

Parking research and policy overview

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The High Cost of Free Parking

DONALD SHOUP

A Planners Press Book



- \$25,000 per space or more for a parking garage¹
- Adds \$1,700 per year for an average apartment²
- Adds 12-13% for a home or condo³
- Lost tax revenues⁴

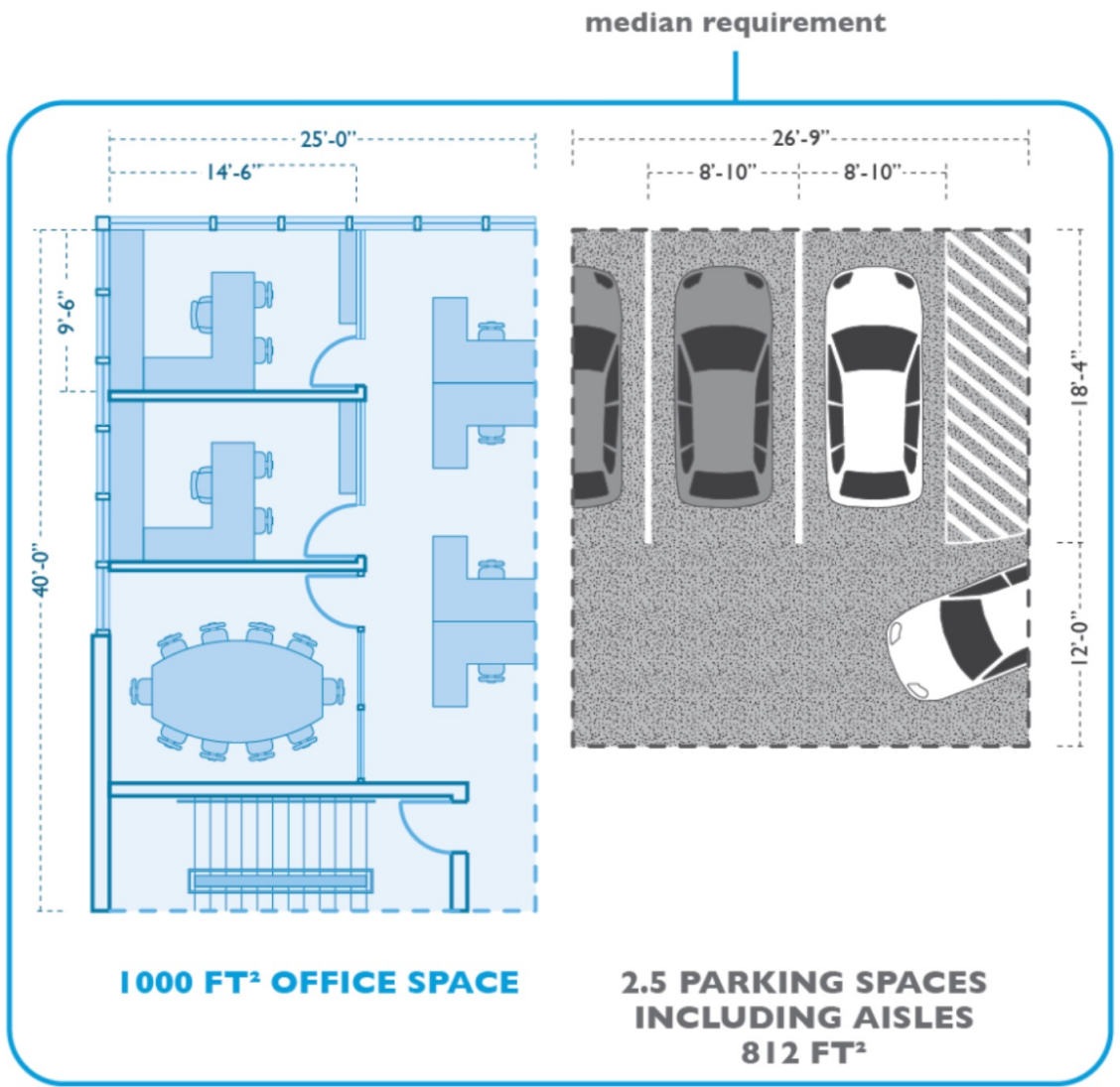
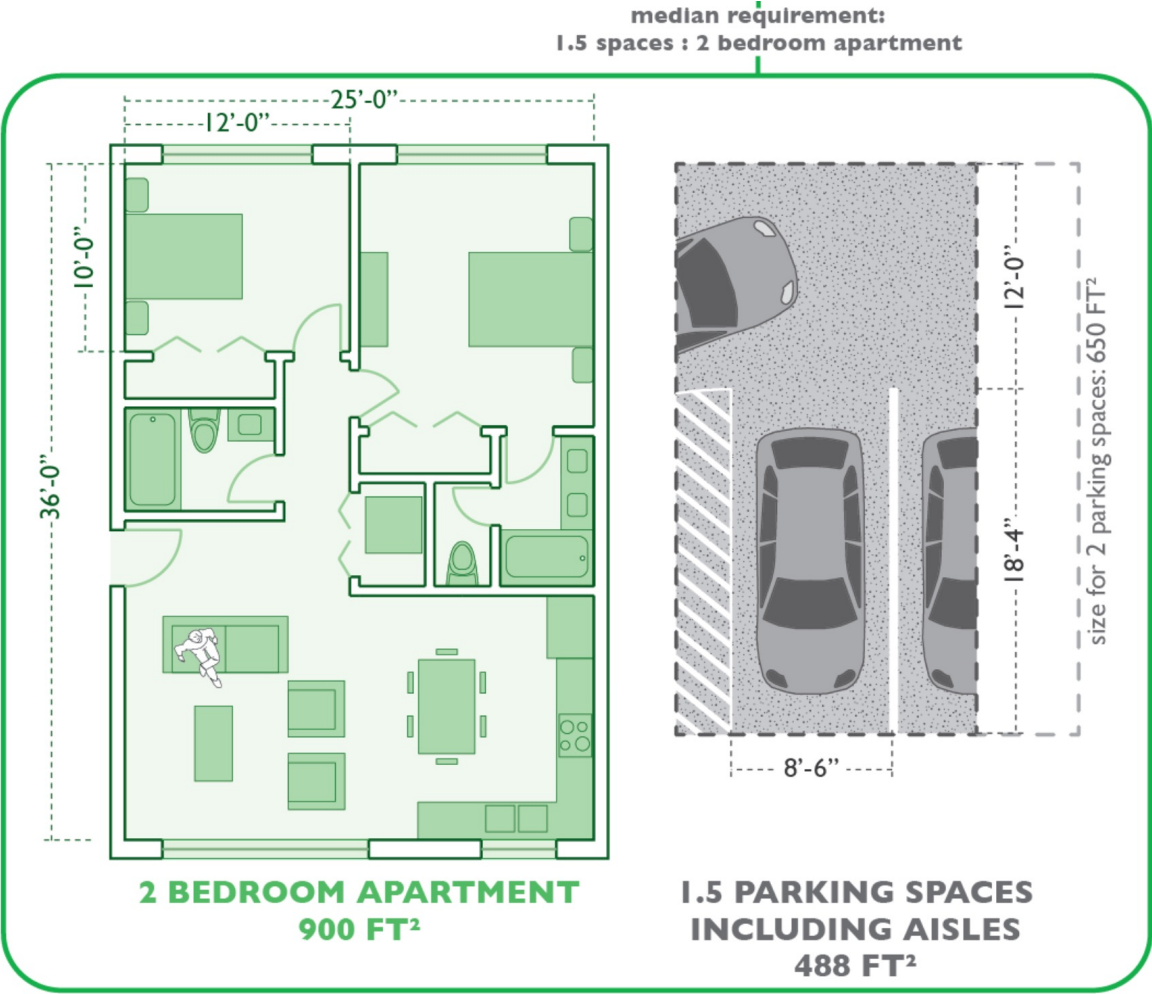
1. Spivak (2018)

2. Gabbe & Pierce (2017)

3. Jia & Wachs (1999)

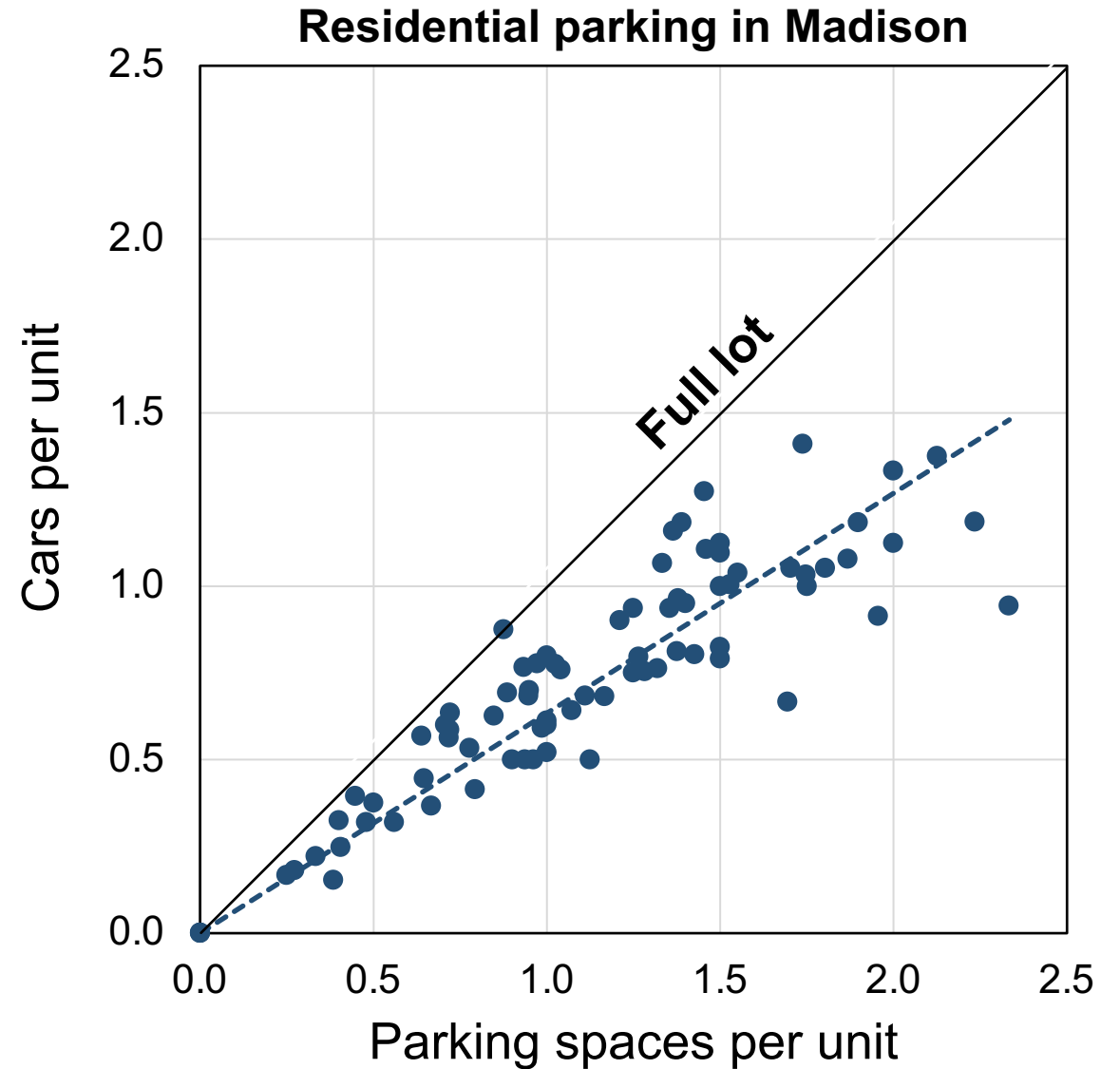
4. Blanc et al. (2014)

Space for parking



Parking supply vs. demand

- Residential parking studies:
 - 26% empty across Boston¹
 - 31% empty across Seattle²
 - 40% empty across DC³
 - 44% empty across Chicago⁴
 - 33% empty across Madison⁵ →
- Downtown parking studies⁶:
 - 65% more than needed, on average
 - 45% more than needed in places with perceived shortages

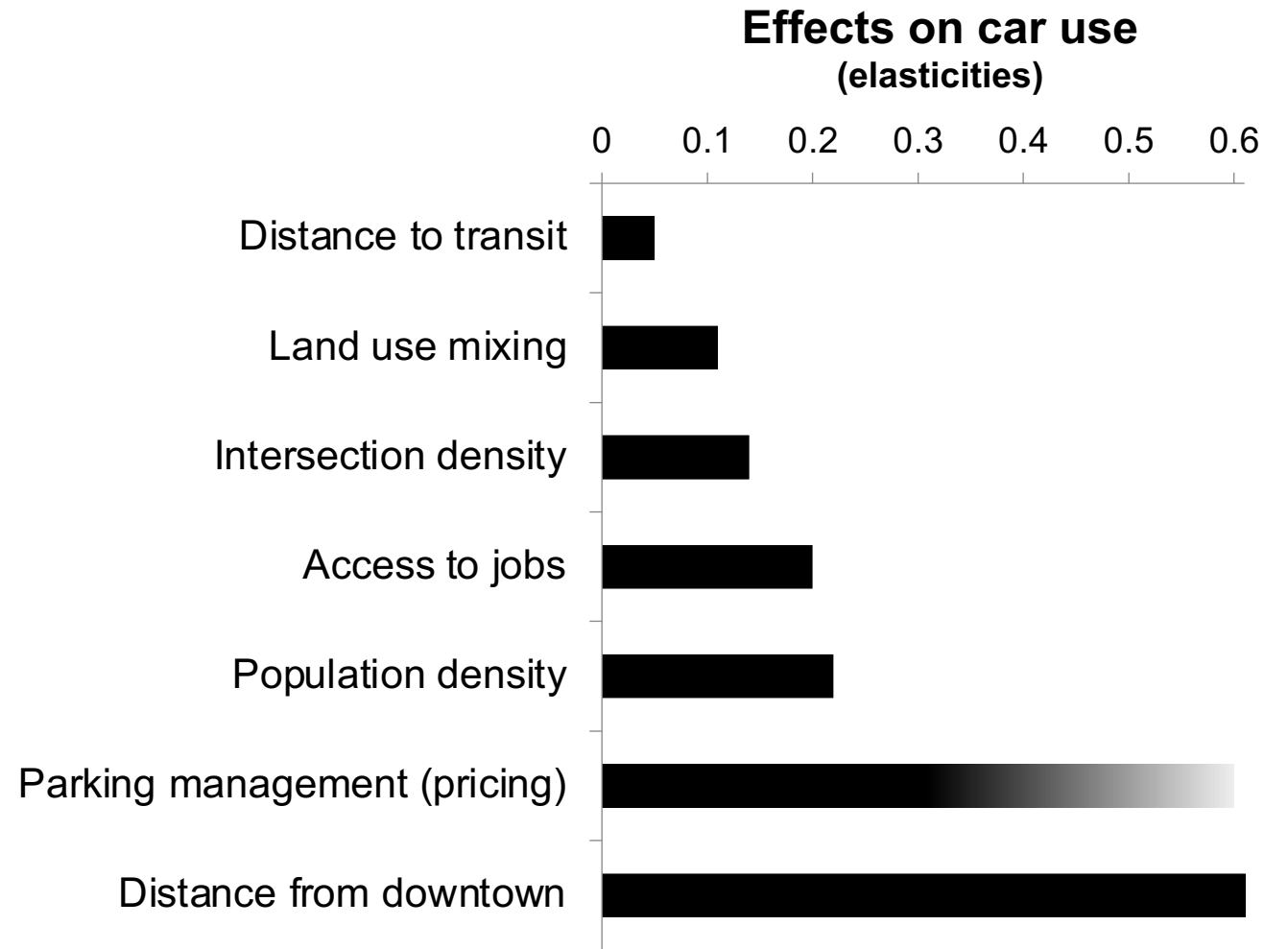


1. MAPC (2017)
2. Rowe et al. (2013)
3. Rogers et al. (2016)

4. CNT (2016)
5. McCahill (2017)
6. Weinberger & Karlin-Resnick (2015)

Parking and travel behavior

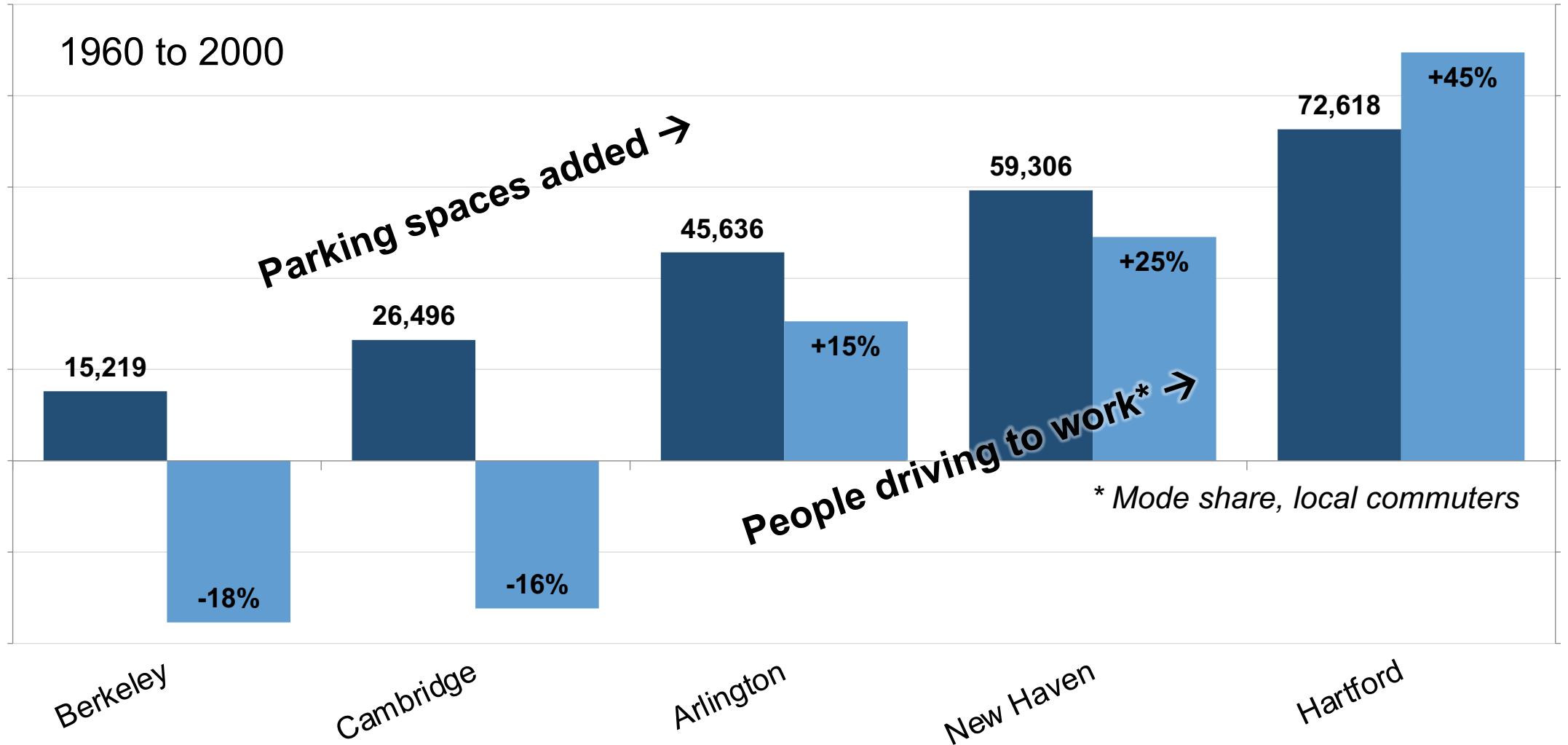
- Free parking at work increases driving by around 35-45% in urban areas^{1,2}
- Free parking at home increases driving and lowers transit use³⁻⁸
- Charging a small amount can have a large impact, especially hourly or daily⁹



Sources: Stevens (2017); Kuzmyak et al. (2003)

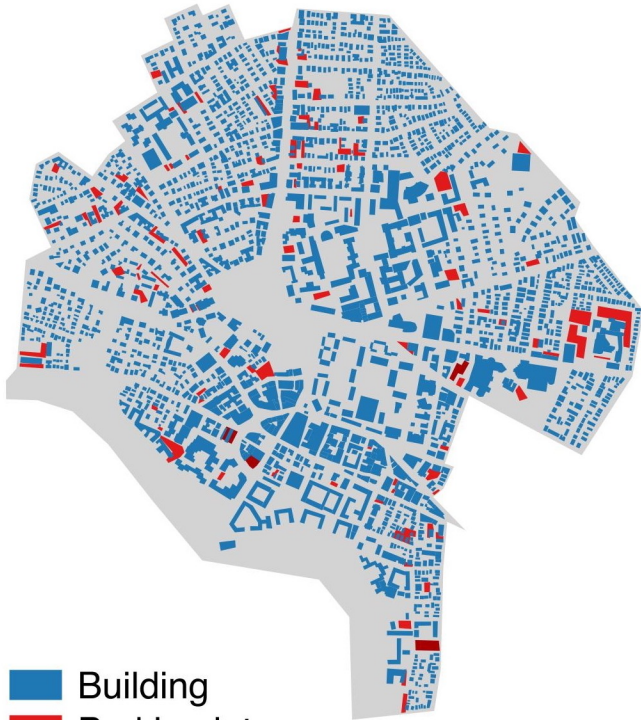
1. Hess (2001) 4. Manville et al. (2013) 7. Auchincloss et al. (2015)
2. Shoup & Breinholt (1997) 5. Weinberger et al. (2008) 8. Manville & Pinski (2020)
3. Guo (2013) 6. Weinberger (2012) 9. Khordagui (2019)

Parking and driving in cities



Cambridge, MA

0.1 spaces per
1,000 sq. ft. building space



- Building
- Parking lot
- Parking structure
- Downtown study area

New Haven, CT

0.6 spaces per
1,000 sq. ft. building space



0 1 mile

Hartford, CT

0.9 spaces per
1,000 sq. ft. building space



Parking policy levers in Madison

- Parking Utility
 - Public lots and garages
 - On-street meters
 - On-street regulations
- Private parking
 - Zoning code →
 - Proposed TDM
 - TIF

Madison zoning (sample)

Land use	Minimum	Maximum
Single family housing	1	4
Multifamily housing	1 per unit	2.5 per unit
Office	2.5 per 1,000 sq. ft. (1 per 400 sq. ft.)	4 per 1,000 sq. ft. (1 per 250 sq. ft.)
Retail	2.5 per 1,000 sq. ft. (1 per 400 sq. ft.)	5 per 1,000 sq. ft. (1 per 200 sq. ft.)
Restaurant	15% of capacity	40% of capacity

Many exemptions, including central area.

Proposed TDM (transportation demand management)

	Small	Low-Medium	Medium	High-Medium	Large
RESIDENTIAL USES	10-25 DU	26-50 DU	51-100 DU	101-150 DU	> 150 DU
EMPLOYMENT USES	10,000 - 25,000 sq.ft.	25,001 -50,000 sq.ft.	50,001 -100,000 sq.ft.	100,001 -150,000 sq.ft.	> 150,000 sq.ft.
Parking stalls per Dwelling Unit (DU) or 500 sq.ft. of floor area	Mitigation points required				
< 0.5	5	8	10	12	15
0.5 - 0.99	10	12	15	18	20
1.0 - 1.49	15	18	20	22	25
1.5 - 1.99	20	22	25	28	30
2.0 - 2.5	25	28	30	32	35
2.5 +	30	32	35	38	40

More parking = more points required.



Basic measures
B-1 to B-3



Active transportation
AT-1 to AT-8



High-occupancy vehicles
HOV-1 to HOV-7



Information & communication
IC-1 to IC-3



Parking management
P-1 to P-4



Land use + location
LU-1 to LU-6

Parking management points

Category	Measure	Option	Points	Considerations & Description
P-1	Priced parking	A: Cash out for employees	5	Offer all full-time employees the choice to forgo free parking for an in-lieu cash payment of at least \$50 per month.
		B: Direct charge to employees	5	Charge employees at least \$50 per month to park, with an option to forgo that fee by not
		C: Unbundled for residents	5	Lease or sell parking separately to residents from residential space. Fees/leases for parking must be optional.
		D: Unbundled for employment or commercial tenants	3	Lease or sell parking to employers or commercial tenants from space for those land uses. Fees/leases for parking must be optional.
		E: Hourly or daily parking charges	5	Directly charge building users who have not purchased ongoing parking rights at least \$1/hour to park. Points earned for this measure can be in addition to other points in P-1.
P-2	Shared parking agreement		2	Keep parking capacity below the applicable parking minimum by sharing parking with a nearby land use, or allow users at another land use to park on-site such that that facility has parking capacity below applicable parking
P-3	Off-site parking		1	Keep parking capacity below the applicable parking minimum by contracting with an off-site parking supplier, including but not limited to city Parking Utility ramps.
P-4	Carpool preferential/ free parking		2	Provide free or preferentially sited parking for carpool vehicles for employees, shoppers, students, or others as applicable.

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