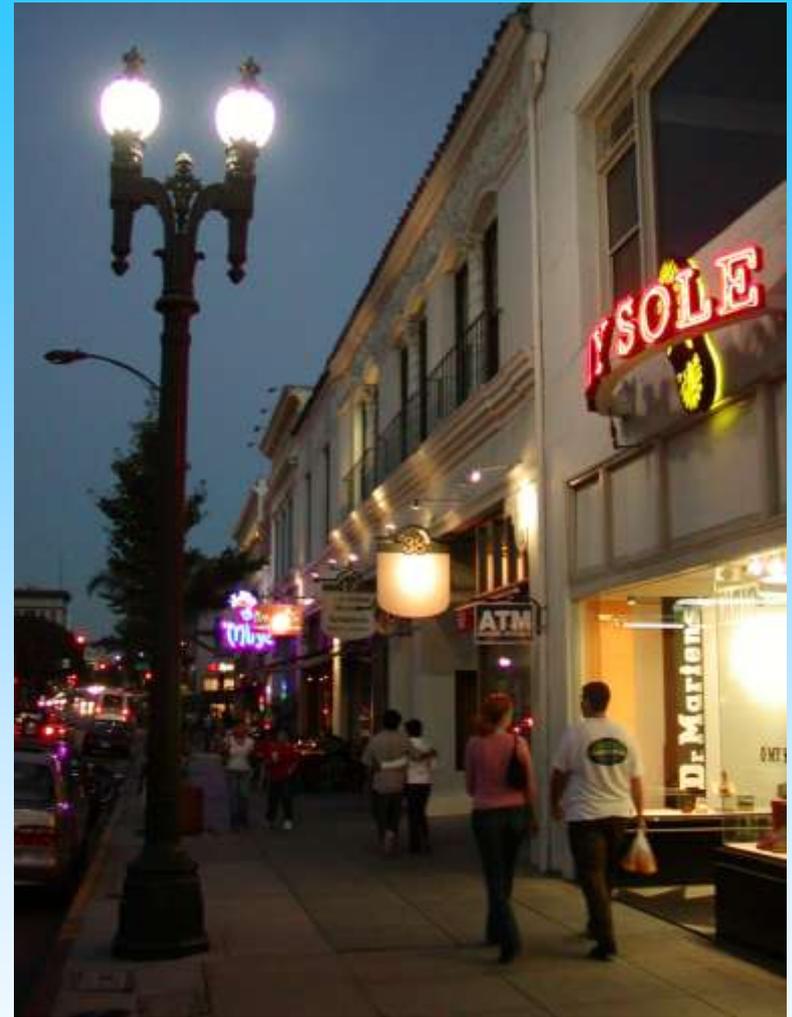


City of Hayward
Mission Boulevard Corridor
Specific Plan

***Parking & Traffic Solutions:
A Toolkit of Strategies***

April 2010

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Nelson\Nygaard Consulting



Nelson | Nygaard
Transportation Planning
for Livable Communities

Agenda

1. Goals
2. Background
3. Twelve potential strategies
 - ❖ Case studies

Step 1: Set Goals

My Firm's Role

- Recommend parking policies
- Recommend traffic reduction strategies

Potential Goals

For example:

- Protect existing neighborhoods
- Allow desired new development while minimizing traffic, parking & pollution impacts

Step 1: Set Goals

- Transportation is a means for achieving larger community goals, not an end in itself
- Technical analysis can inform decisions, but cannot substitute for setting clear goals & a vision



Step 1: Set Goals

Street rights-of-way are public spaces of limited size

- Trade-offs are inevitable
- A clear vision can set priorities
- What is the purpose of each street, and how does it fit into your overall network?





Measuring progress

Performance Measures

- Once you have set goals, how do you measure progress towards them?

Sample performance measures

- Automobile Level of Service (LOS) – a measure of average speed
- Safety: # of collisions
- Bicycle and/or pedestrian level of service (LOS)
- Transit: transit speeds, frequency & reliability
- Economics: retail sales, vacancy rates, property values

A Brief History of an Effort to Relieve Traffic Congestion

Background

When did cities first adopt minimum parking requirements, and why?



Background

What is the goal
of your
community's
parking
requirements?



Minimum Parking Requirements

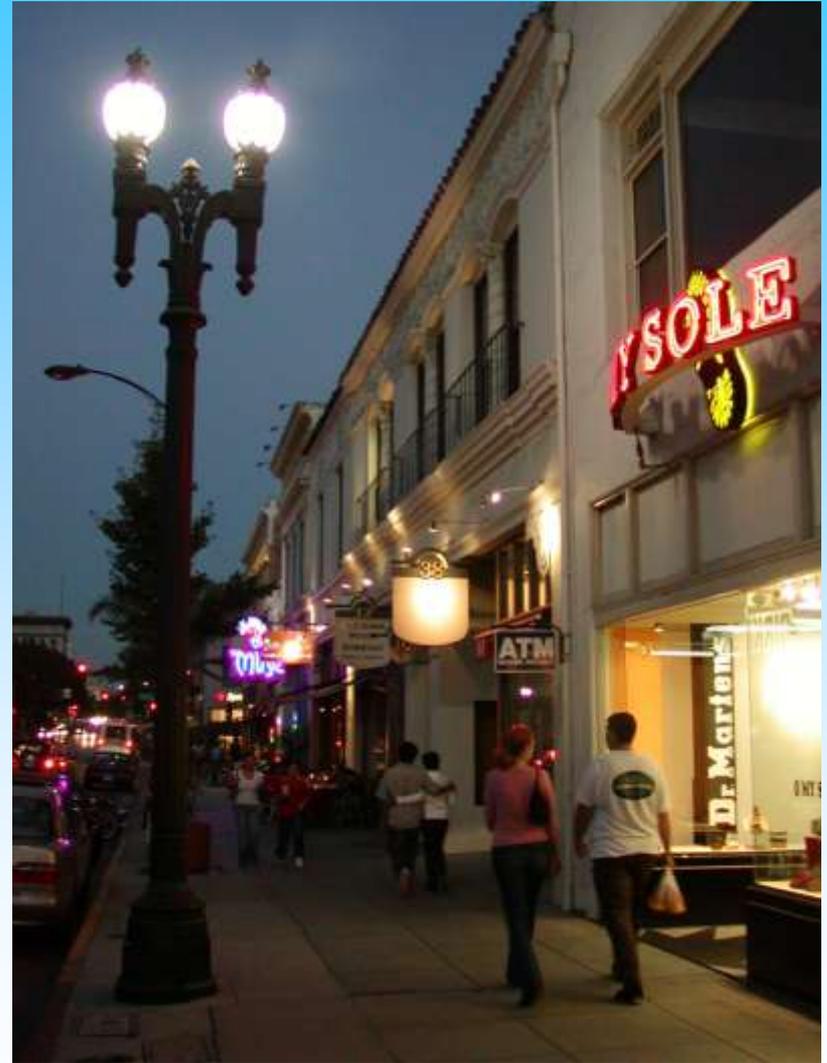
Purpose

Palo Alto: "to alleviate traffic congestion"?

San Diego: "to reduce traffic congestion and improve air quality"

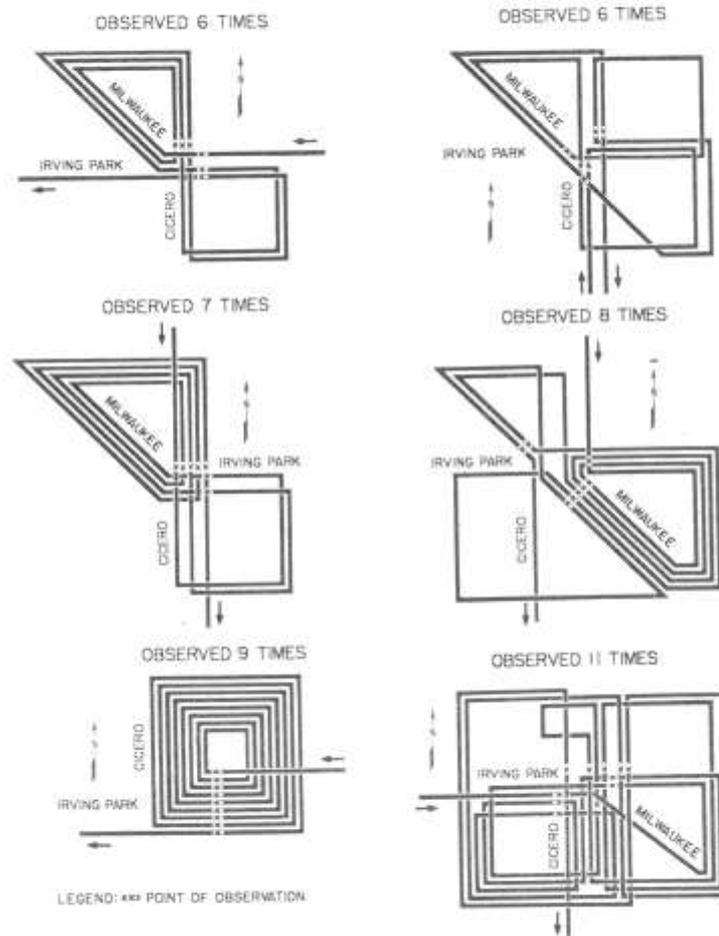
Hayward: "to relieve congestion on streets"

...to prevent spill-over parking problems



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 PM. TO 9:30 PM.-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

Minimum Parking Requirements - Source



Example: Office Parks

Peak Occupancy Rates, in spaces per 1000 sf of building area:

Lowest: 0.94 spaces

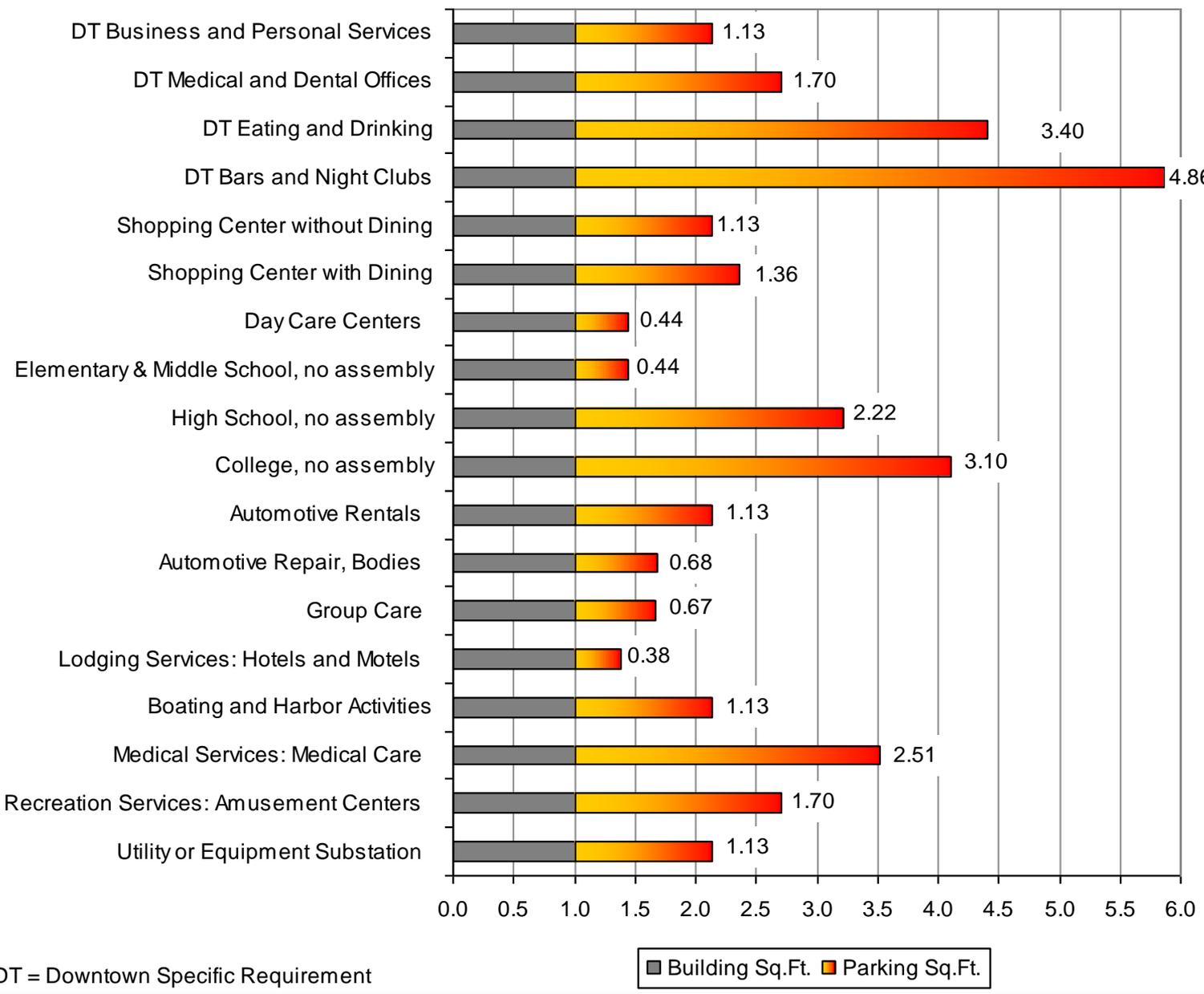
Average: 2.52 spaces

Highest: 4.25 spaces

**Typical requirement:
4.0 spaces/1000 sf**

Typical office: 4 parking spaces per 1000 sq.ft.
1.3 sq. ft. of asphalt per sq. ft. of building area





Ventura's downtown minimum parking requirements...

...often required more parking than building...

...and this was especially true for uses that help create vibrancy and life downtown (restaurants, night clubs, etc)...

DT = Downtown Specific Requirement











Kmart

Unintended Consequences of Parking Requirements

1. Minimum requirements set to provide excess spaces even when parking is free, even at isolated locations with no transit.
2. Parking is then provided for free at most destinations and its costs hidden.
3. Bundling the cost of parking into higher prices for everything else skews travel choices toward driving.





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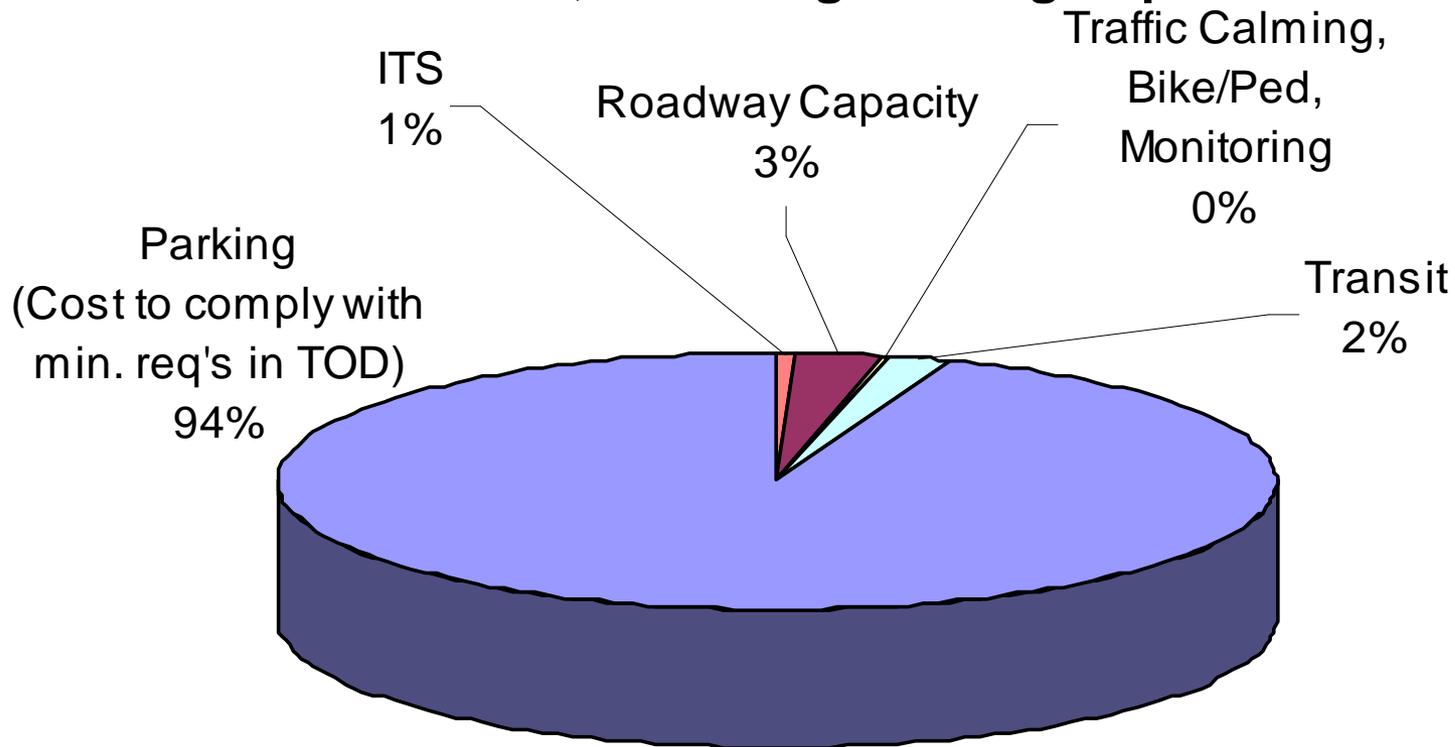
\$20,000

\$20,000

Estimated Transportation-Related Development Costs

Example: Pasadena, CA, Transit-Oriented Development Zones

New Fee Schedule, Including Parking Expenses



How do parking prices affect vehicle trips?

Areas with little public transportation

Location	Scope of Study	Financial Incentive Per Month (in 1995 \$)	Decrease in Parking Demand
Century City District, West Los Angeles	3500 employees surveyed at 100+ firms	\$81	15%
Cornell University, Ithaca NY	9000 faculty & staff	\$34	26%
San Fernando Valley, Los Angeles	1 large employer (850 employees)	\$37	30%
Bellevue, WA	1 medium-size firm (430 employees)	\$54	39%
Costa Mesa, CA	State Farm Insurance employees	\$37	22%
<i>Average</i>		<i>\$49</i>	<i>26%</i>

A Toolkit of Strategies

Traffic Reduction Case Studies – Lessons Learned

Place	Parking Cash-Out Required	Congestion Pricing	Unbundling of Parking Costs Required	Universal Transit Pass Program	Parking Tax	Low Minimum Parking Requirements	Eliminated Minimum Parking Requirements	Set Maximum Parking Requirements	Priced Parking	Shared Parking/Park Once	Residential Parking Districts	Carpool/Ride Matching Services	Car Sharing	Bicycle Parking Requirements	Rail Transit	Bus Rapid Transit
Arlington County, VA				✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	
Bellevue, WA (Downtown)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Boulder, CO (Downtown)			✓		✓	✓		✓	✓	✓	✓	✓	✓	✓		
Cambridge, MA					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Lloyd District, Portland, OR			✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
London, Great Britain	✓					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Portland, OR (Downtown)						✓	✓	✓	✓	✓		✓	✓	✓		
San Francisco, CA (Downtown)		✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		
Stockholm, Sweden	✓			✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		
Vancouver, B.C.			✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Twelve strategies – a toolkit of options

1. **Charge the Right Price for Curb Parking**
2. **Return Meter Revenue to the Neighborhoods**
3. **Invest Parking Revenues in Demand Management Programs**
4. **Universal Transit Passes**
5. **“Unbundle” Parking Costs**
6. **Parking Cash-Out**
7. **Strengthen Transportation Demand Management Requirements**
8. **Remove Minimum Parking Requirements**
9. **Set Maximum Parking Requirements**
10. Improve Transit
11. Improve Bicycle and Pedestrian Facilities and Programs
12. Congestion Pricing

Twelve Strategies

1. Charge the right price for curb parking.
2. Return the resulting revenue to the neighborhoods that generate it.



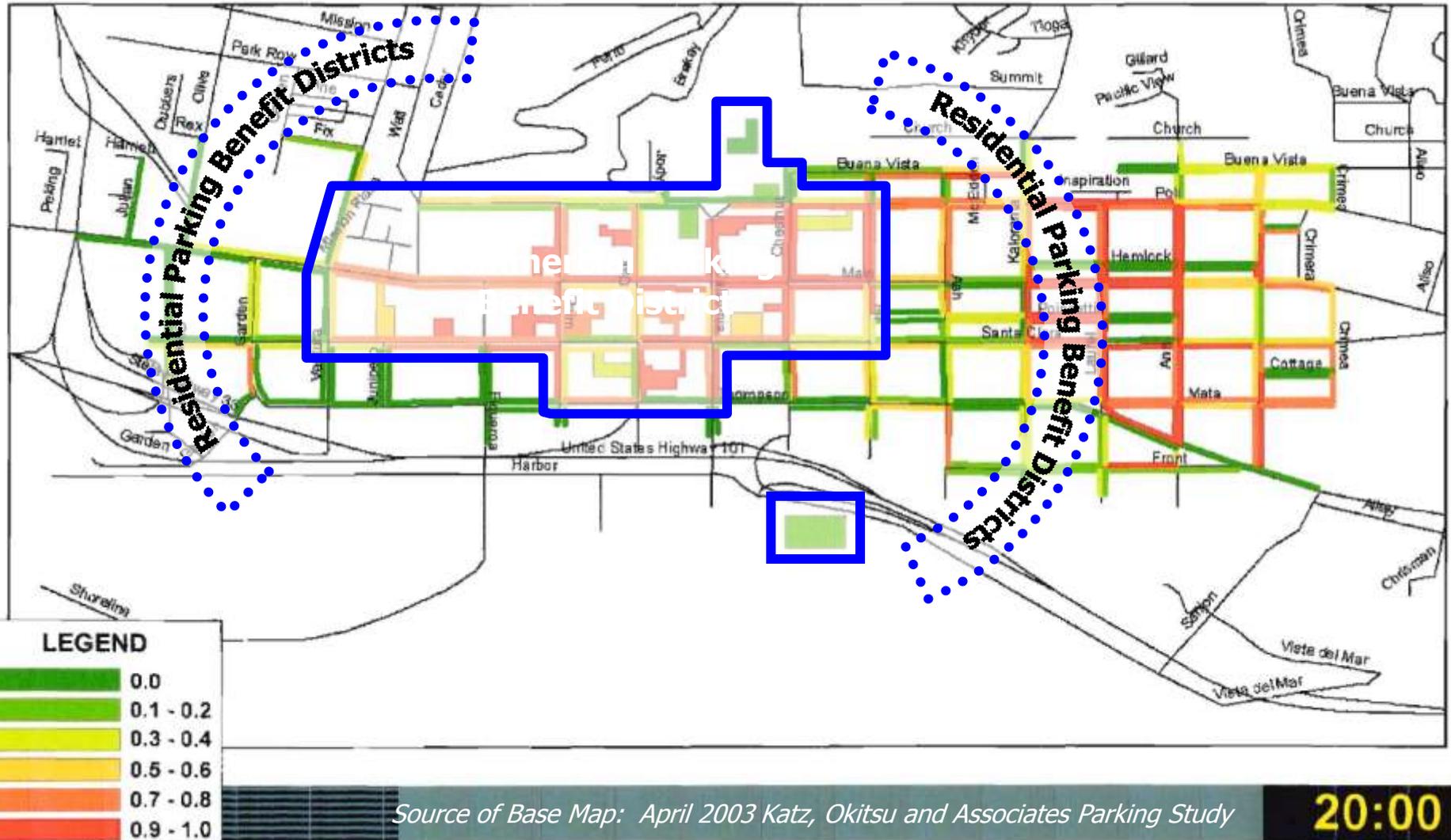




Hours of Operation
Sunday - Thursday
11 AM to 8 PM
Friday - Saturday
11 AM to 12 midnight
Except Holidays



Ventura Parking Benefit District Boundaries



What is the "Right" Price?

MONTREAL
Multispace meters, Handheld alerts
Each meter governs 10 to 15 spaces. After parking, drivers type in space number and pay with credit card or cash. Meters send real-time, block-by-block information to enforcement officers' handheld devices.

FORT LAUDERDALE, FLA.
In-car meters
Drivers can load up to \$100 onto a prepaid meter that dangles from the rearview mirror, above; the meter counts down remaining parking minutes.

CORAL GABLES, FLA.
Pay with cellphone
Drivers register their cellphone, credit card and license plate numbers online. After they park, they dial a number and enter a lot and space number to begin their parking session.

PACIFIC GROVE, CALIF.
Smart meters
Sensors embedded in the concrete under a parking space can tell when a car pulls out, resetting the meter to zero.

SACRAMENTO, CALIF.
Infrared license plate scanners
Enforcement vehicles traveling as fast as 30 mph use cameras to scan license plates. Using a global positioning system, the system lets officers check whether a car has outlasted its time on the meter. The system also can match license plates against databases of unpaid parking tickets and stolen vehicles.

Handheld Device
Cars parked legally are displayed as green squares, while those that have exceeded their time limit turn red.

Sources: InovaPark; Cole Parking Systems USA; T2 Systems; Lexis Systems; Mint Technology; AutoVu Technologies
Rich Franzen/The Wall Street Journal

Performance-based Pricing

- Charge the *lowest* price that will leave one or two vacant spaces on each block
- Eliminate the traffic congestion caused by drivers cruising for parking

3 Steps to Pricing Parking



1. Establish Optimal Occupancy Rate of 85%
 - 1 in 8 spaces, or about one per block, will always be available
2. Grant Staff Authority to Adjust Hourly Rates
 - To reach this goal
3. Plan Regular Occupancy Checks and Adjust Rates
 - Quarterly Basis

Example: Redwood City, CA

Tools: Parking Benefit Districts

Devote meter & permit revenue to district where funds raised

Example: **Old Pasadena**

- Meters installed in 1993: \$1/hour
- Garage fees
- Revenue: \$5.4 million annually
- Tiny in-lieu of parking fees

Funds garages, street furniture, trees, lighting, marketing, mounted police, daily street sweeping & steam cleaning

Focus on *availability*, not *price*



Old Pasadena, 1992-99:
***Sales Tax Revenues
Quadruple***

Residential Parking Benefit Districts

Implement in areas next to commercial zones, as needed

One Version:

Residents park free or cheaply

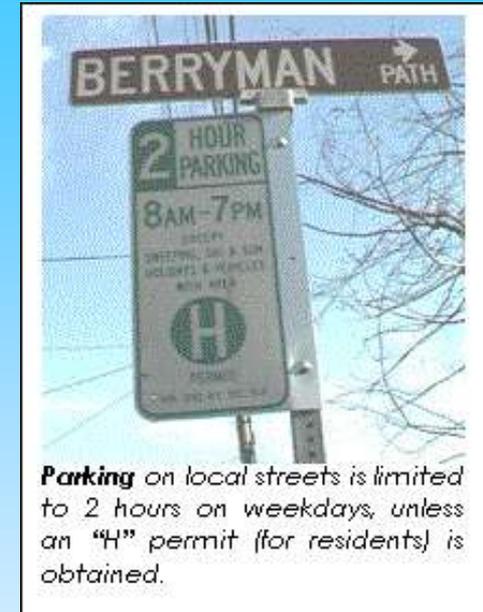
- Limit permits issued to available curb space

Sell excess space to nonresidents

- *Payment method:* In-vehicle meters or pay stations
- Residents decide how to spend revenue

Examples:

- Santa Cruz, CA
- West Hollywood, CA
- Austin, TX
- Boulder, CO



Parking on local streets is limited to 2 hours on weekdays, unless an “H” permit (for residents) is obtained.



3. Invest a portion of parking revenues in Transportation Demand Management

Tool: Transportation Improvement District

Example: Boulder (CO) Downtown Management Commission

- District analyzes most cost-effective mix of new parking or transportation alternatives
- Cheaper to provide free transit to all downtown employees than provide them parking
- Provides buying power/negotiating strength for small businesses



“In the 1970s, downtown was dying.”

Boulder's Transportation Improvement District

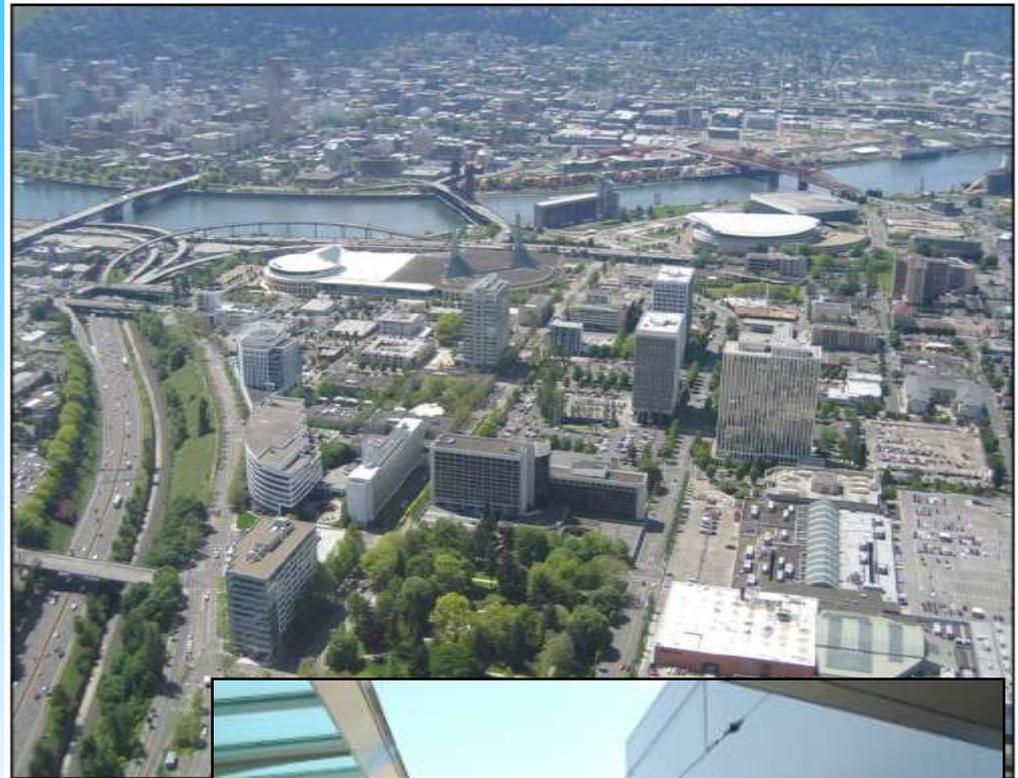
- No nonresidential parking requirements in CAGID area
- Public garages – 84% funded by parking fees, 16% by taxes
- Parking benefit district: \$1 million per year in meter revenue kept
- Employee benefits: free universal transit pass (Eco-Pass); Guaranteed Ride Home; ride-matching services; bicycle parking, etc.
- \$325,000/year TDM budget
- Eco-Pass: reduces commuter parking demand by 850 spaces



Tool: Transportation Improvement District

Example: Portland (OR) Lloyd District Transportation Management Association

- Invests over \$1 million annually into commute trip reduction programs
- Meter revenues fund 1/3 of TMA's budget
- Programs include free transit passes, carpool matching & carsharing
- Since 1997, district-wide drive alone rate has fallen 29%



4. Provide Universal Transit Passes

Universal Transit Passes: Employer-Based



Boulder, CO "Eco-Pass"

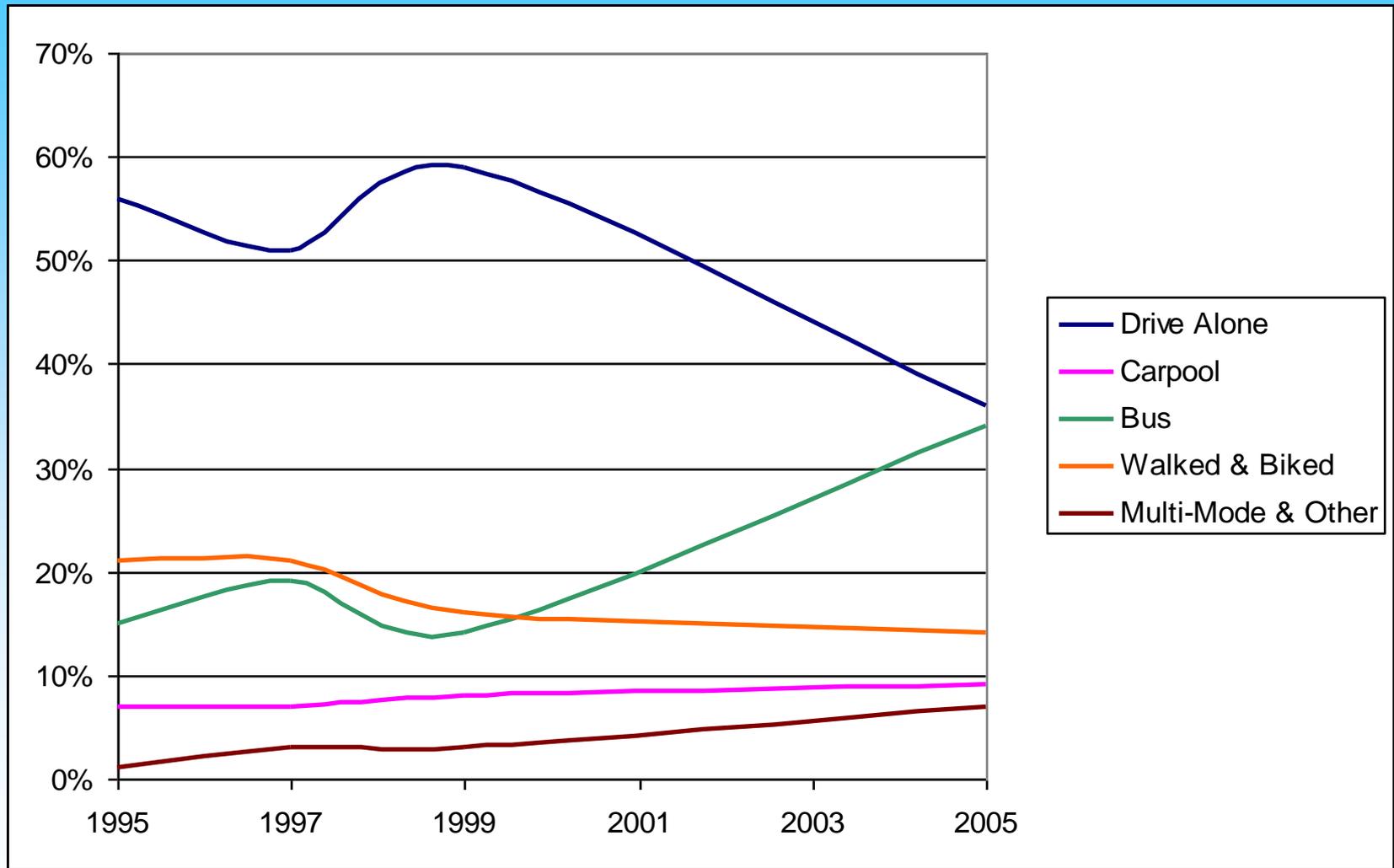
\$83 per year per worker

Deep discount for group enrollment
– only 6% of normal cost (\$1,485)

Program includes over 1,200
downtown businesses

**Results: Drive alone
rates fell from 56% to
36%**

Downtown Boulder, Colorado



AC Transit's Easy Pass program

- A deep discount group pass program
- Price: \$41-115/person/year
(\$55-155 for colleges)
- Price depends on organization size and the level of transit service in the area
- Available to employers, educational institutions & residential developments
- Regular pass price: \$80-132.50/month



www.actransit.org/riderinfo/easypass/

AC Transit's Easy Pass program

Members include:

- City of Alameda
- City of Berkeley
- Mills College
- Peralta Community Colleges
- UC Berkeley



www.actransit.org/riderinfo/easypass/

Location	Drive to work		Transit to work	
Municipalities	Before	After	Before	After
Santa Clara (VTA)	76%	60%	11%	27%
Bellevue, Washington	81%	57%	13%	18%
Ann Arbor, Michigan	N/A	(4%)	20%	25%
Downtown Boulder, Colorado	56%	36%	15%	34%
Universities				
UCLA (faculty and staff)	46%	42%	8%	13%
Univ. of Washington, Seattle	33%	24%	21%	36%
Univ. of British Columbia	68%	57%	26%	38%
Univ. of Wisconsin, Milwaukee	54%	41%	12%	26%
Colorado Univ. Boulder (students)	43%	33%	4%	7%

5. Require the unbundling of Parking Costs

Unbundling parking costs from commercial leases

- Example: Downtown Bellevue, WA
- Requires building owners to include parking costs as a separate line item in leases
- Minimum rate for monthly long-term parking: \geq twice the price of a bus pass
- Minimum rate in 2003: \$144/month
- *Maximum* parking requirements: 2.4 spaces / 1000 sf GLA



Results: drive alone commute rate fell by 30%, from 81% driving alone to 57%

Unbundling parking costs at residences

Example: The Gaia Building, Berkeley, CA





Parking costs are "unbundled"

Parking fee: \$150/month



The Freedom of
Driving WITHOUT
The Hassles of Ownership

share



2A



1A

The Gaia Building – Parking Demand



- 91 apartments, theater, café & office space
 - 42 parking spaces supplied
- Result: 237 adult residents with just 20 cars

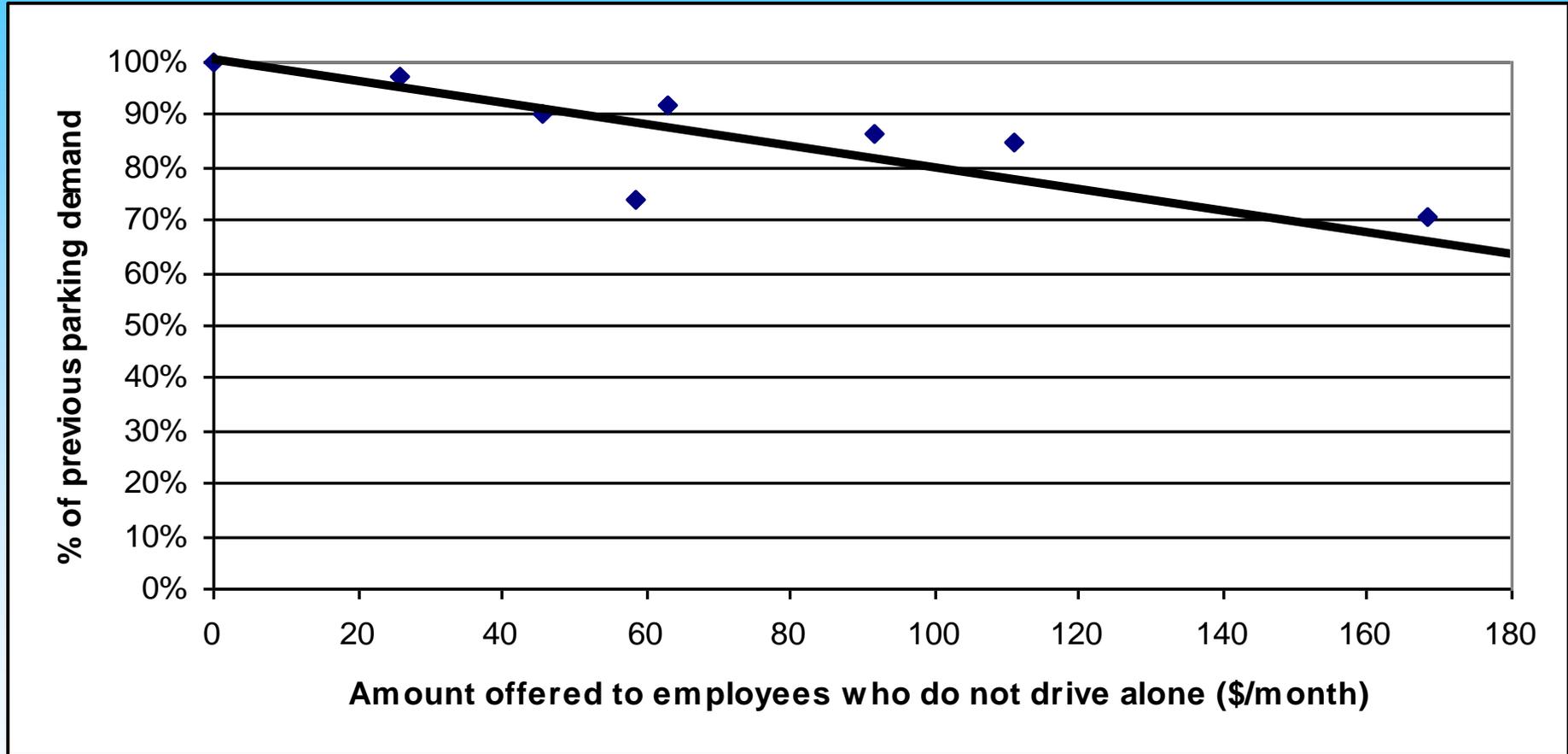
6. Require Parking Cash-Out

Require Parking Cash-Out

- Politically/financially not feasible to charge for parking? *Offer cash value of parking to those who don't drive*
- Consider it part of a cafeteria-style employee benefits package, like health benefit choices
- Example: Santa Monica
- Tenants must make cost of parking visible to employees
 - Full-cost parking fees, OR
 - Full parking cash-out



Parking Cash Out Reduced Demand for Parking



7. Strengthen Transportation Demand Management Requirements

Trip Reduction Ordinances



- ❖ Bellevue (WA) Commute Trip Reduction Law (CTR)
 - Every employer (private, public or non-profit) with 100 or more full-time employees arriving at a single worksite between 6 – 9 am.
 - Covers 53 employers and 22,000 employees

Results: Downtown drive alone rates fell from 81% in 1990 to 57% in 2000 – 30% decrease



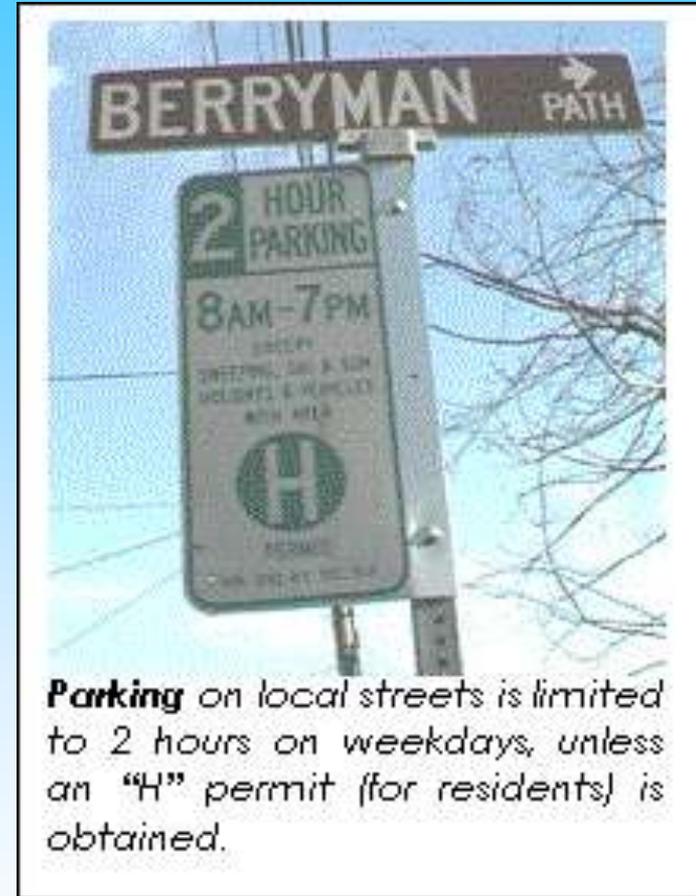
8. Remove Off-Street Minimum Parking Requirements

Before Removing Minimum Requirements

1. Commercial Areas: Set curb parking prices to keep 15% vacancy rate (the “Goldilocks Rule”)
2. Nearby Neighborhoods: Prevent spill-over with Residential Parking Benefit Districts (with 15% vacancy rate).

Why remove requirements?

- Unless they can save on parking costs, property owners have little incentive to reduce parking demand
- Improve urban design, raise property values, improve housing affordability



9. Set Maximum Parking Requirements

Maximum Parking Requirements

- Determine available street capacity
- Limit commuter parking supply to available roadway capacity
- Examples: Portland, San Francisco
- Establish maximums by project use, parking type or district-wide



Maximum Parking Requirements - Examples

- San Francisco 1968-1984:
 - 250,000 new jobs
 - Little or no private parking
 - 11,000 spaces in City-owned garages
 - Prices set to discourage commuter parking
 - No increase in congestion
- Downtown Los Angeles: 0.6 spaces/1000 sf max
- Portland: parking cap with tradable rights



Case Study – Portland, Oregon Parking Maximums

- Long-term parking space limits per 1,000 ft² of office space decreased
 - 1973 - 3.4
 - 1990 - 1.5
- City officials credit these limits with helping to increase transit mode split from about 20% in the early 1970s to 48% in the mid-1990s.

	DD 2&3	DD4	DD 1& 5, UD	RD 5	RD 3 & 4, DD 6	Transit Zone	Rest of Region
Office	0.7	0.8	1.0	1.5	2.0	3.4	4.1
Retail	1.0	1.0	1.0	1.5	12.0	5.1	6.2
Medical centers	1.5	1.5	1.5	1.5	2.0	4.9	5.9
Schools/ colleges	1.0	1.0	1.0	1.5	2.0	0.3*	0.3*
Industrial	0.7	0.7	0.7	0.7	0.7	None	None
Community services	0.25	0.25	0.25	0.25	0.25	Varies	Varies

DD = downtown district; UD = university district; RD = river district; * = per students and staff.
Per 1,000 square feet net building area, unless noted otherwise.

How do maximum parking requirements affect traffic?

1. Maximum requirements are set low enough so that if parking is given away for free, there will be a shortage.
2. Parking at these locations is then provided to the people who use it for a price that covers at least part of its costs, *or*, employers need to provide strong subsidies for alternative transportation, such as a parking cash-out program.
3. Removing parking subsidies (or providing equally strong subsidies for other modes) then brings travel choices back into balance.

10. Improve Transit



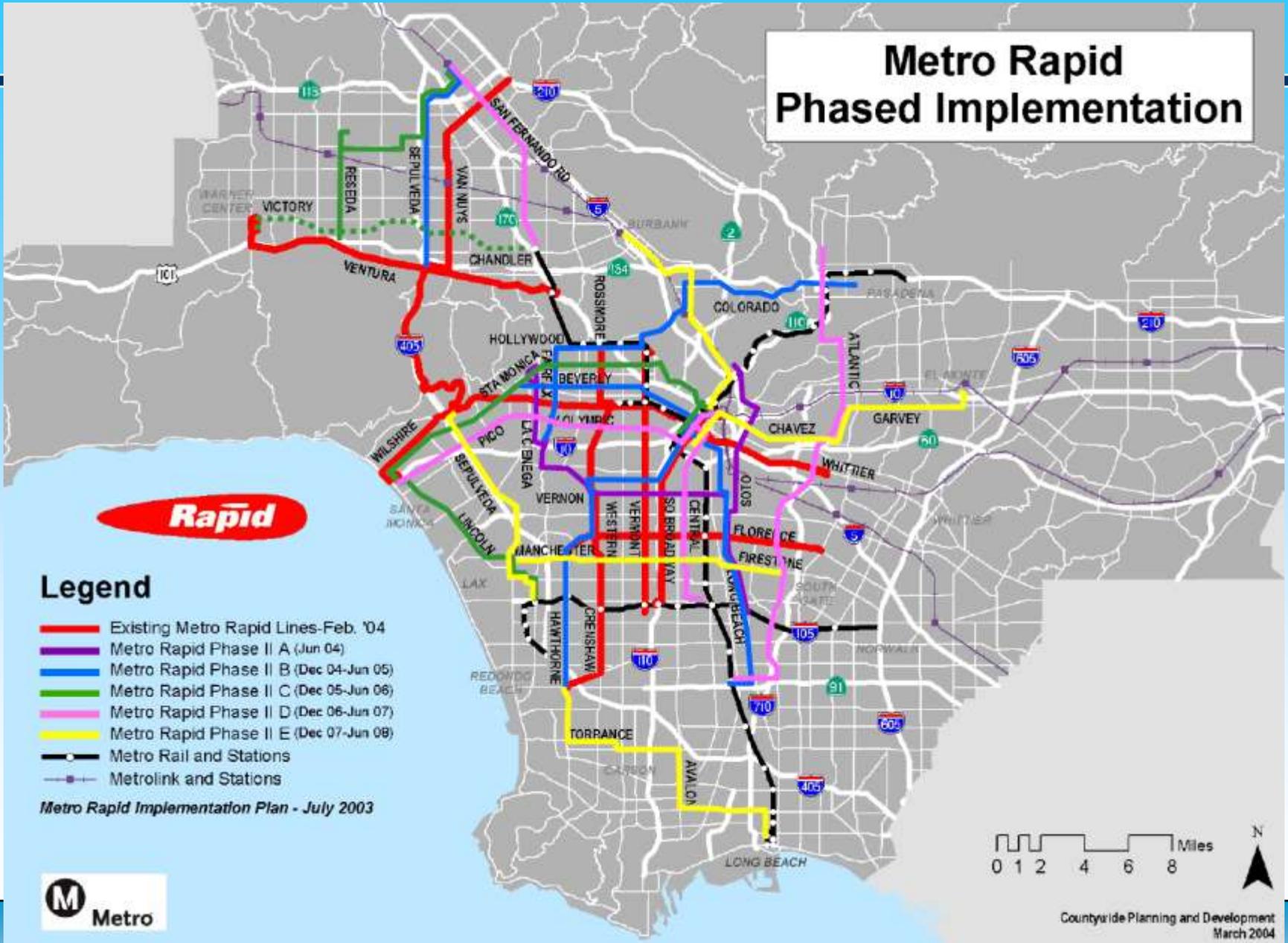
Bus Rapid Transit

Los Angeles MetroRapid

- **Frequent:** every 3-10 minutes during peak hours
- **Fewer stops:** Stops spaced about a $\frac{3}{4}$ mile apart, like rail lines
- **Level boarding:** Low-floor buses reduce dwell times
- **Bus priority** at traffic signals
- **Enhanced stations:** lighting, canopies and real-time arrival displays



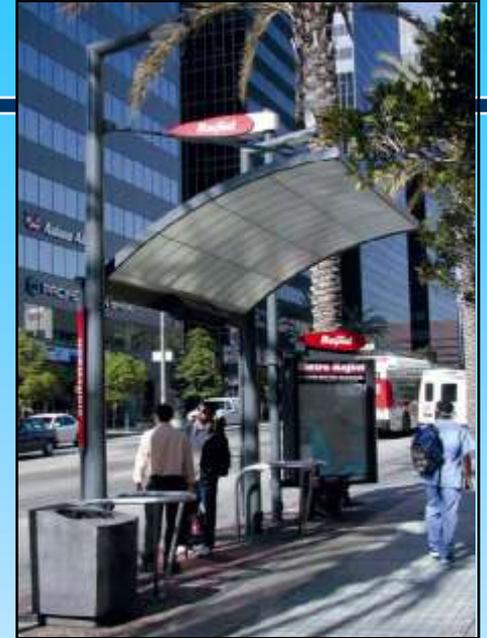
Metro Rapid Phased Implementation



Bus Rapid Transit Ridership

Bus Rapid Transit increases ridership

- Los Angeles (40%)
- Pittsburgh (38%)
- Brisbane (42%)
- Adelaide (76%)
- Leeds (50%)



11. Improve Bicycle and Pedestrian Facilities

Bicycling & Walking

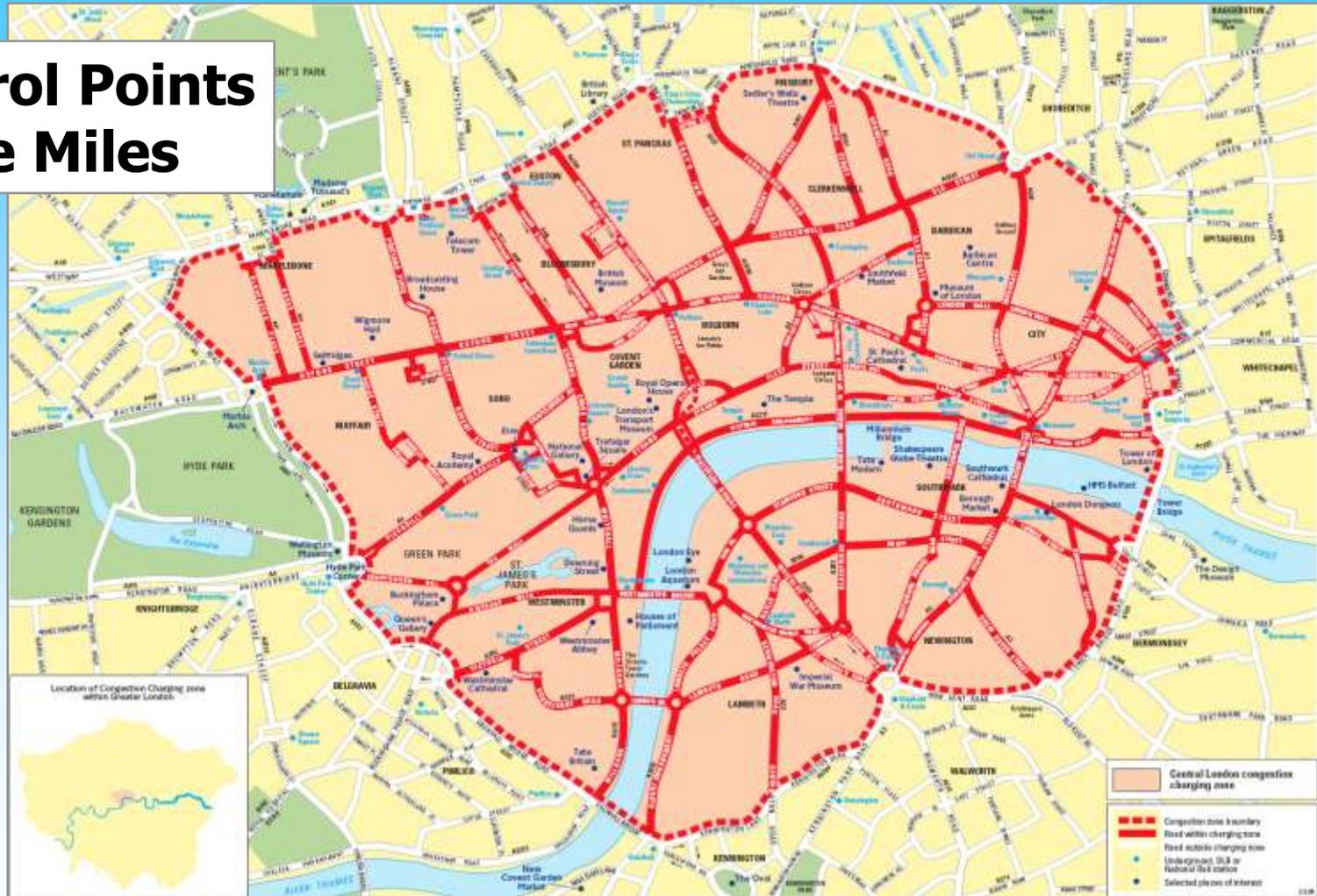
1. Bikeway network
 - bicycle lanes
 - bicycle boulevards
 - bicycle paths
2. Facilities at destinations
 - workplaces: bike lockers, clothes lockers, showers
3. Integrate with transit
 - Bikestations: secure storage, repairs, rentals, sales
4. Programs & services
 - promotion & marketing
 - commute classes & info



12. Establish Congestion Pricing

London Congestion Charging Zones

201 Control Points
10 Square Miles



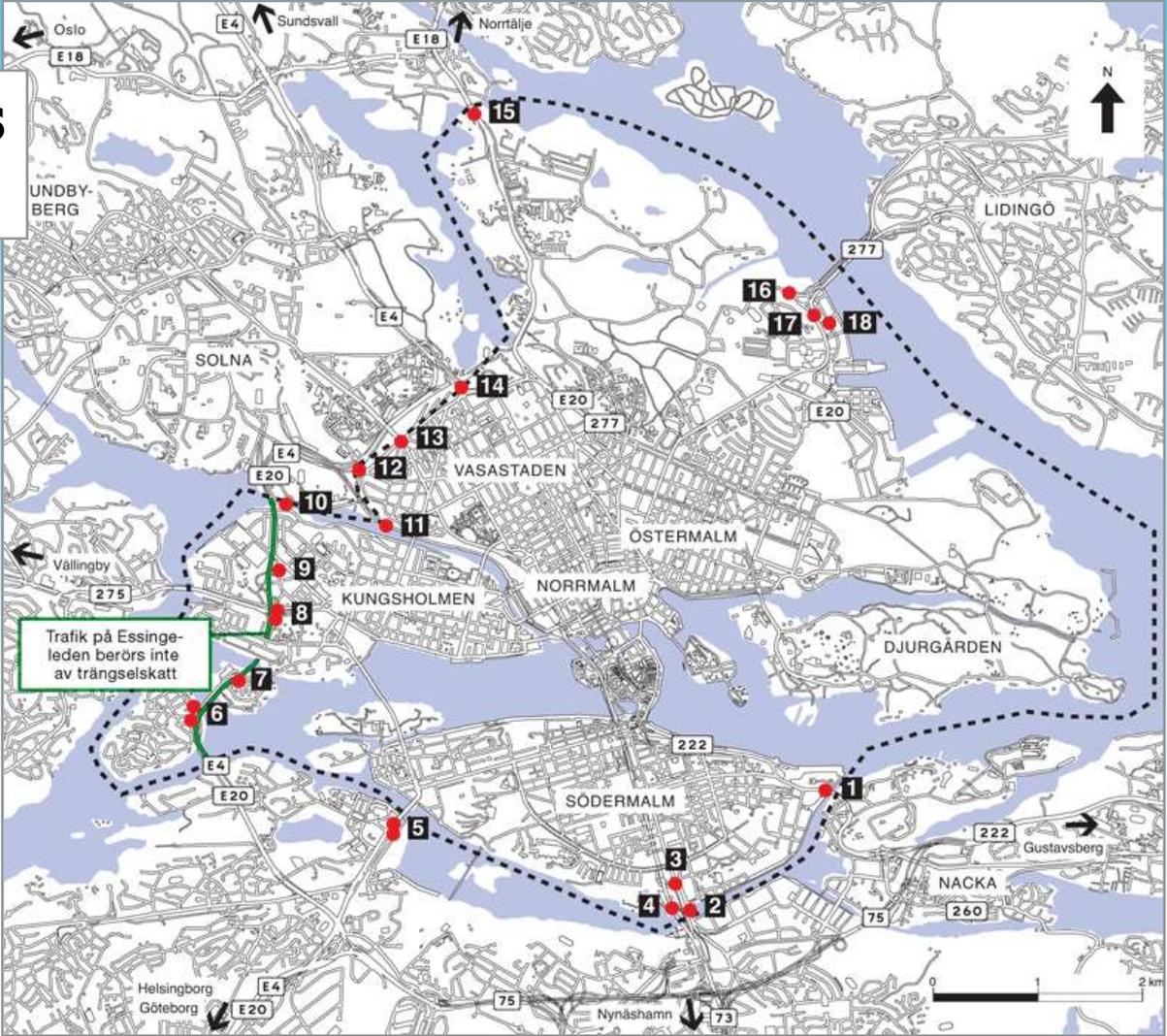
London Effectiveness & Impacts

- Congestion reduced by 26%
- No adverse traffic impacts on surrounding roads
- Overall – slowly declining ‘background’ traffic levels
- No significant impacts on business performance or economy
- Net revenues of £90 million in 2004/05 and £122 million in 2005/06 (fee increase from £5 to £8 in July 2005)
- Spent on improved bus service within London



Stockholm Congestion Charging Zone

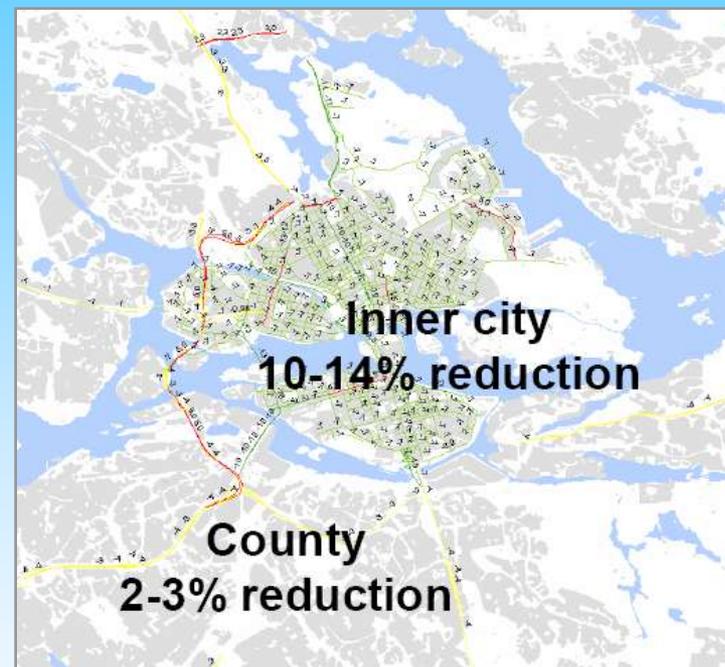
18 Control Points
13 Square Miles



Stockholm Results

- Fee: \$1.35 to \$2.70, varies by time of day
- Traffic reduction after six months averages 22%
 - Equivalent to 100,000 fewer vehicle passages per day
- Increased accessibility
 - Queue times down 30% in AM peak, 50% in PM peak
- Decreased emissions
 - 14% less in inner city; 2.5% in total county

Personal Injuries



Conclusions

Traffic Reduction Case Studies – Lessons Learned

Place	Parking Cash-Out Required	Congestion Pricing	Unbundling of Parking Costs Required	Universal Transit Pass Program	Parking Tax	Low Minimum Parking Requirements	Eliminated Minimum Parking Requirements	Set Maximum Parking Requirements	Priced Parking	Shared Parking/Park Once	Residential Parking Districts	Carpool/Ride Matching Services	Car Sharing	Bicycle Parking Requirements	Rail Transit	Bus Rapid Transit
Arlington County, VA				✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	
Bellevue, WA (Downtown)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Boulder, CO (Downtown)			✓		✓	✓		✓	✓	✓	✓	✓	✓	✓		
Cambridge, MA					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Lloyd District, Portland, OR			✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
London, Great Britain	✓					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Portland, OR (Downtown)						✓	✓	✓	✓	✓		✓	✓	✓		
San Francisco, CA (Downtown)		✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		
Stockholm, Sweden	✓			✓	✓	✓	✓	✓	✓			✓	✓	✓		
Vancouver, B.C.			✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

What can a community do on its own?

Can implement on its own

1. Charge the Right Price for Curb Parking
2. Return Meter Revenue to the Neighborhoods
3. Invest Parking Revenues in Demand Management Programs
4. “Unbundle” Parking Costs
5. Parking Cash-Out
6. Strengthen Transportation Demand Management Requirements
7. Improve Bicycle and Pedestrian Facilities and Programs
8. Remove Minimum Parking Requirements
9. Set Maximum Parking Requirements

Usually requires partners

1. Improve Transit (partner with public transit agencies)
2. Universal Transit Passes (ditto)
3. Establish Congestion Pricing (waiver of state law required)

