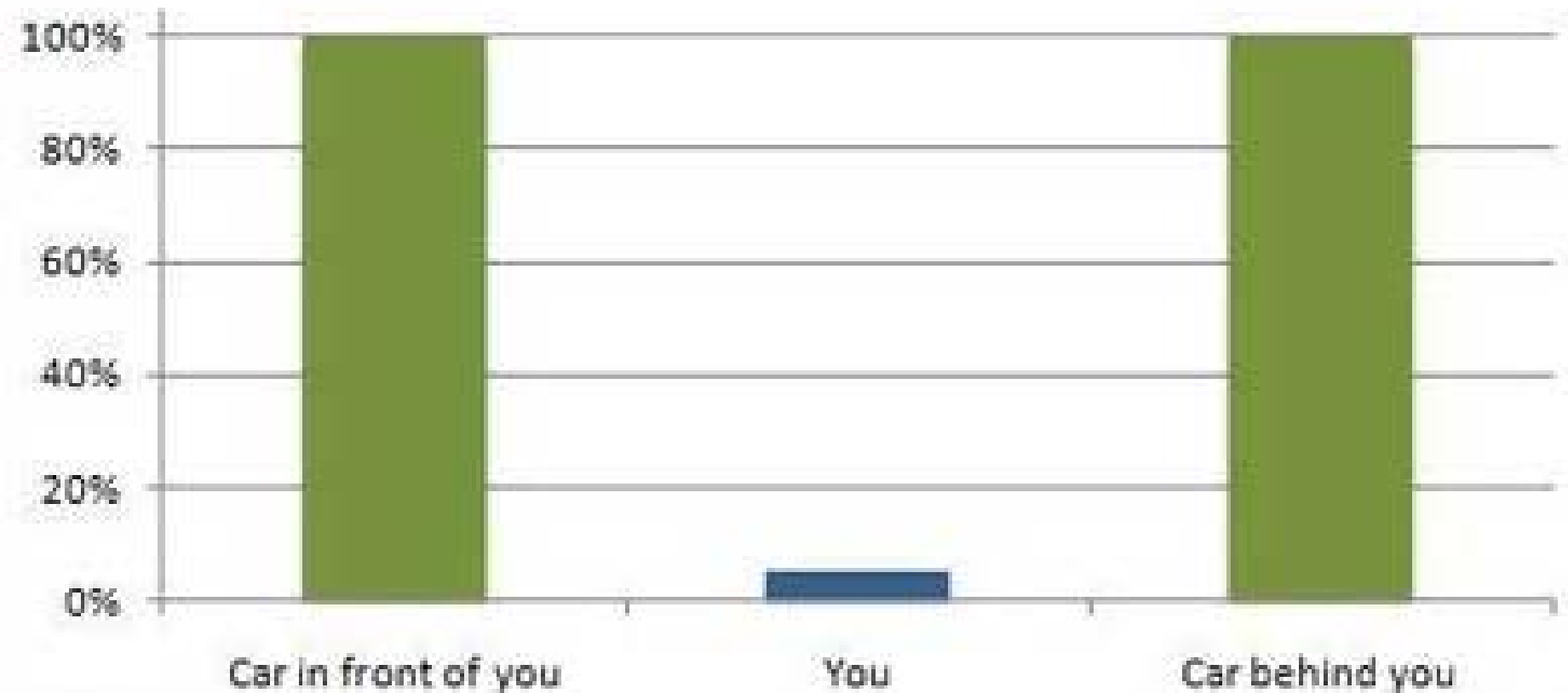
7:00 P.M. TO 9:30 P.M.-THURSDAY, MARCH 30, 1939



From the Report: "A Plan to Relieve Traffic Congestion in the Portage Park Retail Shopping Center." A Survey by City of Chicago, Chicago Motor Club, Chicago Surface Lines, April 1939

FIGURE 4—Observed Routes of Cruising Vehicles

Probability of finding parking space





Competing uses for the curb

Parking

Loading zones

Bus stops

No stopping

Bike lanes

Shared bike stations

Outdoor restaurants

What is the most productive use of the curb?



Productivity of the curb used for parking and ride-hailing
Santa Monica Boulevard, West Hollywood
Friday and Saturday nights, 7-11 pm

	<u>Ride-hailing</u>	<u>Parking</u>
Passengers per 20 feet of curb	12 per hour	4 per hour
Average time at curb	1 minute	38 minutes

Source: Ryland Lu

Double parking on Santa Monica Boulevard, West Hollywood Friday and Saturday nights, 7-11 pm

	<u>Ride-hailing</u>	<u>Private cars</u>
Share of all double-parked cars	83%	17%
Average time double-parked	0.7 minutes	2.5 minutes

Parking spaces occupied 58% of the curb length, No Stopping occupied 37%, and Loading occupied only 5%.

Ride-hailing vehicles double parked on Santa Monica Boulevard for 37 minutes per hour.

Forty-four percent of ride-hailing vehicles double parked to drop off or pick up passengers.

Double-parked vehicles delivered 41 percent of passengers served by ride-hailing.

Double parking by ride-hailing vehicles reduced the traffic flow on Santa Monica Boulevard by 34 percent.

Shifting curb space from parking to loading zones

To avoid double parking, cities can shift some curb space from parking to loading.

Cities lose parking revenue when converting curb space to loading zones.

If there is to be a tax on ride-hailing, it should respond to congestion in loading zones.

Cities can tax pick ups and drop offs in congested areas at congested times, like congestion pricing for roads. The tax would be zero when there is no congestion.

The tax revenue can offset the parking revenue loss caused by shifting metered curb spaces to loading zones.

2. Parking Benefit Districts







"Take away a few more parking spaces."



1978 Plan for Old Pasadena

“The area’s been going downhill for years.”

“It’s a bunch of dirty old buildings.”

“It’s filthy.”

“It’s Pasadena’s sick child.”

“The area is unsafe.”

Old Pasadena Now



Parking meters with revenue return

- City of Pasadena offered to return all parking meter revenue to Old Pasadena
- Merchants and property owners immediately agreed to install meters
- 690 meters operate until midnight, and on Sunday
- Meters yield \$1.2 million a year for Old Pasadena's 15 blocks, about \$80,000 per block.

Old Pasadena. We've come a long way. This might seem silly to some people, but if not for our parking meters, its hard to imagine that we'd have the kind of success we're enjoying. They've made a huge difference. At first it was a struggle to get people to agree with the meters. But when we figured out that the money would stay here, that the money would be used to improve the amenities, it was an easy sell.”

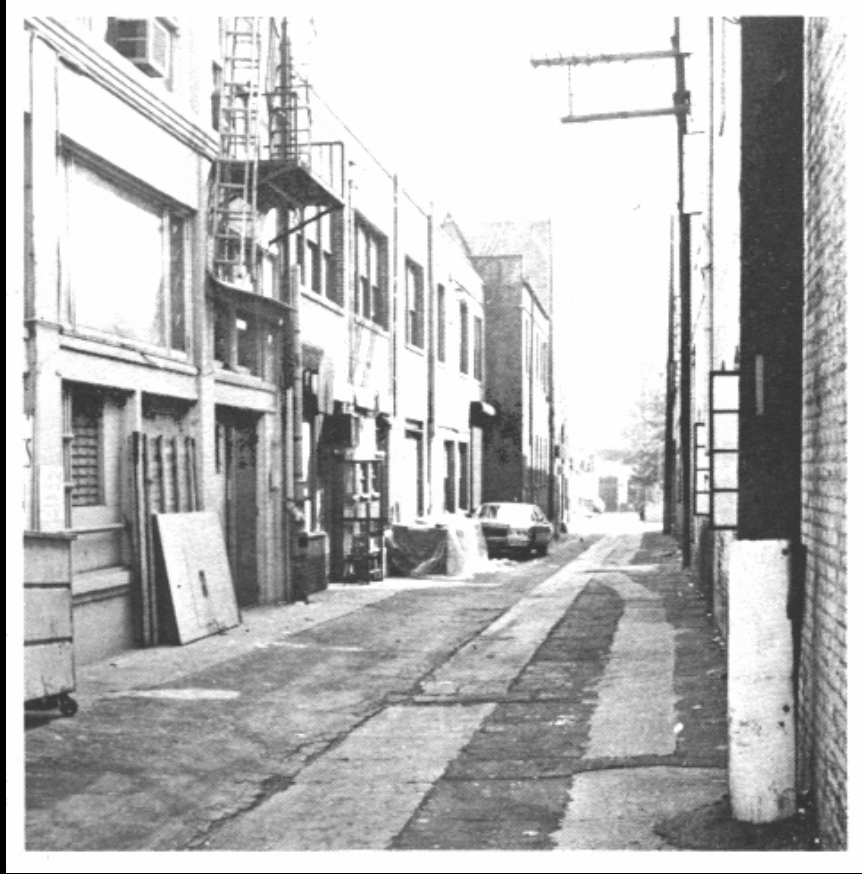
Marilyn Buchanan, Chair,
Old Pasadena Parking Meter Zone Advisory Board

Turning Small Change into Big Changes











FOOTWEAR

GAP

ARMANI EXCHANGE



NEWS

For Immediate Release

Downtown Merchants Support the Parking Meters!

Downtown Ventura, May 5, 2011 - The overwhelming consensus downtown is that the meters are working! Downtown business owners were interviewed and business surveys were conducted over the past two weeks along Main Street in downtown Ventura. The downtown merchants gave the managed parking system a thumbs up with 83% surveyed in support of the meters, 13% neutral, and 4% not in support the meters.

In addition, the revenue generated from the meters is being reinvested into the downtown. The funds help pay for a dedicated police officer and nine police cadets. This has resulted in an overall decrease in crime by 40% and a 15% decrease in calls for service. Funds are also used for new improvements like additional lighting for parking lots, new planters and plant materials, and a cross-the-street banner planned for installation this summer.

Free Wi-Fi is yet another benefit made possible by the meters. Residents and visitors can stay "connected" through the outdoor network provided by the Downtown Parking Management program.

Parking Benefit Districts

Transportation management tool.

Reduces traffic congestion, air pollution, and fuel consumption.

Economic development tool.

Makes curb parking available, increases sales and property tax revenue, and employs people.

Effects of removing parking requirements and building job-adjacent housing on former parking lots

Create jobs

Increase the housing supply

Reduce time spent commuting

Reduce spending on cars and fuel

Reduce traffic congestion and air pollution

Increase the demand for smart parking technology

Slow climate change

Pan-Ideological Support for Market-Priced Curb Parking



**BEAR
LEFT**



**KEEP
RIGHT**

Political support for market-priced curb parking, parking benefit districts, and no off-street parking requirements

Liberals will see that it increases public spending.

Conservatives will see that it relies on markets and reduces government regulation.

Environmentalists will see that it reduces energy consumption, air pollution, and carbon emissions.

Businesses will see that it unburdens enterprise.

New Urbanists will see that it improves urban design and enables people to live at high density without being overrun by cars.

Libertarians will see that it increases the opportunities for individual choice.

Property-rights advocates will see that it reduces regulations on land use.

Developers will see that it reduces building costs.

Residents will see that it pays for neighborhood public improvements.

Affordable housing advocates will see that it reduces the cost of building new housing.

Neighborhood activists will see that it devolves public decisions to the local level.

Local elected officials will see that it reduces traffic congestion, encourages infill redevelopment, and pays for local public services without raising taxes.





All of us, if we are reasonably comfortable, healthy and safe, owe immense debts to the past.

There is no way, of course, to repay the past. We can only repay those debts by making gifts to the future.

Jane Jacobs

We--you and I, and our government--
must avoid the impulse to live only for
today, plundering, for our own ease and
convenience, the precious resources of
tomorrow.

Dwight Eisenhower

As our case is new, so must we think anew,
and act anew.

Abraham Lincoln

Smart Parking

Reform depends
on leadership
from all of you.



The High Cost of Free Parking

DONALD SHOUP